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An evaluation of miller and Modigliani dividend policy irrelevance theory in selected firms in the Cameroon telecommunication industry

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Abstract
This study empirically evaluates the claim that dividend policy is irrelevant in selected companies in the Cameroon telecommunications sector. Time series data for sixteen years (2007-2022) was gotten from the financial records of the studied companies (Orange and MTN). The market price of a share was modelled as a linear function of dividend per share, dividend yield, dividend payout ratio and retention ratio. The Auto-regressive Distributed Lag (ARDL) model is applied in the investigation. According to the findings, dividend per share has a positive significant short-and long-run effect on the share price. Dividend yield has a short-and long-run negative and significant impact on share price. The research concludes that dividend policy influences share price. Therefore, the argument made by Modigliani and Miller that dividend policies are irrelevant is false in telecommunication companies in Cameroon. Hence, the study suggests that companies in the telecommunication sector adopt a constant dividend payout ratio policy.

Keywords: M & M irrelevance theory, dividend policy, market value, JEL Classification: C22, G3, G35

1. Introduction

Academics and working managers alike are very interested in the topic of dividend policy. Due to the fact that it is a developing topic and that there are still some issues with which there is disagreement, it is of considerable interest to academics. Practicing managers are interested in this topic because decisions involving dividends are some of the most important ones for the company, and knowing how dividend theories are applied gives them the analytical insights they need to make these decisions expertly. A dividend is the amount corporations pay in return or yield to shareholders for Investment in the Company's equity. Dividend policy is the policy of the Company concerning the quantum of profit to be distributed as dividends. Dividend policy determines the division of earnings between payment to shareholders and retained earnings (Weston & Brigham, 1975) [21]. Decisions on whether the firm should distribute all profits, retain them, or distribute a portion and retain the balance all fall within the scope of the dividend policy of the organization. Like corporate firms' investment and finance policies, a dividend policy should be chosen based on how it will affect the value of the shareholders. The ideal dividend policy, according to the objective function of corporate finance, is one that maximizes the market value of the company's shares. (Pandey, 2015) [18].

Over the years, considerable research has been devoted to corporations' dividend policies worldwide. As a result, theoretical models have been developed, and numerous variables have been tested (Huda & Farah, 2011) [8]. Regarding the effect of dividend decisions and the firm's worth, there are divergent points of view. The two main competing theories discussing the relationship between dividend decisions and firm value are the dividend relevance hypothesis put forth by Lintner (1956) [13], Gordon (1959) [5], and Walter (1963) [20], and the dividend irrelevance theory put forth by Miller and Modigliani (1961) [15]. According to the dividend relevance theory, dividend policy almost always affects the firm's value. The dividend irrelevance argument, in contrast, emphasizes that the dividend policy of a firm

does not affect the share prices of the firm and claims that the Price of a share is determined by earning capacity and investment policy, not by the pattern of income distribution.
In light of the above arguments, numerous research studies have been conducted worldwide to examine the validity of dividend policy relevance and irrelevance in various economic sectors. This study evaluates the M&M dividend policy's irrelevance on particular firms in the Cameroonian telecommunications sector.
The Cameroon telecommunication sector was established to enhance the harmonious development of telecommunications networks and services to ensure the contribution of this sector to national economic development and satisfy the numerous needs of users while maximizing wealth for its shareholders.
Prior research on the Cameroon telecommunications sector had centred on the sector's contributions to economic growth. (Kinga, 2020) [12] (Katz & Jung, 2020) [11]. As far as we know, an investigation has yet to be led to determine the factors affecting the market value of firms in this sector, nor evaluated any dividend theories. The absence of empirical research concerning the relationship between dividend policy and the firm's value necessitated this study. Therefore, the study sets out to empirically consider whether applying the M&M irrelevance theory of dividends policy to selected firms in the Cameroon telecommunication industry can predict the performance of the relationship between dividend policy and the firm's value. In fulfilling the stated objective, the study will use the Auto-regressive Distributed Lag (ARDL) model.
The remainder of this study is structured as follows: A theoretical review of the topical theory will be presented in the second portion. The third section will cover the empirical literature. The methods employed in this study will be described in the fourth section. The final section will discuss conclusions and recommendations.

