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Jameel's Two and Three-Dimensional Stressed Closed Form Models are Indeed IFRS 9 Complaint Models

Jamilu Auwalu Adamu[1]

[1] 118 National Mathematical Centre, Nigeria

Correspondence: Jamilu Auwalu Adamu, 118 National Mathematical Centre, Abuja, Nigeria. Tel: 234-8038-679-094. E-mail: whitehorseconsult@yahoo.com

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Abstract

In the paper entitled "IFRS 9 Measurement of Financial Instruments 2018: Jameel's Non-Normal Brownian Motion Models are Indeed IFRS 9 Complaint Models", the author was able to incorporated a forward-looking information $\{W_{JB(t)}\}$ satisfied Jameel's Criterion and Geometric average of only positive Economic forecasts of the future Macroeconomic parameters $\{(\mu_A) \text{ and } (\sigma_A)\}$ using Jameel's Contractional-Expansional Stress Methods and Jameel's substitutions $\left\{\left(\mu_A \pm \sigma_A W_{JB}(t)\right)\right\}$, μ_A is POSITIVE INFINITESIMAL, $\sigma_A \geq 1$ into Geometric Brownian Motion, Biagin, Cox-Ingersoll-Ross, Ornstein-Uhlenbeck process, Vasicek, Black-Karasinki, Chen, Kalotay-Williams-Fabozzi, Longstaff-Schwatz, Ho-Lee, Hull and White, and Black-Derman-Toy Models for Pricing Stocks, Bitcoin, Indexes, ETFs, and Leveraged ETFs, Bonds, Interest Rate Movements, Caps, Floors, European Swaptions, and Bond Options. However, in this paper, the author has attempted to further stress the research models by REPLACING the forward-looking information $\{W_{JB(t)}\}$ with the LINEAR COMBINATIONS of the forward-looking information(s): (a) $\left\{\left(\mu_A \pm \sigma_A W_{JB1}(t) \pm \sigma_A W_{JB2}(t)\right)\right\}$, μ_A is POSITIVE INFINITESIMAL, $\sigma_A \geq 1$, $W_{JB1}(t)$ is a LOG-LOGISTIC (3P) and $W_{JB2}(t)$ is a CAUCHY; (b) $\left\{\left(\mu_A \pm \sigma_A W_{JB1}(t) \pm \sigma_A W_{JB2}(t) \pm \sigma_A W_{JB3}(t)\right)\right\}$, μ_A is POSITIVE INFINITESIMAL, $\sigma_A \geq 1$, $W_{JB1}(t)$ is a LOG-LOGISTIC (3P), $W_{JB2}(t)$ is a CAUCHY and $W_{JB3}(t)$ is a BURR (4P). The paper tested the performances of TWO and THREE-DIMENSIONALTYPES of the proposed Jameel's stressed closed form solutions with the aid of Chevron Corporation (CVX) Stock data extracted from yahoo finance, time series from 2014 – 1991. The results were fascinatingly interesting, impressive, viable and reliable, sophisticated, and complaint with IFRS 9 since they incorporated MORE forward-looking information(s) and Economic forecasts of the future macroeconomic parameters thereby minimizing the differences between market prices and models prices.

Keywords: Forward-Looking Information, Macroeconomic Parameters, Log-Logistic (3P), Cauchy, Burr (4P)

1. Introduction

In this paper, the Author attempted to INCORPORATE forward-looking information : (a) $\left\{\left(\mu_A \pm \sigma_A W_{JB1}(t) \pm \sigma_A W_{JB2}(t)\right)\right\}$, μ_A is POSITIVE INFINITESIMAL, $\sigma_A \geq 1$, $W_{JB1}(t)$ is a LOG-LOGISTIC (3P) and $W_{JB2}(t)$ is a CAUCHY; (b) $\left\{\left(\mu_A \pm \sigma_A W_{JB1}(t) \pm \sigma_A W_{JB2}(t) \pm \sigma_A W_{JB3}(t)\right)\right\}$, μ_A is POSITIVE INFINITESIMAL, $\sigma_A \geq 1$, $W_{JB1}(t)$ is a LOG-LOGISTIC (3P), $W_{JB2}(t)$ is a CAUCHY and $W_{JB3}(t)$ is a BURR (4P) where $W_{JB1}(t)$,

$W_{JB2}(t)$ and $W_{JB3}(t)$ satisfies Jameel's Criterion with $\{(\mu_A)$ and $(\sigma_A)\}$ are Geometric average of only positive Economic forecasts of the future Macroeconomic scenarios and define by Geometric Means of only positive Arithmetic Means of the Underlying Asset Return and Returns of the future economic forecasts of macroeconomic parameters and Geometric Volatility of only positive Arithmetic Means of the Underlying Asset Return and Returns of the future economic forecasts of macroeconomic parameters respectively. The paper apply Jameel's Contractional-Expansional Stress Methods and Jameel's substitutions to NON-NORMALLY stress the closed form solutions of Geometric Brownian Motion, Biagin, Cox-Ingersoll-Ross, Ornstein-Uhlenbeck process, Vasicek, Black-Karasinki, Chen, Kalotay-Williams-Fabozzi, Longstaff-Schwatz, Ho-Lee, Hull and White, and Black-Derman-Toy Models for Pricing Stocks, Bitcoin, Indexes, ETFs, and Leveraged ETFs, Bonds, Interest Rate Movements, Caps, Floors, European Swaptions, and Bond Options using (i) $\left(\mu_A \pm \sigma_A W_{JB1}(t) \pm \sigma_A W_{JB2}(t)\right)$, whenever $\sigma_A > 1$, μ_A is positive infinitesimal; (ii) $\left(\mu_A \pm W_{JB1}(t) \pm W_{JB2}(t)\right)$, whenever $\sigma_A = 1$, μ_A is positive infinitesimal; (iii) $\left(\pm\sigma_A W_{JB1}(t) \pm \sigma_A W_{JB2}(t)\right)$, whenever $\sigma_A > 1$, $\mu_A = 0$; and (iv) $\left(\pm W_{JB1}(t) \pm W_{JB2}(t)\right)$, whenever $\sigma_A = 1$, $\mu_A = 0$ for TWO-DIMENSIONAL stressed closed form models and (1) $\left(\mu_A \pm \sigma_A W_{JB1}(t) \pm \sigma_A W_{JB2}(t) \pm \sigma_A W_{JB3}(t)\right)$, whenever $\sigma_A > 1$, μ_A is positive infinitesimal; (2) $\left(\mu_A \pm W_{JB1}(t) \pm W_{JB2}(t) \pm W_{JB3}(t)\right)$, whenever $\sigma_A = 1$, μ_A is positive infinitesimal; (3) $\left(\pm\sigma_A W_{JB1}(t) \pm \sigma_A W_{JB2}(t) \pm \sigma_A W_{JB3}(t)\right)$, whenever $\sigma_A > 1$, $\mu_A = 0$; and (4) $\left(\pm W_{JB1}(t) \pm W_{JB2}(t) \pm W_{JB3}(t)\right)$, whenever $\sigma_A = 1$, $\mu_A = 0$ for THREE-DIMENSIONAL stressed closed form models.

Finally, the paper round up with the test of performances of the proposed 2 and 3-dimentional stressed closed form models using Chevron Corporation (CVX) Stock data extracted from yahoo finance, time series from 2014 – 1991.

2. Methods and Materials

2.1 Materials

2.1.1 Linear Combination

In Mathematics, a Linear Combination is an expression constructed from a set of terms by multiplying each term by a constant and adding the results. A Linear Combination of x *and* y is given by $ax + by$.

2.1.2 Jameel's Criterion:

Under this criterion, we run the goodness of fits test such that:

i. We accept if the Average of the ranks of Kolmogorov Smirnor,Anderson Darling and Chi-squared is less than or equal to Three (3)

ii. We must choose the Probability Distribution follows by the data ITSELF regardless of its Rankings

iii. If there is tie, we include both the Probability Distributions in the selection

iv. At least Two (2) Probability Distributions must be included in the selection

v. We select the most occur Probability Distribution as the qualify candidate in each case of test of goodness of fit.

vi. Criterion Enhancement Axiom: Thode (2012) intensively discussed about the Best Goodness of Fit Tests such as Kolmogorov Smirnov (KS) Test, Anderson-Darling Test, Jarque and Bera (JB) Test, Shapiro Wilk (SW) Test, Cramer-Von Mises Test, Pearson $\left(\chi^2\ Godness\ of\ Fit\right)$ Test, Lilliefors Corrected K-S Test,

D'AgostinoSkewness Test, Anscombe-Glynn Kurtosis Test, D'Agostino-Pearson Omnibus Test. Let $\{T_1, T_2, ..., T_n\}$ be the set of such Best Goodness of Fit Tests, $\{x_1, x_2, ..., x_n\}$ be their **RANKS** respectively then the generality of (i) can be expressed (or enhanced) if $\frac{(x_1 + x_2 + ... + x_n)}{n} \le a$, where $0 < a \le n,\ n \in N$ or equivalently, $x_1 + x_2 + ... + x_n \le an$.

vii. Last Unit Axiom: let $W_{JB}(t)$ be such that it satisfied axioms (i) to (iv). Let $\{r_1, r_2, ..., r_n\}$ be the ranks of fitness test of $W_{JB}(t)$ obtained from the tests $\{T_1, T_2, ..., T_n\}$ respectively then if $\forall i \in \{1, 2, ..., n\}$, $r_i = 1$ regardless of the Time Series, Company and so on. Consequently, if for all fitness test runs, turn out to be the same $W_{JB}(t)$ then the **PREDICTED PRICE PATH** will finitely coincides many times with the **REAL PRICE PATH** of the stock under consideration.

