Effect of Financial Performance on Dividend Payout Rate of Electricity Savings and Credit Co-operative

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Abstract

The study aims at investigating the profitability factors which determine the dividend payout among the electricity savings and credit cooperative for the period between 2010 to 2019. To achieve this objective, the multiple regression analysis was used to test the hypotheses. The profitability ratios used in the study consisted of return on assets, return on equity, net profit margin, and asset growth rate, while the dependent variable is the dividend payout rate. The study found that the return on equity had the highest positive impact on the dividend followed by the return on assets with a negative statistically significant relationship.

Keywords: Profitability, dividend, electricity savings and credit co-operativ

1. Introduction

Savings cooperatives are a form of financial institution. It arises from people in the same occupation group together for economic and social benefits. The purpose of a savings cooperative is to promote savings among members and provide loan funds for productive investment (Collins & Clark, 2003). The operating characteristics of savings cooperatives play the same role as commercial banks. Compared with commercial banks, saving cooperatives tend to pay the highest deposit interest rates and loans with low-interest rates (Angelini et al., 1998). Therefore, savings cooperative members receive a return in the form of dividends based on paid-up shares and cash-back dividends to the members based on average loan volume during the calendar year. Moreover, dividends and cash-back dividends received will be exempt from personal income tax under the royal decree issued under Revenue Code No. 40.

The impact of cooperatives on the Thai economy is both extensive and impressive. The past statistics found that the business volume of savings cooperatives has continued to grow. In 2019, savings cooperatives had a business volume of 1,896,605.01 million baht or 82.84% compared to the overall volume of the 7 types of cooperatives and there was an increase in business volume growth up 37.33% compared to 2010 (Cooperative Promotion Department, 2019). Looking at the growing volume of savings cooperatives' deposits that expanded in 2019, total deposits amounted to 66,518 million baht, and deposits increased to 95,776 million baht in 2020, representing 43.99% (Bank of Thailand, 2020). According to data from the Cooperative Auditing Department, in 2019, there were 1,375 savings cooperatives, 619 cooperatives in extra-large cooperatives, or 10.24% of all types of cooperatives. The Electricity Generating Cooperatives Group consists of 1) the Metropolitan Electricity Authority of Thailand Employees' Union Savings Cooperative, 2) the Provincial Electricity Authority Employees Savings Cooperative Limited, and 3) the Electricity Generating Authority of Thailand's Savings Cooperative, which is 3 of the 8 savings cooperatives extra-large. There are approximately 80,000 members. Electricity Savings Cooperative Group is a financial institution of employees. Its main objective is to promote savings and provide loan services to members. Therefore, savings cooperative members enjoy high a return (dividend) on savings as possible. As a result, the electricity savings cooperative continuously increased its share capital every year. However, some electricity savings cooperatives have lending policies that are inconsistent with their members' incomes causing loan defaults and increased operating costs. These may affect profitability and dividend payments to the members.

According to Sripanom (2016), members' savings incentives are higher rates on cooperative deposits than commercial banks. The similar results presented in the study of Boonradsamee, Thongyai, Pengsuwan, Eakuru, and Rattanama (2016) suggested that the dividend yield is an incentive for a member and dividend policy is influenced by the performance of the cooperatives. The behavior of dividend policy is one most debatable issues in the corporate finance literature and keeps its prominent place both in developed and emerging markets (Ahmed & Javid, 2009). According to Pal and

Goyal (2007) net profit, represent the capacity of a firm to pay dividends. Thus, an optimal balance between the interest on loans and interest on members' savings (dividend) and a diversified portfolio to increase the profit levels would make the savings cooperative grow productively.

In Thailand, savings cooperatives are facing many obstacles which include poor financial performance, corruption, and a high level of share capital. Despite the importance and contribution of savings cooperatives in Thailand rendering good services by providing access to financial services among the member, they have encountered a myriad of challenges from the expectations of cooperative members towards the return in the form of dividends. To respond to the continuous growth of the savings cooperative business sector and expectations of cooperative members. Knowing the factors profitable and affecting the dividend rate of the cooperative is extremely significant because the saving cooperative is an important player in the social-economic development in Thailand. Therefore, no previous study analyses factors influencing the dividend payout of savings cooperatives in Thailand. Hence, this study aimed to fill this knowledge gap by analyzing factors that influence the dividend payout of savings cooperatives with special emphasis Electricity Savings Cooperative group. The remainder of this study is organized as follows. The next section discusses the literature review. Section 3 describes the data and a specific model. Section 4 discusses the findings of the primary analysis. Section 5 provides a summary of the findings and policy implications.