2. Theoretical review

The theoretical framework for this study is rooted in the M&M dividend policy irrelevance theory.

M & M irrelevance theory

In 1961, Franco Modigliani and Merton Howard Miller propounded the dividend policy irrelevance theory. According to them, under a perfect market situation, a firm's dividend policy is irrelevant, as it does not affect the firm's value (Miller and Modigliani, 1961) [15]. They argue that the value of the firm depends on the firm's earnings that result from its investment policy. Thus, when the firm's investment decision is given, the dividend decision is of no significance in determining the firm's value.
According to the MM irrelevance dividend hypothesis, the effect of raising new capital will exactly negate any growth in shareholder value that arises through dividend payments. For instance, if a business with investment potential distributes its profits to its shareholders, it needs to raise money from other sources. As a result, more shares will be issued, which will cause share prices to decline. Because of this, any additional dividend income received by shareholders will be offset and neutralized by the lowering share price and predicted earnings per share.
M&M proved this by stating that the Market price of a share at the beginning (P0) is equal to the present value of dividends (D1) received at the end plus the market price of the share at the end (P1). Mathematically represented as:
Market price of the share at the beginning of the period (P0)

$$P_0 = \frac{D_1 + P_1}{1 + K_e}$$

Market price of the share at the end of the period (P1)

$$P_1 = P_0(1 + K_e) - D_1$$

Where:
P0-market price per share at the beginning of the period
Ke-cost of capital
D1-dividend per share
Going by this theory, the investment program of a Company in a given period of time can be financed, either by retained earnings or by new shares or both. Therefore:
Market value of the firm (V)

$$V = (n + m) \times P_1$$

Where:
N-number of shares outstanding at the beginning of the period
M-number of shares to be issued at the end of the period

$$m = I - \frac{(E - nD_1)}{P_1}$$

I-investment required
E-expected earnings

The theory offers a framework for understanding the relationship between a company's dividend policy and overall value or stock price. By knowing this relationship, companies may make educated decisions regarding their dividend policy and how it affects their capacity to create shareholder value.

3. Empirical literature

Following the theories of Lintner (1956) [13], Gordon (1959) [5], Walter (1963) [20], and Miller and Modigliani (1961) [15], which made the M&M dividend irrelevance theory prominent, several empirical investigations have been conducted to determine the validity of the theory for firms all over the world. While some authors failed to provide evidence to support the validity of the M&M dividend irrelevance hypothesis in some firms, other authors acknowledge that the M&M prediction, that is, "a company's dividend policy does not affect its overall value or stock price, but rather value or stock price is affected by earning capacity and investment policy," does hold for some firms.
De-Angelo and De-Angelo (2006) [3] empirically examined the theory that dividends are irrelevant to value. The authors rejected the model put forward by Miller and Modigliani (1961) [15]. The study showed that the payout policy was essential, and other factors besides investment policy

affected firm value.

Kanwal (2012) [10] demonstrated how adjustments to dividend policies provide statistically meaningful information that can be utilised to predict future stock values. The study investigated the impact of dividends on stock prices of chemical and pharmaceutical companies in the Pakistan Stock Exchange for the period 2001-2010. A panel methodology based on OLS estimation was used to analyse the variables, which comprised Stock Dividend, Earnings Per Share (EPS), Profit After Tax (PAT), Retention Ratio, and Return on Equity (ROE).

Al-Hasan, Asaduzzaman, and Al Karim (2013) [1] used 28 businesses chosen from four (4) industries in Bangladesh to study the impact of dividend policy on market price per share from 2005 to 2009. Descriptive statistics, correlation, and multiple regression approaches were all used in the study's analysis. The independent variables were dividend per share and retained earnings per share, and the dependent variable was market price per share. The outcome demonstrated that dividend policy has a significant impact on market share price.

Data from particular companies listed on the Zimbabwe Stock Exchange (ZSE) were used by Jakarta and Nyamugure (2014) [9] to examine the impact of dividend policy on a company's share price. The dependent variable was the share price, while the independent variables were the dividend policy, earnings per share, turnover, and net profit. The analysis of time series data from 2003 to 2011 using Pearson's Correlation Coefficient and linear regression concluded that the dividend policy did not affect the share price.