2.1.3 Top Fat-Tailed Probability Functions using Jameel's Criterion as of 2015

Using Jameel's Criterion, Jamilu (2015) considered Eleven (11) out of Fifty (50) **World's Biggest Public** Companies by **FORBES** as of 2015 Ranking regardless of the platform in which they are listed, Number of the Research Companies, Time Series (Short or Long), Old or Recently listed Companies using the time series from 2014 – 2009 with the aim of finding the Best Fitted Fat – Tailed Stocks Probability Distributions. However, in this research paper, the Author considered Top Two (2) and 4th Stocks Fat-Tailed Probability Functions thereby comparing the performances of the ***Proposed Jameel's Stressed Closed Form Prices, Normal (Standard Brownian Motion) Prices with Market (Real) Prices*** as shown below:

Log – Logistic (3P) Probability Distribution (1st):

$$f(x;\mu,\sigma,\xi) = \frac{\left(1 + \frac{\xi(x-\mu)}{\sigma}\right)^{-\left(1/\xi+1\right)}}{\left[1 + \left(1 + \frac{\xi(x-\mu)^{-1/\xi}}{\sigma}\right)\right]^2} \quad ; \quad x \ge \mu$$

Cauchy Probability Distribution (2nd):

$$f(x;\mu,\sigma,\pi) = \left(\pi\sigma\left(1 + \left(\frac{x-\mu}{\sigma}\right)^2\right)\right)^{-1} \quad ; \quad -\infty < x < +\infty$$

Burr (4P) Probability Distribution (4th):

$$f(x;\alpha,\beta,\gamma) = \frac{ak\left(\frac{x-\gamma}{\beta}\right)^{\alpha-1}}{\beta\left(1 + \left(\frac{x-\gamma}{\beta}\right)^{\alpha}\right)^{k+1}}; \quad \alpha,\beta,k > 0$$

2.2 Methods

2.2.1 Geometric Brownian Motion Stock Pricing

The Brownian Motion $S(t) = \mu t + \sigma W(t),\ \mu \in R,\ \sigma \ge 0$, the Wiener Process $W(t)$ is indeed a Random

GAUSSIAN (NORMAL) Function with mean zero and variance t as shown by Norbert-Wiener in the early 1920s. Mathematically, $W(t)$ is a NORMALLY DISTRIBUTED random variable with expected value zero and variance t. Therefore it is true that $W(t) \sim N(0,t)$. From the fact that the process $\{W(t): t \geq 0\}$ is a GAUSSIAN (NORMAL) with mean zero and variance t then $S(t) = \mu t + \sigma W(t)$ is a NORMAL BROWNIAN MOTION STOCK PRICE.

2.2.2 Propose 2-Dimentional Jameel's Stressed Stock Pricing Models for IFRS 9 Compliance

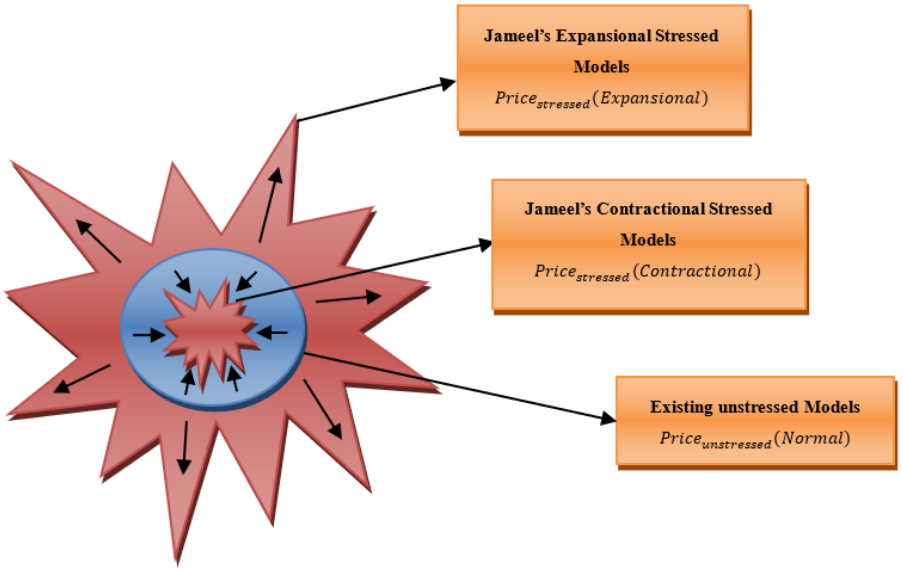

Figure 1. Jameel's Contractional-Expansional Stressed Methods

Applying Jameel's Criterion and Jameel's Contractional-Expansional Stressed Methods to **REPLACE** $\{W_{JB}\}_{t\geq 0}$ of the Geometric Brownian Motion with the **JAMEEL'S SUBSTITUTIONS FOR IFRS 9 COMPLIANCE** for **TWO-DIMENSIONAL** stress closed form (i) $\left(\mu_A \pm \sigma_A W_{JB1}(t) \pm \sigma_A W_{JB2}(t)\right)$, whenever $\sigma_A > 1$, μ_A is positive infinitesimal; (ii) $\left(\mu_A \pm W_{JB1}(t) \pm W_{JB2}(t)\right)$, whenever $\sigma_A = 1$, μ_A is positive infinitesimal; (iii) $\left(\pm\sigma_A W_{JB1}(t) \pm \sigma_A W_{JB2}(t)\right)$, whenever $\sigma_A > 1$, $\mu_A = 0$; and (iv) $\left(\pm W_{JB1}(t) \pm W_{JB2}(t)\right)$, whenever $\sigma_A = 1$, $\mu_A = 0$, then we have the following ***Propose Jameel's Stressed Closed Form Stocks Pricing Models TYPES for IFRS 9 Compliance as:***

TYPE 1:

$$\left(S_{JB}(t)\right)_{Stressed} = p_0 \exp\left(\mu t + \sigma\left(\mu_A \pm \sigma_A W_{JB1}(t) \pm \sigma_A W_{JB2}(t)\right)\right),$$

whenever $\sigma_A > 1$, μ_A is positive infinitesimal;

TYPE 2:

$$\left(S_{JB}(t)\right)_{Stressed} = p_0 \exp\left(\mu t + \sigma\left(\mu_A \pm W_{JB1}(t) \pm W_{JB2}(t)\right)\right),$$

whenever $\sigma_A = 1,\ \mu_A$ is positive infinitesimal;

TYPE 3:

$$\left(S_{JB}(t)\right)_{Stressed} = p_0 \exp\left(\mu t + \sigma\left(\pm\sigma_A\, W_{JB1}(t) \pm \sigma_A\, W_{JB2}(t)\right)\right),$$

whenever $\sigma_A > 1,\ \mu_A = 0$;

TYPE 4:

$$\left(S_{JB}(t)\right)_{Stressed} = p_0 \exp\left(\mu t + \sigma\left(\pm\, W_{JB1}(t) \pm\, W_{JB2}(t)\right)\right),$$

whenever $\sigma_A = 1,\ \mu_A = 0$;

2.2.3 Propose 3-Dimentional Jameel's Stressed Stock Pricing Models for IFRS 9 Compliance

Also, applying Jameel's Criterion and Jameel's Contractional-Expansional Stressed Methods to **REPLACE** $\{W_{JB}\}_{t\geq 0}$ of the Geometric Brownian Motion with the **JAMEEL'S SUBSTITUTIONS FOR IFRS 9 COMPLIANCE** for **THREE-DIMENSIONAL** stress closed form (1) $\left(\mu_A \pm \sigma_A\, W_{JB1}(t) \pm \sigma_A\, W_{JB2}(t) \pm \sigma_A\, W_{JB3}(t)\right)$, whenever $\sigma_A > 1$, μ_A is positive infinitesimal; (2) $\left(\mu_A \pm W_{JB1}(t) \pm\, W_{JB2}(t) \pm\, W_{JB3}(t)\right)$, whenever $\sigma_A = 1,\ \mu_A$ is positive infinitesimal; (3) $\left(\pm\sigma_A\, W_{JB1}(t) \pm \sigma_A\, W_{JB2}(t) \pm \sigma_A\, W_{JB3}(t)\right)$, whenever $\sigma_A > 1,\ \mu_A = 0$; and (4) $\left(\pm\, W_{JB1}(t) \pm\, W_{JB2}(t) \pm\, W_{JB3}(t)\right)$, whenever $\sigma_A = 1,\ \mu_A = 0$ then we have the following

Propose Jameel's Stressed Closed Form Stocks Pricing Models TYPES for IFRS 9 Compliance as:

TYPE 1:

$$\left(S_{JB}(t)\right)_{Stressed} = p_0 \exp\left(\mu t + \sigma\left(\mu_A \pm \sigma_A\, W_{JB1}(t) \pm \sigma_A\, W_{JB2}(t) \pm \sigma_A\, W_{JB3}(t)\right)\right),$$

whenever $\sigma_A > 1,\ \mu_A$ is positive infinitesimal;