2. Literature Review

2.1 Theoretical Framework

In business, different dividend policies can change stock prices. Gordon (1959) and Lintner (1962) proposed the theory that high dividends increase stock value theory because the dividend payout increases the value of the business. Investors are more willing to receive the current dividend rather than the capital gain. This is because the dividend yield is less risky than the rate of return that would be gained from expecting a future increase in securities prices. However, it is argued that beyond the work of Miller and Modigliani (1961) who said that dividend policy is irrelevant to investors. In this theory, there is no effect of dividends on the stock price. As investors believe that the value of the business depends on the company's profitability then dividend policy does not affect the value of the securities. The major assumption in dividend irrelevance theory is that there are no taxes and bankruptcy costs. In the tax preference theory (Brennan, 1970; Litzenberger & Ramaswamy, 1979), the theory suggests that dividends are relevant in their study. The low dividend payment will decrease the expected return on equity and increase share prices. Shareholders prefer dividends with low yields because dividends are a higher tax rate than capital gain. An investor has the company instead invest most of the profits to raise the price of the securities. The proportion of dividend payment to shareholders depends on the ability of the company to generate profits and dividend policy. Thus, an increase in profitability of a company will lead to an increase of the dividend payments. (Fauzi & Rukmini, 2018; Ika & Helena, 2019; Sari & Handoyo, 2013).

A good performance in savings cooperatives can be indicated by the efficiency and effectiveness of their resource utilization(Kiama, 2014; Torres-Inga et al., 2022). Moreover, the evaluation of financial performance of cooperatives can be measured through financial rations such as the rate of return on assets (ROA), the rate of return on equity (ROE), operating profit margin (OPM), net margin (NPM), and liquidity (Mmari & Thinyane, 2019; Odhiambo, 2018; Yitayaw, 2021).

2.2 Empirical Review

The cooperative studies have lagged behind other financial institutions by performing below the stock market which in turn causes ignorance among the cooperative societies. According to savings cooperative literature, the previous studies may include member satisfaction, quality of service, loan disbursements, growth, and liquidity (Junlaphet et al., 2021; Ketin & Sincharoonsak, 2021; Mmari & Thinyane, 2019; Pornpradub & Bosakoranut, 2021).

A few studies have been conducted on the dividend payout of cooperatives. In Malaysia for example, a study by Noordin et al. (2012) revealed that there is a significant relationship between dividends paid out with return on asset (ROA), return on equity (ROE), net profit margin (NPM), size, function, and number of members. Furthermore, the study finds a positive relationship between NPM and with payment of dividends. However, other variables show a negative relationship with the payment of dividends. The findings are steady with Fauzi and Rukmini (2018) study. In the case of Kenya, the study revealed that dividend payout had a strong positive and significant relationship with the financial performance (ROA) of saving and credit cooperatives (Gacheru & Muturi, 2016; Shibutse et al., 2019). These studies use Pearson correlation analysis, and the result are inconsistent with each other.

The growth variable also relevant to financial performance analysis. Hesse and Čihák (2007) found that co-operative financial institutions have a lesser tendency to invest in high-risk financial markets. Brown and Davis (2009) shows that target profit rate affects the asset growth with positive relationship for Australian credit unions. The study of Sathyamoorthi et al. (2016) also revealed a relationship between growth in income and the financial status of the cooperative societies. According to Wahjudi (2020), growth in net assets has a significant effect on dividend policy.

3. Data and Methodology

3.1 Data and Methodology

This study aims at investigating the factors which determine the dividend payout rate (DPR) among the electricity savings cooperative group. Factors such as the return on equity (ROE), return on assets (ROA), net profit margin (NPM), and total asset growth rate (GA) were considered. The data employed in this study are annually of electricity savings cooperative group during the period 2010-2019. Historical data are obtained from the cooperative auditing department ministry of agriculture and cooperatives database. The study analyzes three electricity savings cooperatives comprising Metropolitan Electricity Authority of Thailand Employees' Union Savings Cooperative (MEA), Provincial Electricity Authority Employees Savings Cooperative Limited (PEA), and Electricity Generating Authority of Thailand's Savings Cooperative (EGAT). A member of previous other studies finds significant factors influencing cooperatives' dividend payout ratio by using Pearson Chi-Square and Pearson Correlation Analysis. This study used multivariate regression in the analysis to determine the factors that lead to dividend payout rate. Then from the defined variables the multivariate regression model was identified as follow:

$$DPR_i = \alpha_i + \beta_1 ROA_i + \beta_2 ROE_i + \beta_3 NPM_i + \beta_4 GA_i + \varepsilon_i$$

where DPR_i is dividend rate (percent) of the cooperative i, ROA_i is the return on average total assets of the cooperative i, ROE_i is the return on average equity of cooperative i, NPM_i is net profit margin on average of cooperative i, GA_i: is growth asset on average of cooperative i, α_i: is intercept of the regression line, $\varepsilon_{i,t}$ is residual of the regression model, and β is variable coefficient of the four independent variables. From theories and literature review there is research hypotheses proposed as following:

H_1: At least one of the profitability factors influences dividend payout rate positively

The robustness of the model was tested and determined by P-value for the F-statistic at 5% confidence level. A p-value of less than 5% portrayed a statistically significant relationship between the study variables. The results of the tests are presented in the following section.