Oyinlola and Ajeigbe (2014) [17] used 22 companies listed on the Nigerian Stock Exchange between 2009 and 2013 to study the effect of dividend policy on stock prices of quoted corporations in Nigeria. The effect of dividend per share and retained earnings per share on the share price was calculated using a panel regression model. The findings show that retained earnings and dividends significantly impact the share price. Furthermore, the Granger causality test shows that share price directly results from dividends per share.

Chirima (2015) [2] looked into how dividend payouts affected the stock prices of listed service companies on the Zimbabwean Stock Exchange over a five-year period (2008–2012). The data were evaluated using chi-square and regression models. The results showed a statistically significant link between dividend announcements and share prices.

Emeni and Ogbulu (2015) [4]. Researched the association between dividend policy and company market value in the Nigerian financial services industry. The study used panel data from the financial statements of companies listed on the NSE for ten years, from 2002 to 2011. The data were analysed using the Ordinary Least Square (OLS) statistical technique. The findings demonstrated a negative and negligible link between cash dividends, stock dividends, and investment policies and the market value of businesses. Additionally, it was discovered that profits and market value had a positive and insignificant association (albeit significant at a 10% significance threshold). In general, the outcome supports Miller and Modigliani's theory that dividend policy has no bearing on a company's market value (the dividend irrelevance hypothesis).

Lucky and Uzokwe (2019) [14] examined the Miller and Modigliani hypothesis that dividend policy is irrelevant in Nigeria. Examining the relevance of the irrelevant hypothesis was the main objective of their study. Tobins Q measure of market value was modelled as a function of dividend payout ratio, retention ratio, dividend per share and dividend yield. For ten years (2008-2017), 20 companies' annual reports served as the source for cross-sectional data. According to the study's analysis of findings with fixed and random effects, changes in the independent variables in the regression model can predict 75% of the variance in market value. All independent variables show a positive and substantial link with the market value of the chosen listed firms, according to the beta coefficient of the variables. In contrast to Miller and Modigliani's irrelevance premise, the study finds that dividend policy is pertinent.

The relevance and irrelevance of the dividend policy hypothesis were examined by Orji, Imegi, and Rogers-Banigo (2021) [16] using Panel data from 22 manufacturing enterprises from 2009 to 2018. A model that shows a linear relationship was developed between the dividend payout ratio, retention ratio, dividend yield, dividend per share and the market value. The data analysis technique was multiple regressions using the ordinary least square method. According to the study, market value is positively impacted by dividend per share, while dividend yield, retained earnings, and dividend payout ratio have negative effects. The study rejects the MM irrelevance hypothesis and concludes that dividend policy is relevant based on the facts.

4. Methodology

Because it establishes a causal relationship between the independent and dependent variables, this study uses a quasi-experimental design to determine or test the viability of the Miller and Modigliani dividend policy irrelevance theory in two firms (MTN and Orange) operating in the Cameroonian telecommunications sector. The study maximises the amount of information it can from the available data by combining theoretical thought with actual observation.

This research is based on all Orange and MTN group companies from 2007 to 2022. The 16 years is considered due to the accessibility and availability of data. The study adopted a secondary data acquisition technique to collect data on share price, dividend per share, dividend yield, dividend payout ratio and retained earnings. Data was collected from published consolidated annual financial statements of the firms.

4.1 Model Specification

The study employed time series data analysis to measure the causal impact of dividend policy on the share prices of individual firms. Based on the result from our unit root test for stationary using the Augmented Dickey-Fuller test, this study adopts the Pesaran *et al.* (2001) [19] ARDL model, which is reliable for small samples (Haug, 2002). The general form of the ARDL (p, q) model is as follows:

$$Y_t = \gamma_{0i} + \sum_{i=1}^{p} \delta_i Y_{t-i} + \sum_{i=0}^{q} \beta'_i X_{t-i} + \varepsilon_{it}$$

Where Y_t is a vector, and the variables in X_t are regressors that can be integrated at levels or first difference, δ and β are the estimated parameters, pq is the optimal lag, i range from 1,……k representing the number of variables, ε_{it} is the error term vector and ϒ is the constant.