TYPE 2:

$$\left(S_{JB}(t)\right)_{Stressed} = p_0 \exp\left(\mu t + \sigma\left(\mu_A \pm W_{JB1}(t) \pm\, W_{JB2}(t) \pm\, W_{JB3}(t)\right)\right),$$

whenever $\sigma_A = 1,\ \mu_A$ is positive infinitesimal;

TYPE 3:

$$\left(S_{JB}(t)\right)_{Stressed} = p_0 \exp\left(\mu t + \sigma\left(\pm\sigma_A\, W_{JB1}(t) \pm \sigma_A\, W_{JB2}(t) \pm \sigma_A\, W_{JB3}(t)\right)\right),$$

whenever $\sigma_A > 1,\ \mu_A = 0$;

TYPE 4:

$$\left(S_{JB}(t)\right)_{Stressed} = p_0 \exp\left(\mu t + \sigma\left(\pm\, W_{JB1}(t) \pm\, W_{JB2}(t) \pm\, W_{JB3}(t)\right)\right),$$

whenever $\sigma_A = 1,\ \mu_A = 0$;

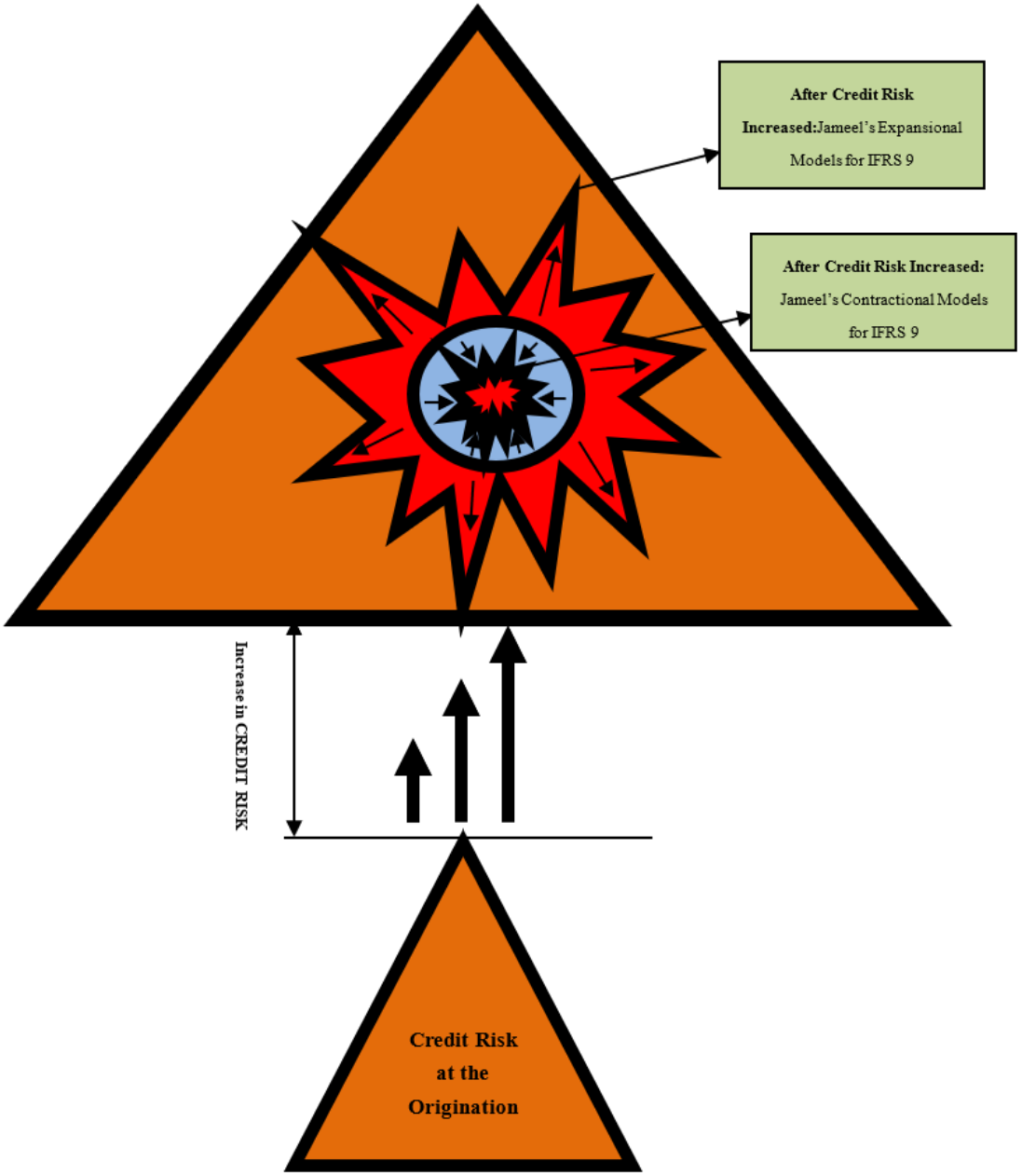

Figure 2. Jameel's Transformational Diagram for IFRS 9 Compliance

Generally, using Jameel's Criterion and Jameel's Contractional-Expansional Stressed Methods, we replaces the **WIENER PROCESSES (NORMAL** and or **LOG-NORMAL)** terms appears in the **CLOSED FORM SOLUTIONS of *Ornstein – Uhlenbeck Process, Cox-Ingersoll-Ross (1985) Model, Vasicek Model, Black-Karasinki (1991) Model, Chen (1994) Model, Kalotay – Williams – Fabozzi (1993) Model, Longstaff - Schwatz (1992) Model, Ho-Lee Model (1986) Model, Hull-White (1990) Model, Black-Derman-Toy (1990) Model, Heston Volatility Model and ETFs and Leveraged ETFs Models*** by **JAMEEL'S SUBSTITUTIONS FOR IFRS 9 COMPLIANCE** for TWO and THREE-DIMENSIONAL as presented in the case GEOMETRIC BROWNIAN MOTION of STOCKS PRICING MODELS to obtain their ***Stressed Closed Form Models TYPES for IFRS 9 Compliance.***

3. Results

To test the performances of the proposed Sixteen (16) Jameel's Stressed Closed Form Solutions considering Stocks Geometric Brownian Model, the Author considered Chevron Corporation (CVX) Stock data extracted from yahoo finance using Time Series from 2014 – 1991. Thus, the data distribution Mean equal 0.000326, Standard Deviation

equal 0.015761, the Annual drift of the year preceding 2014 (2013) equal 0.000466 and the Annual Volatility of the year preceding 2014 (2013) equal 0.008325. Hence, $\mu_{daily} = 0.000466/252 = 1.84921E-06$, $\sigma_{daily} = 0.008325/\sqrt{252} = 0.000524$.

Therefore, $\mu = \mu_{daily} - \frac{1}{2}\sigma_{daily}^2 = 1.84921E-06 - \frac{1}{2}(0.000524)^2 = 1.71192E-06$ and $\sigma = 0.000524$

while $\mu_A = 0.030383975$, and $\sigma_A = 0.111414539$.

The Author uses $p_0 = 108.87$ as of 11/28/2014 (a day before 12/1/2014) as the Initial Stock Price with intention to Predict Twenty One (21) working days (from 12/1/ 2014 to 12/30/ 2014) Chevron Corporation (CVX) Stock Prices thereby comparing the REAL PRICES, NORMAL PRICES with the other PROPOSED JAMEEL'S STRESSED CLOSED FORM PRICES.

The Author performs the PREDICTION Using MICROSOFT EXCEL and obtained the following RESULTS as shown in Tables and Charts below:

Note that in Table 1, the notation $\boldsymbol{T_1}(\pm, \mp)$ means different models of Type 1, 2-Dimensional Jameel's Stressed Closed Form Prices; in Table 2, $\boldsymbol{T_2}(\pm, \mp)$ means different models of Type 2, 2-Dimensional Jameel's Stressed Closed Form Prices; in Table 3, $\boldsymbol{T_3}(\pm, \mp)$ means different models of Type 3, 2-Dimensional Jameel's Stressed Closed Form Prices; in Table 3, $\boldsymbol{T_4}(\pm, \mp)$ means different models of Type 4, 2-Dimensional Jameel's Stressed Closed Form Prices; while in Table 5, the notation $\boldsymbol{T_1}(\pm, \mp, \pm)$ means different models of Type 1, 3-Dimensional Jameel's Stressed Closed Form Prices; in Table 6, $\boldsymbol{T_2}(\pm, \mp, \pm)$ means different models of Type 2, 3-Dimensional Jameel's Stressed Closed Form Prices; in Table 7, $\boldsymbol{T_3}(\pm, \mp, \pm)$ means different models of Type 3, 3-Dimensional Jameel's Stressed Closed Form Prices; in Table 8, $\boldsymbol{T_4}(\pm, \mp, \pm)$ means different models of Type 4, 3-Dimensional Jameel's Stressed Closed Form Prices.