4. Results

Below the Table 1 shows the descriptive statistics of between firms relating to each variable on average in the research model.

Table 1. The Statistical Description of Thai Electricity Savings Cooperatives

	MEA						PEA				
	DPR	**ROA**	**ROE**	**NPM**	**GA**		**DPR**	**ROA**	**ROE**	**NPM**	**GA**
Mean	4.934	2.169	5.986	39.916	5.080	Mean	6.235	3.892	7.884	67.670	15.771
Max	5.150	2.414	7.279	45.758	14.670	Max	6.500	4.520	9.188	69.293	55.564
Min	4.300	1.836	4.579	33.586	-1.134	Min	6.000	3.140	6.831	63.575	-5.638
	EGAT						**Electricity Cooperatives Group**				
	DPR	**ROA**	**ROE**	**NPM**	**GA**		**DPR**	**ROA**	**ROE**	**NPM**	**GA**
Mean	6.400	3.279	6.541	63.825	11.040	Mean	5.856	3.113	6.804	57.137	10.630
Max	8.200	3.940	8.363	66.674	14.998	Max	6.433	3.408	7.337	59.679	27.665
Min	5.500	2.883	5.774	59.857	6.349	Min	5.600	2.934	6.371	55.277	4.186

Table 1 shows that the Electricity Cooperatives Group dividend payment rate was an average of 5.85% and the highest and the lowest were 6.43% and 5.60%, respectively. Electricity Generating Authority of Thailand's Savings Cooperative (EGAT) has the highest average dividend payout rate at 6.40%, followed by the Provincial Electricity Authority Employees Savings Cooperative Limited (PEA) at 6.23% and the Metropolitan Electricity Authority State Enterprise Workers Union Savings Cooperative Limited (MEA) at 4.93%.

In terms of the Return on Assets (ROA) and Return on Equity (ROE) of the Electricity Cooperatives Group, the average was 3.11% and 6.80%, respectively. The Provincial Electricity Authority Employees Savings Cooperative Limited (PEA) had the highest average return on assets (ROA) at 3.89% and an average return on equity (ROE) at 7.88%, followed by the Electricity Generating Authority of Thailand Limited (EGAT) with 3.27% and 6.54%, respectively.

In terms of the net profit margin (NPM) and asset growth rate (GA), it finds that the electricity cooperative group has an average net profit margin (NPM) and asset growth rate (GA) of 57.13% and 10.36%, respectively. Therefore, the Provincial Electricity Authority Employees Savings Cooperative Limited (PEA) has the highest average net profit margin (NPM) at 67.67% and asset growth rate (GA) at 15.77%, followed by Electricity Generating Authority of Thailand Limited (EGAT) with net profit margin (NPM) and asset growth rate (GA) on average at 63.82% and 11.04, respectively.

For the Savings Cooperatives Union of Metropolitan Electricity Authority (MEA), it finds that Return on Assets (ROA) at 2.16%, Return on Cooperative Capital (ROE) at 5.98%, Net Profit Margin (NPM) at 39.91%, and Asset Growth Rate (GA) at 5.08%. There have the lowest on average compared to the Electricity Generating Cooperatives, Electricity Generating Authority of Thailand Limited (EGAT), and Provincial Electricity Authority Employees Savings Cooperative Limited (PEA).

This study uses the lead method by entering regression analysis and autocorrelation tests performed with Durbin-Watson (D) (Durbin & Watson, 1951). The minimum (dL) and maximum (dU) critical regions are used and applied at the statistical significance level of 0.05 under the alternative hypothesis $p > 0$, meaning that there is a positive correlation between the error values. The results can be summarized as follows: 1) D values > dU mean there is no positive correlation between the tolerances 2) D < dL means there is a positive correlation between the tolerances 3) if dL < D < dU means that the error term cannot be determined positively. In the case of a negative correlation test or under the alternative assumption, $p < 0$, there is a negative correlation between the error values. The results can be summarized as follows: if 4 – D is less than dL, it concluded that the error is negatively correlated. The results of the regression test, as displayed in Table 2 -5.