Based on literature in dividend policy, availability of data, and adopting the variables used by (Orji, Imegi, & Rogers-Banigo, 2021) [16] the specification of the ARDL (p, q) model for our study is as follows:

$$SP_t = \alpha_{01} + \sum_{i=1}^{p} \alpha_{1i} SP_{t-i} + \sum_{i=1}^{q} \alpha_{2i} DPS_{t-i} + \sum_{i=1}^{q} \alpha_{3i} DY_{t-i} + \sum_{i=1}^{q} \alpha_{4i} DPR_{t-i} + \sum_{i=1}^{q} \alpha_{5i} RR_{t-i} + \varepsilon_t$$

After the ARDL bound test, The ARDL (p, q1, q2, q3, q4) specified in case of cointegration:

$$\Delta SP_t = \alpha_{01} + \sum_{i=1}^{p} \alpha_{1i} \Delta SP_{t-i} + \sum_{i=1}^{q1} \alpha_{2i} \Delta DPS_{t-i} + \sum_{i=1}^{q2} \alpha_{3i} \Delta DY_{t-i} + \sum_{i=1}^{q3} \alpha_{4i} \Delta DPR_{t-i} + \sum_{i=1}^{q4} \alpha_{5i} \Delta RR_{t-i} + \lambda ECT_{t-i} + \varepsilon_t$$

The ARDL (p, q1, q2, q3, q4) specified in case of no cointegration:

$$SP_t = \alpha_{01} + \sum_{i=1}^{p} \alpha_{1i} \Delta SP_{t-i} + \sum_{i=1}^{q1} \alpha_{2i} \Delta DPS_{t-i} + \sum_{i=1}^{q2} \alpha_{3i} \Delta DY_{t-i} + \sum_{i=1}^{q3} \alpha_{4i} \Delta DPR_{t-i} + \sum_{i=1}^{q4} \alpha_{5i} \Delta RR_{t-i} + \varepsilon_t$$

Where SP represents Share Price, DPS is Dividend per Share, DY is Dividend Yield, DPR is Dividend Pay-out Ratio, RR is Retention Ratio, λ is the adjustment speed, ECT is the error correction term, Δ is the difference operator, *a*0 is the Constant term, *a*1, *a*2, *a*3, *a*4 is the short-run estimates and ε_t is the Disturbance term.

Drawing from theory, our a-priori expectations are: $\alpha_0 \neq 0$; $\alpha_1 = 0$; $\alpha_2 = 0$; $\alpha_3 = 0$; $\alpha_4 = 0$

4.2 Discussion of Results

4.2.1 Summary Statistics and Correlation

Table 1a is the summary statistics for Orange Group. It indicates that the mean value of share price, dividend per share, dividend payout ratio, dividend yield and retention ratio are, respectively, 10.02, 0.96, 120.10, 10.11 and -24.34. Their deviations from the sample average are 1.76 for share price, 0.44 for dividend per share, 93.58 for dividend payout ratio, 5.65 for dividend yield, and 113.42 for retention ratio. The retention ratio has the lowest value of -278.98, while the dividend payout ratio has the highest value of 381.79. In addition, the statistics reveal that dividend per share, payout ratio and dividend yield are positively skewed, while share price and retention ratio are negatively skewed. Also, share price, dividend per share, dividend yield and retention ratio are platykurtic, while dividend payout ratio is leptokurtic.

The correlation matrix results in Table 1a reveal that the retention ratio is positively connected to share prices. In contrast, dividend per share, payout ratio and dividend yield are negatively correlated with share price, with dividend per share and retention ratio having a weak correlation while dividend payout ratio and dividend yield have a moderate correlation.