Table 1. CVX Stressed Prices of Propose Type 1, 2-Dimensional Jameel's Stressed Models for IFRS 9 Compliance

Date	t	REAL PRICES	NORMAL PRICES	T1(+,+)	T1(+,-)	T1(-,+)	T1(-,-)
11/28/2014	**0**	**108.87**					
12/1/2014	1	111.730003	108.8701864	108.87198	108.87198	108.87186	108.87186
12/2/2014	2	114.019997	111.7303855	111.73222	111.73222	111.73211	111.73211
12/3/2014	3	113.709999	114.0205826	114.02246	114.02246	114.02234	114.02234
12/4/2014	4	112.279999	113.7107777	113.71265	113.71265	113.71253	113.71253
12/5/2014	5	110.870003	112.2809601	112.28281	112.28281	112.28269	112.28269
12/8/2014	6	106.800003	110.8711418	110.87296	110.87296	110.87285	110.87285
12/9/2014	7	107.010002	106.8012828	106.80304	106.80304	106.80293	106.80293
12/10/2014	8	104.860001	107.0114676	107.01323	107.01323	107.01311	107.01311
12/11/2014	9	104.910004	104.8616166	104.86334	104.86334	104.86323	104.86323
12/12/2014	10	102.379997	104.9118	104.91353	104.91353	104.91341	104.91341
12/15/2014	11	100.860001	102.3819249	102.38361	102.38361	102.3835	102.3835
12/16/2014	12	101.699997	100.862073	100.86373	100.86373	100.86362	100.86362
12/17/2014	13	106.019997	101.7022604	101.70393	101.70393	101.70382	101.70382
12/18/2014	14	109.029999	106.022538	106.02428	106.02428	106.02417	106.02417
12/19/2014	15	112.93	109.0327988	109.03459	109.03459	109.03448	109.03448
12/22/2014	16	112.029999	112.9330933	112.93495	112.93495	112.93483	112.93483
12/23/2014	17	113.949997	112.0332594	112.0351	112.0351	112.03499	112.03499
12/24/2014	18	113.470001	113.9535084	113.95538	113.95538	113.95526	113.95526
12/26/2014	19	113.25	113.4736918	113.47556	113.47556	113.47544	113.47544
12/29/2014	20	113.32	113.2538776	113.25574	113.25574	113.25562	113.25562
12/30/2014	21	113.110001	113.324074	113.32594	113.32594	113.32582	113.32582

Table 2. CVX Stressed Prices of Propose Type 2, 2-Dimensional Jameel's Stressed Models for IFRS 9 Compliance

Date	t	REAL PRICES	NORMAL PRICES	T2(+,+)	T2(+,-)	T2(-,+)	T2(-,-)
11/28/2014	**0**	**108.87**					
12/1/2014	1	111.730003	108.8701864	108.87243	108.87243	108.87141	108.87141
12/2/2014	2	114.019997	111.7303855	111.73268	111.73268	111.73165	111.73165
12/3/2014	3	113.709999	114.0205826	114.02292	114.02292	114.02187	114.02187
12/4/2014	4	112.279999	113.7107777	113.71311	113.71311	113.71206	113.71206
12/5/2014	5	110.870003	112.2809601	112.28327	112.28327	112.28223	112.28223
12/8/2014	6	106.800003	110.8711418	110.87342	110.87342	110.87239	110.87239
12/9/2014	7	107.010002	106.8012828	106.80349	106.80349	106.80248	106.80248
12/10/2014	8	104.860001	107.0114676	107.01368	107.01368	107.01266	107.01266
12/11/2014	9	104.910004	104.8616166	104.86379	104.86379	104.86278	104.86278
12/12/2014	10	102.379997	104.9118	104.91397	104.91397	104.91297	104.91297
12/15/2014	11	100.860001	102.3819249	102.38405	102.38405	102.38306	102.38306
12/16/2014	12	101.699997	100.862073	100.86417	100.86417	100.86319	100.86319
12/17/2014	13	106.019997	101.7022604	101.70437	101.70437	101.70339	101.70339
12/18/2014	14	109.029999	106.022538	106.02473	106.02473	106.02372	106.02372
12/19/2014	15	112.93	109.0327988	109.03505	109.03505	109.03402	109.03402
12/22/2014	16	112.029999	112.9330933	112.93541	112.93541	112.93437	112.93437
12/23/2014	17	113.949997	112.0332594	112.03556	112.03556	112.03452	112.03452
12/24/2014	18	113.470001	113.9535084	113.95585	113.95585	113.9548	113.9548
12/26/2014	19	113.25	113.4736918	113.47602	113.47602	113.47497	113.47497
12/29/2014	20	113.32	113.2538776	113.2562	113.2562	113.25516	113.25516
12/30/2014	21	113.110001	113.324074	113.3264	113.3264	113.32535	113.32535

Table 3. CVX Stressed Prices of Propose Type 3, 2-Dimensional Jameel's Stressed Models for IFRS 9 Compliance

Date	t	REAL PRICES	NORMAL PRICES	T3(+,+)	T3(+,-)	T3(-,+)	T3(-,-)
11/28/2014	**0**	**108.87**					
12/1/2014	1	111.730003	108.8701864	108.87024	108.87024	108.87013	108.87013
12/2/2014	2	114.019997	111.7303855	111.73044	111.73044	111.73033	111.73033
12/3/2014	3	113.709999	114.0205826	114.02064	114.02064	114.02052	114.02052
12/4/2014	4	112.279999	113.7107777	113.71084	113.71084	113.71072	113.71072
12/5/2014	5	110.870003	112.2809601	112.28102	112.28102	112.2809	112.2809
12/8/2014	6	106.800003	110.8711418	110.8712	110.8712	110.87108	110.87108
12/9/2014	7	107.010002	106.8012828	106.80134	106.80134	106.80123	106.80123
12/10/2014	8	104.860001	107.0114676	107.01152	107.01152	107.01141	107.01141
12/11/2014	9	104.910004	104.8616166	104.86167	104.86167	104.86156	104.86156
12/12/2014	10	102.379997	104.9118	104.91186	104.91186	104.91174	104.91174
12/15/2014	11	100.860001	102.3819249	102.38198	102.38198	102.38187	102.38187
12/16/2014	12	101.699997	100.862073	100.86213	100.86213	100.86202	100.86202
12/17/2014	13	106.019997	101.7022604	101.70232	101.70232	101.70221	101.70221
12/18/2014	14	109.029999	106.022538	106.02259	106.02259	106.02248	106.02248
12/19/2014	15	112.93	109.0327988	109.03286	109.03286	109.03274	109.03274
12/22/2014	16	112.029999	112.9330933	112.93315	112.93315	112.93304	112.93304
12/23/2014	17	113.949997	112.0332594	112.03332	112.03332	112.0332	112.0332
12/24/2014	18	113.470001	113.9535084	113.95357	113.95357	113.95345	113.95345
12/26/2014	19	113.25	113.4736918	113.47375	113.47375	113.47363	113.47363
12/29/2014	20	113.32	113.2538776	113.25394	113.25394	113.25382	113.25382
12/30/2014	21	113.110001	113.324074	113.32413	113.32413	113.32402	113.32402

Table 4. CVX Stressed Prices of Propose Type 4, 2-Dimensional Jameel's Stressed Models for IFRS 9 Compliance

Date	t	REAL PRICES	NORMAL PRICES	T4(+,+)	T4(+,-)	T4(-,+)	T4(-,-)
11/28/2014	**0**	**108.87**					
12/1/2014	1	111.730003	108.8701864	108.8707	108.8707	108.86967	108.86967
12/2/2014	2	114.019997	111.7303855	111.7309	111.7309	111.72987	111.72987
12/3/2014	3	113.709999	114.0205826	114.02111	114.02111	114.02006	114.02006
12/4/2014	4	112.279999	113.7107777	113.7113	113.7113	113.71025	113.71025
12/5/2014	5	110.870003	112.2809601	112.28148	112.28148	112.28044	112.28044
12/8/2014	6	106.800003	110.8711418	110.87166	110.87166	110.87062	110.87062
12/9/2014	7	107.010002	106.8012828	106.80179	106.80179	106.80078	106.80078
12/10/2014	8	104.860001	107.0114676	107.01197	107.01197	107.01096	107.01096
12/11/2014	9	104.910004	104.8616166	104.86212	104.86212	104.86112	104.86112
12/12/2014	10	102.379997	104.9118	104.9123	104.9123	104.9113	104.9113
12/15/2014	11	100.860001	102.3819249	102.38242	102.38242	102.38143	102.38143
12/16/2014	12	101.699997	100.862073	100.86256	100.86256	100.86158	100.86158
12/17/2014	13	106.019997	101.7022604	101.70275	101.70275	101.70177	101.70177
12/18/2014	14	109.029999	106.022538	106.02304	106.02304	106.02203	106.02203
12/19/2014	15	112.93	109.0327988	109.03331	109.03331	109.03229	109.03229
12/22/2014	16	112.029999	112.9330933	112.93362	112.93362	112.93257	112.93257
12/23/2014	17	113.949997	112.0332594	112.03378	112.03378	112.03274	112.03274
12/24/2014	18	113.470001	113.9535084	113.95403	113.95403	113.95298	113.95298
12/26/2014	19	113.25	113.4736918	113.47422	113.47422	113.47317	113.47317
12/29/2014	20	113.32	113.2538776	113.2544	113.2544	113.25335	113.25335
12/30/2014	21	113.110001	113.324074	113.3246	113.3246	113.32355	113.32355