Table 1a: Descriptive statistics and correlation matrix for Orange Group

Descriptive Statistics	SP	DPS	DPR	DY	RR
Mean	10.0189	0.9581	120.1046	10.1085	-24.3409
Std.Dev	1.7589	0.4388	93.5768	5.6546	113.4183
Max	12.4693	2.0000	381.7935	22.2029	177.3878
Min	6.2154	0.5000	36.0237	5.2128	-278.9855
skewness	-0.6317	0.9312	1.8817	0.9850	-0.3709
Kurtosis	2.7401	2.7772	5.4608	2.4834	2.9412
Correlation Matrix	**SP**	**DPS**	**DPR**	**DY**	**RR**
SP	1.0000				
DPS	-0.2345	1.0000			
DPR	-0.5184	0.2678	1.0000		
DY	-0.5859	0.9004	0.5090	1.0000	
RR	0.3534	0.1183	-0.4505	-0.1324	1.0000

Source: Computed by authors from Eviews 10

Table 1b is the summary statistics for the MTN group. It indicates that the mean value of share price, dividend per share, dividend payout ratio, dividend yield and retention ratio are 133.85, 389.63, 26.89, 4.65 and 70.07. Their deviations from the sample average are 43.77 for share price, 235.85 for dividend per share, 99.34 for dividend payout ratio, 3.23 for dividend yield, and 223.59 for retention ratio. The dividend payout ratio has the lowest value of -312.5, while the retention ratio has the highest value of 868.21. In addition, the statistics reveal that share price, dividend per share, dividend yield and retention ratio are positively skewed while dividend payout ratio is negatively skewed. Also, share price, dividend per share and dividend yield are platykurtic, while dividend payout and retention ratios are leptokurtic.

The correlation matrix results in Table 1b reveal that dividend per share and dividend payout ratio are positively connected to share prices. In contrast, dividend yield and retention ratio are negatively correlated with share price, with dividend per share dividend per share having a strong correlation while dividend payout ratio, dividend yield and retention ratio have weak correlations.

Table 1b: Descriptive statistics and correlation matrix for MTN group

Descriptive statistics	SP	DPS	DPR	DY	RR
Mean	133.8575	389.625	26.89916	4.652500	70.07337
Std.Dev	43.76510	235.8451	99.33556	3.234010	223.5947
Max	221.4100	830.0000	182.9268	11.26000	868.2096
Min	61.44000	0.000000	-312.5000	0.970000	-178.2609
Skewness	0.581726	0.341944	-2.460941	0.441528	3.007085
Kurtosis	2.892701	2.510015	10.13277	2.173088	11.66856
Correlation Matrix	SP	DPS	DPR	DY	RR
SP	1.0000				
DPS	0.7329	1.0000			
DPR	0.0885	0.1061	1.0000		
DY	-0.0171	0.5159	-0.2098	1.0000	
RR	-0.0847	-0.0472	-0.9716	0.2646	1.0000

Source: Authors' computation from Eviews 10

4.2.2 Stationarity and cointegration test results

The study employed time series data analysis to measure the causal impact of dividend policy on share prices in two firms operating in the Cameroon telecommunication sector. As Gujarati (2004)[6] suggested, it is necessary to ascertain the stationarity of a time series data set before conducting a regression analysis to avoid spurious results and ensure none of the variables are integrated into order 2. Based on this, the study employed a unit root test for stationary using the Augmented Dickey-Fuller test. Based on the conclusion of the unit root tests in Tables 1.2a and 1.2b, the ARDL bound test will ascertain if the model exhibits a long-run association.

Table 2a: Unit root test for orange group

Variable	Level			1 Difference			Decision
	C	C&T	None	C	C&T	None	
SP	0.2339	0.4434	0.3692	0.0833	0.2686	0.0066	I(1)
DPS	0.4578	0.2252	0.0245				I(0)
DY	0.3734	0.1753	0.2969	0.0011	0.0066	0.0000	I(1)
DPR	0.0035	0.0187					I(0)
RR	0.0034	0.0126					I(0)

Note: I (0) is stationary at level and I (1) is stationary at first difference.
Source: Authors' computation from Eviews 10

Table 2b: Unit Root Test for MTN Group

Variable	Level			1 Difference			Decision
	C	C&T	None	C	C&T	None	
SP	0.3053	0.5529	0.5264	0.0129	0.0556	0.0006	I(1)
DPS	0.3606	0.6079	0.4508	0.0109	0.0293	0.0005	I(1)
DY	0.4213	0.8840	0.3368	0.0085	0.0106	0.0004	I(1)
DPR	0.0005	0.0036	0.0001				I(0)
RR	0.0017	0.0093	0.0002				I(0)

Note: I (0) is stationary at level and I (1) is stationary at first difference.
Source: Authors' computation from Eviews 10.