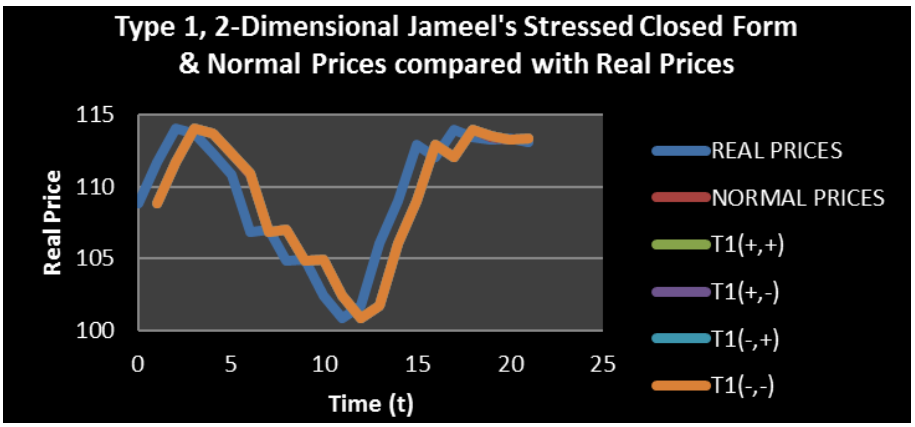

Figure 3.

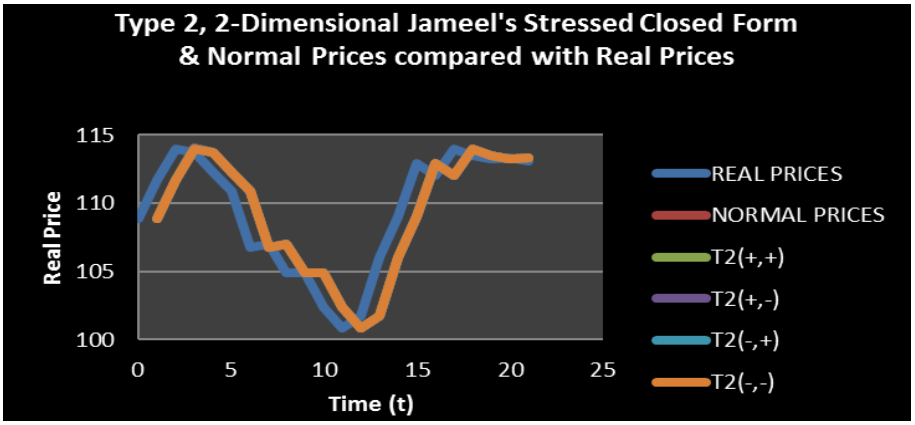

Figure 4.

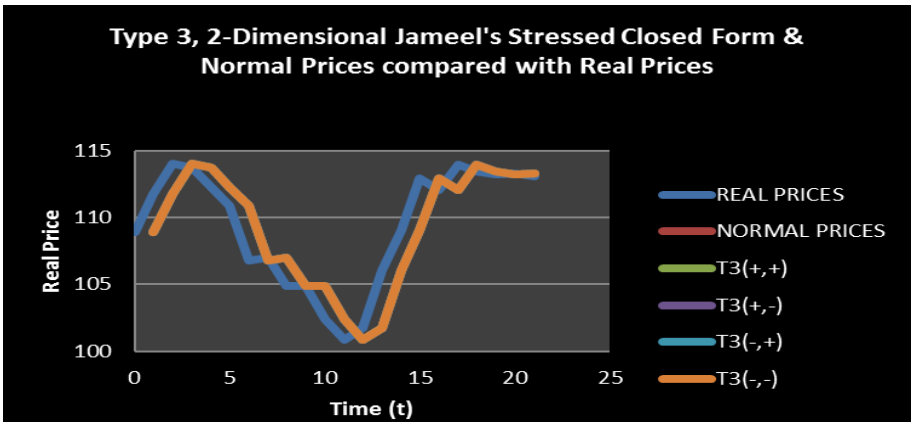

Figure 5.

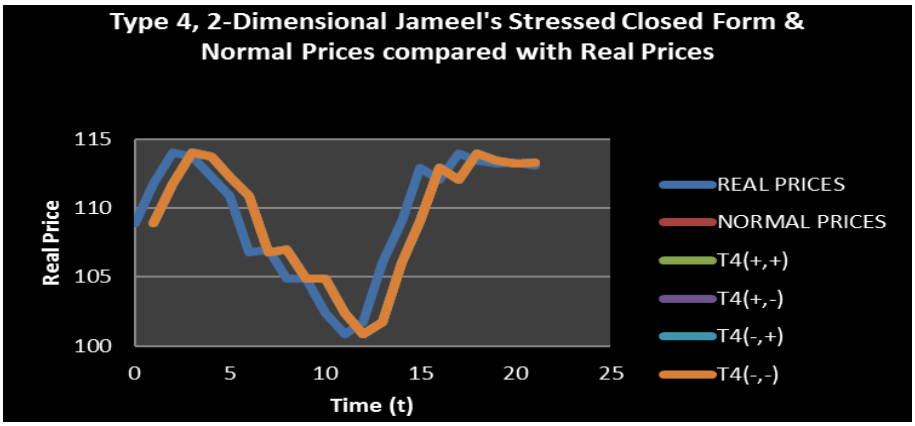

Figure 6.

Table 5. CVX Stressed Prices of Propose Type 1, 3-Dimensional Jameel's Stressed Models for IFRS 9 Compliance

Date	t	REAL PRICES	NORMAL PRICES	T1(+,+,+)	T1(+,+,-)	T1(+,-,-)	T1(-,-,-)	T1(-,-,+)	T1(-,+,+)	T1(-,+,-)	T1(+,-,+)
11/28/2014	**0**	**108.87**									
12/1/2014	1	111.730003	108.8701864	108.87198	108.87198	108.87198	108.87186	108.87186	108.87186	108.87186	108.87198
12/2/2014	2	114.019997	111.7303855	111.73222	111.73222	111.73222	111.73211	111.73211	111.73211	111.73211	111.73222
12/3/2014	3	113.709999	114.0205826	114.02246	114.02246	114.02246	114.02234	114.02234	114.02234	114.02234	114.02246
12/4/2014	4	112.279999	113.7107777	113.71265	113.71265	113.71265	113.71253	113.71253	113.71253	113.71253	113.71265
12/5/2014	5	110.870003	112.2809601	112.28281	112.28281	112.28281	112.28269	112.28269	112.28269	112.28269	112.28281
12/8/2014	6	106.800003	110.8711418	110.87296	110.87296	110.87296	110.87285	110.87285	110.87285	110.87285	110.87296
12/9/2014	7	107.010002	106.8012828	106.80304	106.80304	106.80304	106.80293	106.80293	106.80293	106.80293	106.80304
12/10/2014	8	104.860001	107.0114676	107.01323	107.01323	107.01323	107.01311	107.01311	107.01311	107.01311	107.01323
12/11/2014	9	104.910004	104.8616166	104.86334	104.86334	104.86334	104.86323	104.86323	104.86323	104.86323	104.86334
12/12/2014	10	102.379997	104.9118	104.91353	104.91353	104.91353	104.91341	104.91341	104.91341	104.91341	104.91353
12/15/2014	11	100.860001	102.3819249	102.38361	102.38361	102.38361	102.3835	102.3835	102.3835	102.3835	102.38361
12/16/2014	12	101.699997	100.862073	100.86373	100.86373	100.86373	100.86362	100.86362	100.86362	100.86362	100.86373
12/17/2014	13	106.019997	101.7022604	101.70393	101.70393	101.70393	101.70382	101.70382	101.70382	101.70382	101.70393
12/18/2014	14	109.029999	106.022538	106.02428	106.02428	106.02428	106.02417	106.02417	106.02417	106.02417	106.02428
12/19/2014	15	112.93	109.0327988	109.03459	109.03459	109.03459	109.03448	109.03448	109.03448	109.03448	109.03459
12/22/2014	16	112.029999	112.9330933	112.93495	112.93495	112.93495	112.93483	112.93483	112.93483	112.93483	112.93495
12/23/2014	17	113.949997	112.0332594	112.0351	112.0351	112.0351	112.03499	112.03499	112.03499	112.03499	112.0351
12/24/2014	18	113.470001	113.9535084	113.95538	113.95538	113.95538	113.95526	113.95526	113.95526	113.95526	113.95538
12/26/2014	19	113.25	113.4736918	113.47556	113.47556	113.47556	113.47544	113.47544	113.47544	113.47544	113.47556
12/29/2014	20	113.32	113.2538776	113.25574	113.25574	113.25574	113.25562	113.25562	113.25562	113.25562	113.25574
12/30/2014	21	113.110001	113.324074	113.32594	113.32594	113.32594	113.32582	113.32582	113.32582	113.32582	113.32594

Table 6. CVX Stressed Prices of Propose Type 2, 3-Dimensional Jameel's Stressed Models for IFRS 9 Compliance

Date	t	REAL PRICES	NORMAL PRICES	T2(+,+,+)	T2(+,+,-)	T2(+,-,-)	T2(-,-,-)	T2(-,-,+)	T2(-,+,+)	T2(-,+,-)	T2(+,-,+)
11/28/2014	**0**	**108.87**									
12/1/2014	1	111.730003	108.8701864	108.87243	108.87243	108.87243	108.87141	108.87141	108.87141	108.87141	108.87243
12/2/2014	2	114.019997	111.7303855	111.73268	111.73268	111.73268	111.73164	111.73165	111.73165	111.73164	111.73268
12/3/2014	3	113.709999	114.0205826	114.02292	114.02292	114.02292	114.02187	114.02187	114.02187	114.02187	114.02292
12/4/2014	4	112.279999	113.7107777	113.71311	113.71311	113.71311	113.71206	113.71206	113.71206	113.71206	113.71311
12/5/2014	5	110.870003	112.2809601	112.28327	112.28327	112.28327	112.28223	112.28223	112.28223	112.28223	112.28327
12/8/2014	6	106.800003	110.8711418	110.87342	110.87342	110.87342	110.87239	110.87239	110.87239	110.87239	110.87342
12/9/2014	7	107.010002	106.8012828	106.80349	106.80349	106.80349	106.80248	106.80248	106.80248	106.80248	106.80349
12/10/2014	8	104.860001	107.0114676	107.01368	107.01368	107.01368	107.01266	107.01266	107.01266	107.01266	107.01368
12/11/2014	9	104.910004	104.8616166	104.86379	104.86379	104.86379	104.86278	104.86278	104.86278	104.86278	104.86379
12/12/2014	10	102.379997	104.9118	104.91397	104.91397	104.91397	104.91297	104.91297	104.91297	104.91297	104.91397
12/15/2014	11	100.860001	102.3819249	102.38405	102.38405	102.38405	102.38306	102.38306	102.38306	102.38306	102.38405
12/16/2014	12	101.699997	100.862073	100.86417	100.86417	100.86417	100.86319	100.86319	100.86319	100.86319	100.86417
12/17/2014	13	106.019997	101.7022604	101.70437	101.70437	101.70437	101.70339	101.70339	101.70339	101.70339	101.70437
12/18/2014	14	109.029999	106.022538	106.02473	106.02473	106.02473	106.02372	106.02372	106.02372	106.02372	106.02473
12/19/2014	15	112.93	109.0327988	109.03505	109.03505	109.03505	109.03402	109.03402	109.03402	109.03402	109.03505
12/22/2014	16	112.029999	112.9330933	112.93541	112.93541	112.93541	112.93437	112.93437	112.93437	112.93437	112.93541
12/23/2014	17	113.949997	112.0332594	112.03556	112.03556	112.03556	112.03452	112.03452	112.03452	112.03452	112.03556
12/24/2014	18	113.470001	113.9535084	113.95585	113.95585	113.95585	113.9548	113.9548	113.9548	113.9548	113.95585
12/26/2014	19	113.25	113.4736918	113.47602	113.47602	113.47602	113.47497	113.47497	113.47497	113.47497	113.47602
12/29/2014	20	113.32	113.2538776	113.2562	113.2562	113.2562	113.25516	113.25516	113.25516	113.25516	113.2562
12/30/2014	21	113.110001	113.324074	113.3264	113.3264	113.3264	113.32535	113.32535	113.32535	113.32535	113.3264

Table 7. CVX Stressed Prices of Propose Type 3, 3-Dimensional Jameel's Stressed Models for IFRS 9 Compliance

Date	t	REAL PRICES	NORMAL PRICES	T3(+,+,+)	T3(+,+,-)	T3 (+,-,-)	T3 (-,-,-)	T3 (-,-,+)	T3 (-,+,+)	T3 (-,+,-)	T3 (+,-,+)
11/28/2014	**0**	**108.87**									
12/1/2014	1	111.730003	108.8701864	108.87024	108.87024	108.87024	108.87013	108.87013	108.87013	108.87013	108.87024
12/2/2014	2	114.019997	111.7303855	111.73044	111.73044	111.73044	111.73033	111.73033	111.73033	111.73033	111.73044
12/3/2014	3	113.709999	114.0205826	114.02064	114.02064	114.02064	114.02052	114.02052	114.02052	114.02052	114.02064
12/4/2014	4	112.279999	113.7107777	113.71084	113.71084	113.71084	113.71072	113.71072	113.71072	113.71072	113.71084
12/5/2014	5	110.870003	112.2809601	112.28102	112.28102	112.28102	112.2809	112.2809	112.2809	112.2809	112.28102
12/8/2014	6	106.800003	110.8711418	110.8712	110.8712	110.8712	110.87108	110.87108	110.87108	110.87108	110.8712
12/9/2014	7	107.010002	106.8012828	106.80134	106.80134	106.80134	106.80123	106.80123	106.80123	106.80123	106.80134
12/10/2014	8	104.860001	107.0114676	107.01152	107.01152	107.01152	107.01141	107.01141	107.01141	107.01141	107.01152
12/11/2014	9	104.910004	104.8616166	104.86167	104.86167	104.86167	104.86156	104.86156	104.86156	104.86156	104.86167
12/12/2014	10	102.379997	104.9118	104.91186	104.91186	104.91186	104.91174	104.91174	104.91174	104.91174	104.91186
12/15/2014	11	100.860001	102.3819249	102.38198	102.38198	102.38198	102.38187	102.38187	102.38187	102.38187	102.38198
12/16/2014	12	101.699997	100.862073	100.86213	100.86213	100.86213	100.86202	100.86202	100.86202	100.86202	100.86213
12/17/2014	13	106.019997	101.7022604	101.70232	101.70232	101.70232	101.70221	101.70221	101.70221	101.70221	101.70232
12/18/2014	14	109.029999	106.022538	106.02259	106.02259	106.02259	106.02248	106.02248	106.02248	106.02248	106.02259
12/19/2014	15	112.93	109.0327988	109.03286	109.03286	109.03286	109.03274	109.03274	109.03274	109.03274	109.03286
12/22/2014	16	112.029999	112.9330933	112.93315	112.93315	112.93315	112.93304	112.93304	112.93304	112.93304	112.93315
12/23/2014	17	113.949997	112.0332594	112.03332	112.03332	112.03332	112.0332	112.0332	112.0332	112.0332	112.03332
12/24/2014	18	113.470001	113.9535084	113.95357	113.95357	113.95357	113.95345	113.95345	113.95345	113.95345	113.95357
12/26/2014	19	113.25	113.4736918	113.47375	113.47375	113.47375	113.47363	113.47363	113.47363	113.47363	113.47375
12/29/2014	20	113.32	113.2538776	113.25394	113.25394	113.25394	113.25382	113.25382	113.25382	113.25382	113.25394
12/30/2014	21	113.110001	113.324074	113.32413	113.32413	113.32413	113.32402	113.32402	113.32402	113.32402	113.32413

Table 8. CVX Stressed Prices of Propose Type 4, 3-Dimensional Jameel's Stressed Models for IFRS 9 Compliance

Date	t	REAL PRICES	NORMAL PRICES	T4 (+,+,+)	T4 (+,+,-)	T4 (+,-,-)	T4 (-,-,-)	T4 (-,-,+)	T4 (-,+,+)	T4 (-,+,-)	T4 (+,-,+)
11/28/2014	**0**	**108.87**									
12/1/2014	1	111.730003	108.8701864	108.8707	108.8707	108.8707	108.86967	108.86967	108.86967	108.86967	108.8707
12/2/2014	2	114.019997	111.7303855	111.73091	111.7309	111.7309	111.72987	111.72987	111.72987	111.72987	111.73091
12/3/2014	3	113.709999	114.0205826	114.02111	114.02111	114.02111	114.02006	114.02006	114.02006	114.02006	114.02111
12/4/2014	4	112.279999	113.7107777	113.7113	113.7113	113.7113	113.71025	113.71025	113.71025	113.71025	113.7113
12/5/2014	5	110.870003	112.2809601	112.28148	112.28148	112.28148	112.28044	112.28044	112.28044	112.28044	112.28148
12/8/2014	6	106.800003	110.8711418	110.87166	110.87166	110.87166	110.87062	110.87062	110.87062	110.87062	110.87166
12/9/2014	7	107.010002	106.8012828	106.80179	106.80179	106.80179	106.80078	106.80078	106.80078	106.80078	106.80179
12/10/2014	8	104.860001	107.0114676	107.01197	107.01197	107.01197	107.01096	107.01096	107.01096	107.01096	107.01197
12/11/2014	9	104.910004	104.8616166	104.86212	104.86212	104.86212	104.86112	104.86112	104.86112	104.86112	104.86212
12/12/2014	10	102.379997	104.9118	104.9123	104.9123	104.9123	104.9113	104.9113	104.9113	104.9113	104.9123
12/15/2014	11	100.860001	102.3819249	102.38242	102.38242	102.38242	102.38143	102.38143	102.38143	102.38143	102.38242
12/16/2014	12	101.699997	100.862073	100.86256	100.86256	100.86256	100.86158	100.86158	100.86158	100.86158	100.86256
12/17/2014	13	106.019997	101.7022604	101.70275	101.70275	101.70275	101.70177	101.70177	101.70177	101.70177	101.70275
12/18/2014	14	109.029999	106.022538	106.02304	106.02304	106.02304	106.02203	106.02203	106.02203	106.02203	106.02304
12/19/2014	15	112.93	109.0327988	109.03331	109.03331	109.03331	109.03229	109.03229	109.03229	109.03229	109.03331
12/22/2014	16	112.029999	112.9330933	112.93362	112.93362	112.93362	112.93257	112.93257	112.93257	112.93257	112.93362
12/23/2014	17	113.949997	112.0332594	112.03378	112.03378	112.03378	112.03274	112.03274	112.03274	112.03274	112.03378
12/24/2014	18	113.470001	113.9535084	113.95403	113.95403	113.95403	113.95298	113.95298	113.95298	113.95298	113.95403
12/26/2014	19	113.25	113.4736918	113.47422	113.47422	113.47422	113.47317	113.47317	113.47317	113.47317	113.47422
12/29/2014	20	113.32	113.2538776	113.2544	113.2544	113.2544	113.25335	113.25335	113.25335	113.25335	113.2544
12/30/2014	21	113.110001	113.324074	113.3246	113.3246	113.3246	113.32355	113.32355	113.32355	113.32355	113.3246