The hypothesis for the bounds test is as follows:

$$H_0: b_{1i} = b_{2i} = b_{3i} = b_{4i} = 0$$
$$H_1: b_{1i} \neq b_{2i} \neq b_{3i} \neq b_{4i} \neq 0$$

The results from our bounds test indicated in Table 3a reveal that the calculated F-statistics (7.545528) exceeds all critical values of the upper bound I(1). Thus, share price, dividend per share, dividend yield, dividend payout ratio, and retention ratio have a long-run relationship. Therefore, we conclude that there is cointegration. That is, there is a long-run relationship between the study variables for the orange group. Based on this, we reject the null hypothesis that there is no cointegration and accept the alternative hypothesis that there is cointegration. This implies that we have to estimate the ARDL model, which will capture the short run, and ECM, which captures the long run.

Table 3a: The bound test for cointegration for Orange S.A

CV	I (0)	I (1)
1%	3.74	5.06
2.5%	3.25	4.49
5%	2.86	4.01
10%	2.45	3.52
	F = 7.545528	t = -3.925604

Note: I (0) is the lower bound and I (1) is the upper bound.
Source: Computed by authors from Eviews 10.

The results from our bounds test indicated in table 3b reveal that the calculated F-statistics (2.156544) is below all critical values of the lower bound I (0). Thus, share price, dividend per share, dividend yield, dividend payout ratio, and retention ratio have no long-run relationship. Therefore, we conclude that there is no cointegration. That is, there is no long-run relationship between the study variables of the MTN group. Based on this, we accept the null hypothesis that there is no cointegration and reject the alternative hypothesis that there is cointegration. This implies that we have to estimate only the ARDL model, which will capture the short run.

Table 3b: The bound test for cointegration for MTN Group

CV	I (0)	I (1)
1%	3.75	5.06
2.5%	3.25	4.49
5%	2.86	4.01
10%	2.45	3.52
	F = 2.156544	t = -2.109519

Note: I (0) is the lower bound and I (1) is the upper bound.
Source: Authors from Eviews 10.

4.2.3 The ARDL estimates

The analysis in Table 4a reveals the short- and long-run estimates of the studied variables for the Orange group. It reveals that the past realization of share prices increases the

current share price by 0.157 units but is insignificant in determining the current share price ceteris paribus. The results further indicate that in both the short and long run, dividends per share positively and significantly impact share price by 4.74 units and 5.62 units, respectively, at a 5% significant level. Also, in both the short and long run, dividend yield negatively and significantly impacts share price by -0.53 units and -0.62 units, respectively, at a 1% significant level. This proves that these coefficients are statistically relevant to predict changes in share price and, therefore, inconsistent with our a priori expectations. The findings align with those of Lucky and Uzokwe (2019) [14], who indicate that dividend per share and dividend yield significantly impact the market value of a share and conclude that dividend policy is relevant as opposed to the irrelevant hypothesis of Miller and Modigliani. The conclusion also aligns with past empirical investigations (DeAngelo and DeAngelo (2006) [3]; Kanwal (2012) [10]; Al-Hasan *et al*. (2013) [1]; Orji, *et al*., (2021) [16]) but contradicts the findings of some studies (Jakata and Nyamugure (2014) [9]; Emeni and Ogbulu (2015) [4]).

The result also shows that the error correction model (ECM) adjustment coefficient has a negative sign, and it is significant at a 1% level, indicating cointegration. The adjustment coefficient of 0.84 indicates that about 84% of the errors in the previous period would be corrected in the current periods at a speed of 84%. The R-square of 0.886 implies that 88.6% of the variation in share price is explained in the model, leaving only less than 12% to the error term. The DW statistics of 1.99 also show evidence of no autocorrelation.