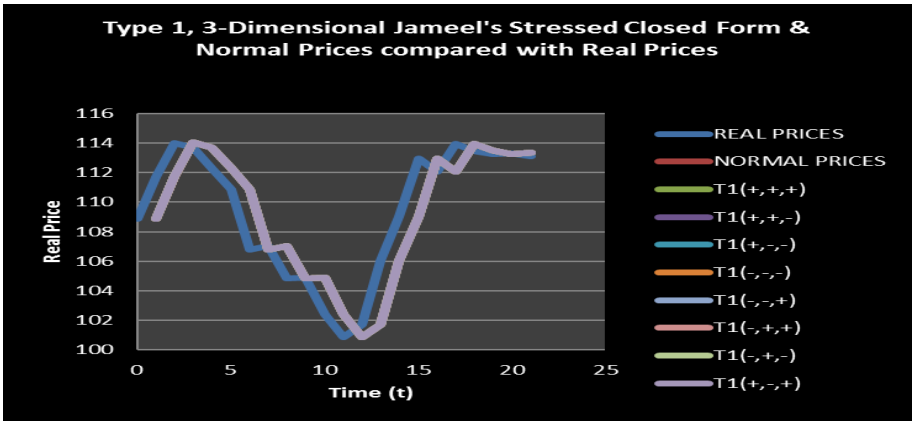

Figure 7.

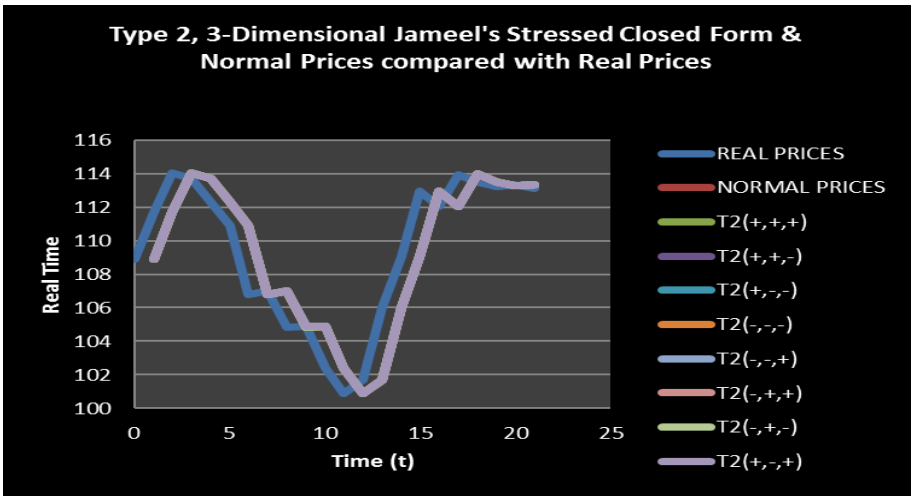

Figure 8.

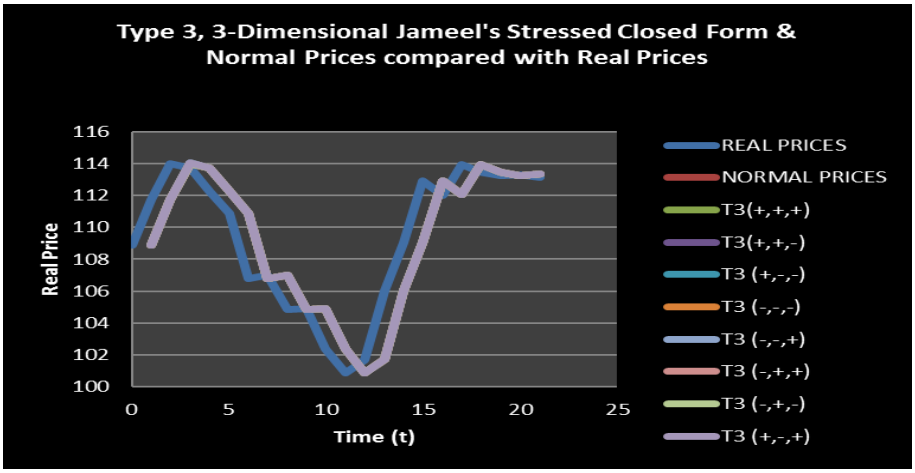

Figure 9.

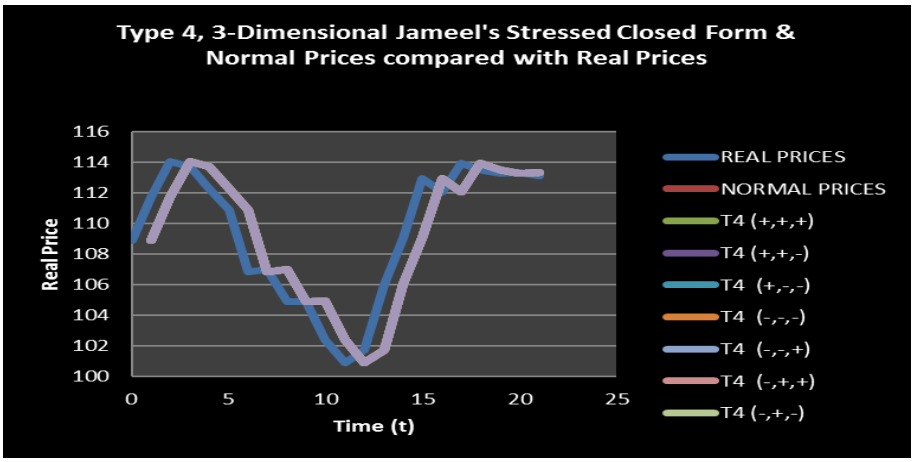

Figure 10.

It can be observed all the ***Shaded Areas in Table 1 to 8*** approximated or almost coincided with the Chevron Corporation **REAL PRICES**. While ***figure 3 to 10*** shows the performances of the proposed TWO and THREE-DIMENSIONAL STRESSED CLOSED FORM PRICES vis-à-vis REAL PRICES and NORMAL PRICES.

More so, in the case of TWO-DIMENSIONAL, the four (4) proposed models ALTERNATES between ONLY TWO (2) VALUES at each point in time, similarly, in the case of THREE-DIMENSIONAL, the eight (8) proposed models also ALTERNATES between ONLY TWO (2) VALUES at each point in time.

The results performances were FASCINATINGLY interesting, impressive, viable, reliable, sophisticated and complaint with IFRS 9 since they ***incorporated the forward-looking information:*** (a) $\left\{\left(\mu_A \pm \sigma_A W_{JB1}(t) \pm \sigma_A W_{JB2}(t)\right)\right\}$, μ_A is POSITIVE INFINITESIMAL, $\sigma_A \geq 1$, $W_{JB1}(t)$ is a LOG-LOGISTIC (3P) and $W_{JB2}(t)$ is a CAUCHY satisfying Jameel's Criterion for TWO-MENTIONAL; (b) $\left\{\left(\mu_A \pm \sigma_A W_{JB1}(t) \pm \sigma_A W_{JB2}(t) \pm \sigma_A W_{JB3}(t)\right)\right\}$, μ_A is POSITIVE INFINITESIMAL, $\sigma_A \geq 1$, $W_{JB1}(t)$ is a LOG-LOGISTIC (3P), $W_{JB2}(t)$ is a CAUCHY and $W_{JB3}(t)$ is a BURR (4P) satisfying Jameel's Criterion for THREE-DIMENSIONAL and Geometric average of only positive ***Economic forecasts of the future Macroeconomic scenarios*** $\{(\mu_A)$ ***and*** $(\sigma_A)\}$ thereby minimizing the differences between Market Prices and Model Prices of the Financial

Instruments.