Table 4a: Short run and long run ARDL estimates

Variables	Coefficient	Std. Error
Short-run		
L.SP	0.157336	0.214659
DPS	4.739535**	1.791618
DY	-0.525683***	0.142076
DPR	0.000662	0.003834
L.DPR	-0.004197	0.003365
RR	-0.001159	0.002528
Constant	9.552378***	2.588958
Long run		
DPS	5.624463**	1.871339
DY	-0.623834***	0.170622
DPR	-0.004195	0.006998
RR	-0.001376	0.002842
Aj Coeff.	-0.842664***	0.112016
Observations	15	
R-squared	0.885652	
Adj. R-squared	0.799891	
DW statistics	1.999959	

Notes: ***, ** respectively indicate 1% & 5% significance
Source: Authors from Eviews 10.

The analysis in Table 4b reveals the short-run estimates of the studied variables in the MTN Group. It reveals that the past realization of share price increases the current share price by 0.106 units but is insignificant in determining the current share price ceteris paribus. The results further indicate that in the short-run, dividend per share positively and significantly impact share price by 0.19 unit at a 5% significant level and dividend yield negatively and significantly impact share price by -11.17 units at a 5% significant level. This proves that these coefficients are statistically relevant to predict changes in share price and, therefore, inconsistent with our a priori expectations. The results from the MTN group are consistent with those from the Orang group. This reveals that dividend policy significantly influences the market price of shares in telecommunication firms.

The R-square of 0.886 implies that 88.6% of the variation in share price is explained in the model, leaving only less than 12% to the error term. The DW statistics of 1.87 also show evidence of no autocorrelation.

Table 4b: Short run ARDL estimates for MTN Group

Variables	Coefficient	Std. Error
L.SP	0.106149	0.423723
DPS	0.189926**	0.075946
DY	-11.16889**	3.989674
L.DY	5.599727	4.372270
DPR	-0.506876	0.367467
RR	-0.214018	0.169284
Constant	100.0517**	40.35177
Observations	16	
R-squared	0.815642	
Adj. R-squared	0.677374	
DW statistics	1.872203	

Notes: ***, ** respectively indicate 1% & 5% significance
Source: Authors from Eviews 10.

4.2.4 Diagnostics test results

A key ingredient in time series data is ensuring that the series is not serially correlated, there is no heteroscedasticity, no ARCH effect, the model is stable, and the residual term is normally distributed. The diagnostic results in Table 5a and 5b confirmed no serial correlation, heteroscedasticity and ARCH effect. There is also normality in the residuals. The cusum and cusum square graph also stay within the critical limit of 5%, indicating stability in the model.

Table 5a: Result of diagnostic tests for Orange Group

Specification	Null hypothesis(H0)	p-value	Decision
Breusch-Godfrey LM test	No serial correlation	0.5810	Accept H0
Breusch-Pagan-Godfrey test	No heteroskedasticity	0.1754	Accept H0
ARCH test	No ARCH effect	0.5665	Accept H0
Jarque-Bera (JB) test	There is normality in residuals	0.7348	Accept H0
CUSUM test	The model is stable		Accept H0

Source: Authors' computation from Eviews 10.

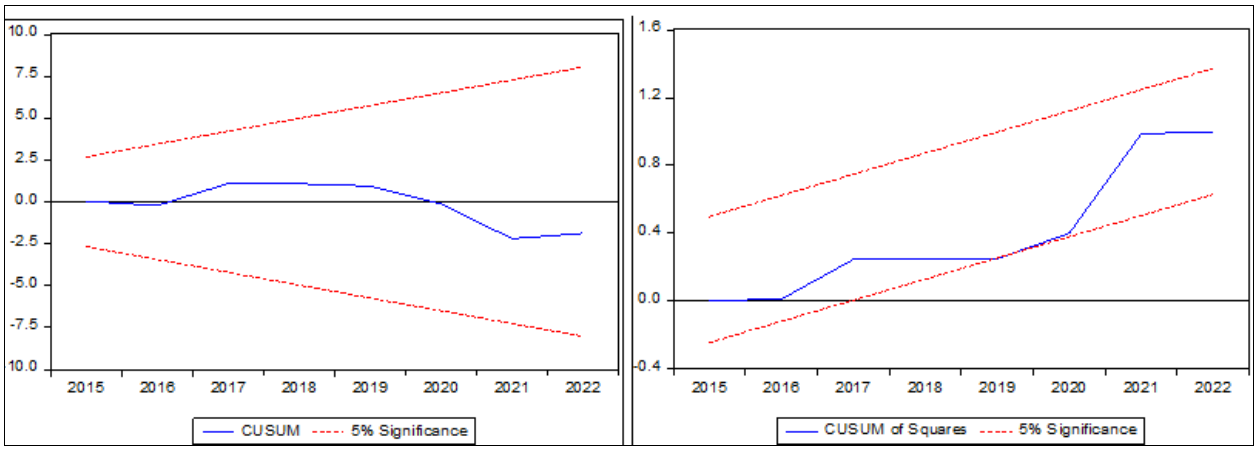

Fig 1: Graphical representation between CUSUM and 5% significance

Table 5b: Result of diagnostic tests for MTN Group

Specification	Null hypothesis(H0)	p-value	Decision
Breusch-Godfrey LM test	No serial correlation	0.6572	Accept H0
Breusch-Pagan-Godfrey test	No heteroskedasticity	0.2295	Accept H0
ARCH test	No ARCH effect	0.9387	Accept H0
Jarque-Bera (JB) test	There is normality in residuals	0.6884	Accept H0
CUSUM test	The model is stable		Accept H0

Source: Authors' computation from Eviews 10.

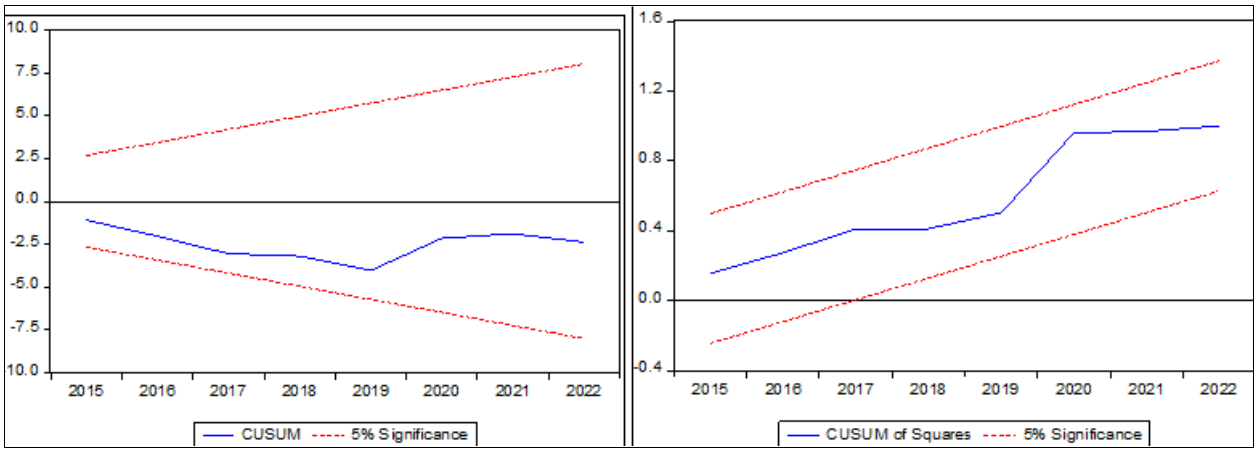

Fig 2: Graphical representation between CUSUM and 5% significance

5. Conclusion and Recommendation

The objective of this study was to evaluate the Miller and Modigliani dividend policy irrelevance theory in two firms operating in the Cameroon telecommunication sector to ascertain the validity of the theory in the determination of share prices or the firm's value. The study employed time series data from 2007 to 2022 for the Orange and MTN groups. The Augmented Dickey-Fuller unit root test was used to determine the variables' stationarity and level of integration. The study uses the ARDL bounds test and ECM

to obtain the short-run and long-run estimates. From the bounds test, the Orange group has both a long-run and short-run relationship among studied variables, while the MTN group exhibits only a short-run relationship. The findings from the analysis indicate that dividend per share and dividend yield significantly affect the share price in the two firms under study and have a long-run significant effect in the orange group. This implies that dividend policy is relevant in the determination of share price. Based on these findings, it is safe to conclude that the M&M dividend policy irrelevance theory is invalid in the Cameroon telecommunications industry.

Based on this conclusion, the study recommends that firms in the telecom industry should adopt the Constand dividend payout ratio policy for better share prices and firm value.

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