Propose Jameel's Assets Approximation Theorem (JAAT)

Let $\{W_{JB1}(t), W_{JB2}(t), W_{JB3}(t), \dots, W_{JBn}(t) : t \geq 0\}$ be a set of *Non-Normal Fat-tailed Probability Distributions satisfies Jameel's Criterion* with RANKING *1st, 2nd, 3rd,..., nth* respectively. Let σ_A be a Geometric Volatility of only positive Arithmetic Means of the Underlying Asset Return and Returns of the future economic forecasts of macroeconomic parameters and μ_A be a Geometric Means of only positive Arithmetic Means of the Underlying Asset Return and Returns of the future economic forecasts of macroeconomic parameters such that:

$L_1(t) \coloneqq \mu_A \pm \sigma_A W_{JB1}(t) \pm \sigma_A W_{JB2}(t)$

$L_2(t) \coloneqq \mu_A \pm \sigma_A W_{JB1}(t) \pm \sigma_A W_{JB2}(t) \pm \sigma_A W_{JB3}(t)$

$L_3(t) \coloneqq \mu_A \pm \sigma_A W_{JB1}(t) \pm \sigma_A W_{JB2}(t) \pm \sigma_A W_{JB(n-10)}(t)$

$L_4(t) \coloneqq \mu_A \pm \sigma_A W_{JB1}(t) \pm \sigma_A W_{JB2}(t) \pm \sigma_A W_{JB(n-5)}(t) \pm \sigma_A W_{JB(n-4)}(t)$

. .

$L_n(t) \coloneqq \mu_A \pm \sigma_A W_{JB1}(t) \pm \sigma_A W_{JB2}(t) \pm \cdots \pm \sigma_A W_{JBn}(t)$

Then we generated a set of LINEAR COMBINATIONS $\{L_1(t), L_2(t), L_3(t), \dots, L_n(t)\}$ of DIFFERENT DIMENSIONS, then $\exists\, L_i(t), i = 1,2, \dots, n$ such that the general form of JAMEEL'S SUBSTITUTIONS, TYPE 1:

$\left(\boldsymbol{S_{JB}(t)}\right)_{\boldsymbol{Stressed}} = \boldsymbol{p_0}\, \mathbf{exp}\left(\mu \boldsymbol{t} + \boldsymbol{\sigma L_i(t)}\right),\ \boldsymbol{i = 1, 2, \dots, n}$, will countably coincides at many points with the Asset's REAL PRICES or the difference between the MODEL PRICES and REAL PRICES will be very NEGLIGIBLE or even possibly ZERO at many points in time t. Note that one can work out for the other Three (3) TYPES.

4. Discussion

The Author set the Log-Logistic (3P) parameter $\boldsymbol{\xi}$ to be 1 and Burr (4P) parameters $a = 1, k = 1, \gamma = 1, \beta = 1\ and\ \alpha = 2$ thus collapsed to almost Normal. With HIGH VALUES of $\boldsymbol{\xi}$, a, k, γ, β, and α, the proposed TWO and THREE DIMENSIONAL Jameel's Stressed Closed Prices TYPES will effectively approximates the REAL PRICES or the difference between the MODEL PRICES and REAL PRICES will be very NEGLIGIBLE or even possibly ZERO at many points in time t as according to *Proposed Jameel's Assets Approximation Theorem (JAAT).*

More so, if we could be able to Runs the Goodness of Fit Tests using Jameel's Criterion axiom known such as the RANKS of Kolmogorov Smirnov (KS) Test, Anderson-Darling Test, Jarque and Bera (JB) Test, Shapiro Wilk (SW) Test, Cramer-Von Mises Test, Pearson $\left(\chi^2\ Godness\ of\ Fit\right)$ Test, Lilliefors Corrected K-S Test, D'AgostinoSkewness Test, Anscombe-Glynn Kurtosis Test, D'Agostino-Pearson Omnibus are all **UNITY (1)** of the underlying Stock Returns then the proposed TWO and THREE DIMENSIONAL Jameel's Stressed Closed Prices TYPES will coincide at finitely many points with the REAL PRICES.

Also, as according to the study conducted by Jamilu (2015) where he considered Eleven (11) out of Fifty (50) **World's Biggest Public** Companies by **FORBES** as of 2015 Ranking regardless of the platform in which they are listed, Number of the Research Companies, Time Series (Short or Long), Old or Recently listed Companies using the time series from 2014 – 2009 with the aim of finding the Best Fitted Fat – Tailed Stocks Probability Distributions using Jameel's Criterion. Jamilu (2015) using Jameel's Criterion obtained Log-logistic (3P) as the ***First***, Cauchy as ***Second*** and Burr (4P) as the ***Fourth***, however, with ever changing of Information and Communication Technology, Natural Disasters, Terrorism, Political and Economic Risks, Strikes and other latent Risk Factors, one may uses Jameel's Criterion to obtain different Sets of **NON-NORMAL, FAT-TAILED PROBABILITY DISTRIBUTIONS *RANKING*** according to Jameel's Criterion to calculate different stressed closed form prices of different **DIMENSIONS** for IFRS 9 Compliance.

Furthermore, that we could TEST μ_A as **ARITHMETIC** Means of only positive Arithmetic Means of the Underlying Asset Return and Returns of the future economic forecasts of macroeconomic parameters, otherwise should remains **GEOMETRIC MEANS** as defined and used in the paper.

5. Conclusion

The paper uses Jameel's Criterion and Jameel's Contractional-Expansional Stress Methods to REPLACES the WEINER PROCESS $\{W(t)\}_{t\geq 0}$ with JAMEEL'S SUBSTITUTIONS FOR IFRS 9 COMPLIANCE with the

forward-looking information: (a) $\left\{\left(\mu_A \pm \sigma_A W_{JB1}(t) \pm \sigma_A W_{JB2}(t)\right)\right\}$, μ_A is POSITIVE INFINITESIMAL, $\sigma_A \geq 1$, $W_{JB1}(t)$ is a LOG-LOGISTIC (3P) and $W_{JB2}(t)$ is a CAUCHY; (b) $\left\{\left(\mu_A \pm \sigma_A W_{JB1}(t) \pm \sigma_A W_{JB2}(t) \pm \sigma_A W_{JB3}(t)\right)\right\}$, μ_A is POSITIVE INFINITESIMAL, $\sigma_A \geq 1$, $W_{JB1}(t)$ is a LOG-LOGISTIC (3P), $W_{JB2}(t)$ is a CAUCHY and $W_{JB3}(t)$ is a BURR (4P), where $W_{JB1}(t)$, $W_{JB2}(t)$ and $W_{JB3}(t)$ satisfies Jameel's Criterion.

The paper uses Jameels Substitutions: (i) $\left(\mu_A \pm \sigma_A W_{JB1}(t) \pm \sigma_A W_{JB2}(t)\right)$, whenever $\sigma_A > 1$, μ_A is positive infinitesimal; (ii) $\left(\mu_A \pm W_{JB1}(t) \pm W_{JB2}(t)\right)$, whenever $\sigma_A = 1$, μ_A is positive infinitesimal; (iii) $\left(\pm\sigma_A W_{JB1}(t) \pm \sigma_A W_{JB2}(t)\right)$, whenever $\sigma_A > 1$, $\mu_A = 0$; and (iv) $\left(\pm W_{JB1}(t) \pm W_{JB2}(t)\right)$, whenever $\sigma_A = 1$, $\mu_A = 0$ for TWO-DIMENASIONAL proposed stressed closed form solutions and (1) $\left(\mu_A \pm \sigma_A W_{JB1}(t) \pm \sigma_A W_{JB2}(t) \pm \sigma_A W_{JB3}(t)\right)$, whenever $\sigma_A > 1$, μ_A is positive infinitesimal; (2) $\left(\mu_A \pm W_{JB1}(t) \pm W_{JB2}(t) \pm W_{JB3}(t)\right)$, whenever $\sigma_A = 1$, μ_A is positive infinitesimal; (3) $\left(\pm\sigma_A W_{JB1}(t) \pm \sigma_A W_{JB2}(t) \pm \sigma_A W_{JB3}(t)\right)$, whenever $\sigma_A > 1$, $\mu_A = 0$; and (4) $\left(\pm W_{JB1}(t) \pm W_{JB2}(t) \pm W_{JB3}(t)\right)$, whenever $\sigma_A = 1$, $\mu_A = 0$ for THREE-DIMENSIONAL proposed stressed closed form solutions thereby coming up with Eight (8) proposed stressed closed form solutions for IFRS 9 Compliance.

The paper tested the performances of the Eight (8) proposed stressed closed form solutions with the aid of Chevron Corporation (CVX) Stock data extracted from yahoo finance, time series from 2014 – 1991. The results were fascinatingly interesting, impressive, viable and reliable, sophisticated, and complaint with IFRS 9 since they incorporated MORE forward-looking information and Economic forecasts of the future macroeconomic parameters thereby minimizing the differences between market prices and models prices.

Finally, the results performances of the PROPOSED TWO and THREE DIMENSIONAL STRESSED CLOSED FORM SOLUTIONS of Ornstein – Uhlenbeck Process, Cox-Ingersoll-Ross (1985) Model, Vasicek Model, Black-Karasinki (1991) Model, Chen (1994) Model, Kalotay – Williams – Fabozzi (1993) Model, Longstaff - Schwatz (1992) Model, Ho-Lee Model (1986) Model, Hull-White (1990) Model, Black-Derman-Toy (1990) Model, Heston Volatility Model and ETFs and Leveraged ETFs Models can be TESTED using the processes as in the case of TWO and THREE DIMENTIONAL stressed closed form solution of the GEOMETRIC BROWNIAN MOTION presented in this paper. Also, the models would provide excellent results using MONTE-CARLO or GENERAL SIMULATION ANALYSES.

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