Table 2: Regression Test Results of the Savings Cooperatives Union of Metropolitan Electricity Authority (MEA)
Dependent Variable: DPR

Variable	Coefficient	Std. Error	t-Statistic	Prob.
ROA	-0.708507	0.286726	-2.471027	0.0565*
ROE	-0.024752	0.103540	-0.239056	0.8206
NPM	0.130542	0.032522	4.013986	0.0102*
GA	-0.034431	0.010041	-3.429112	0.0187*
C	1.582880	0.688808	2.297998	0.0699
R-squared	0.902918	F-statistic		11.62571
Adjusted R-squared	0.825252	Prob(F-statistic)		0.009565
		Durbin-Watson stat		2.434188

* Indicates statistical significance at the 5% level

The regression analysis results of the Metropolitan Electricity Authority Savings Cooperatives (MEA) from Table 2 show the R-squared (0.902918), Prob(F-statistic) value of 0.001993. The Durbin-Watson value was 2.434188, and the 4-D value was 1.5651, which a higher than dL (0.376). It indicates that the independent variables could explain 90.29% of the dependent variables, and the model did not find any correlation between the error values (Autocorrelation). The analysis results accept the alternative hypothesis that at least one profitability factor positively influenced the dividend payout rate of the Metropolitan Electricity Authority Savings Cooperatives Union (MEA). The influence of net profit margin (NPM) on the direction of the dividend payment is positive. Therefore, the return on assets (ROA) and asset growth rate (GA) have a significant negative correlation to cooperatives' dividend payout rates. The next regression analysis of the Electricity Generating Authority of Thailand's Savings Cooperative (EGAT) as presented in Table 3.

Table 3: Regression Test Results of the Electricity Generating Authority of Thailand's Savings Cooperative (EGAT)
Dependent Variable: DPR

Variable	Coefficient	Std. Error	t-Statistic	Prob.
ROA	-1.368126	0.838991	-1.630679	0.1639
ROE	1.261392	0.190909	6.607292	0.0012*
NPM	0.120753	0.076258	1.583482	0.1742
GA	-0.023181	0.026026	-0.890702	0.4139
C	-4.815802	3.411228	-1.411750	0.2171
R-squared	0.983229	F-statistic		73.28520
Adjusted R-squared	0.969813	Prob(F-statistic)		0.000126
		Durbin-Watson stat		2.911498

* Indicates statistical significance at the 5% level

The multiple least squares regression results of the Electricity Generating Savings Co-operative of Thailand Limited (EGAT) presented in Table 3 indicate that the return on assets (ROA) and total asset growth rate (GA) have a negative relationship with the dividend payout rate. In addition, accounting profitability, as measured by return on equity (ROE), is positive and statistically significant related to the dividend payout rate. As can be observed from Table3, the null hypothesis was rejected at the 5% level. In general, the value of R-squared is 98%, and the Probability of the F-statistic is 0.000126. The value of Durbin-Watson is 2.911498, and the 4-D is 1.088, which is greater than the dL (0.376), which indicates the model does not have a problem with autocorrelation.

The results of a regression test show that the return on equity (ROE) affects the dividend payout rate positively and significantly. Moreover, the results show that return on assets (ROA), net profit margin (NPM), and total asset growth rate (GA) have a negative relationship with the dividend payout rate. From the results, the alternative hypothesis accepted as return on equity correlates positively with the dividend payout rate of the Provincial Electricity Authority Employees Savings Cooperative Limited (PEA). According to the R-squared (0.909361), it means there is an ability of the profitability factors to clarify the dependent variable. The Durbin-Watson had a value between dL (0.376) and dU (2.414). However, the model presented the problem of autocorrelation. Next, the Breusch-Godfrey Serial Correlation LM test had conducted, and the results show no serial correlation in the residuals of the mean equation. The next regression analysis of the Electricity Savings Cooperative Group as displayed in Table 5.

Table 4: Regression Test Results of the Provincial Electricity Authority Employees Savings Cooperative Limited (PEA)
Dependent Variable: DPR

Variable	Coefficient	Std. Error	t-Statistic	Prob.
ROA	-0.101862	0.169653	-0.600413	0.5744
ROE	0.276789	0.077083	3.590775	0.0157*
NPM	-0.001715	0.019942	-0.085991	0.9348
GA	-0.000786	0.001438	-0.546489	0.6082
C	4.577732	1.147182	3.990415	0.0104
R-squared	0.909361	F-statistic		12.54091
Adjusted R-squared	0.836849	Prob(F-statistic)		0.008096
		Durbin-Watson stat		1.839020

* Indicates statistical significance at the 5% level

Table 5: Regression Test Results of the Electricity Savings Cooperative Group
Dependent Variable: DPR

Variable	Coefficient	Std. Error	t-Statistic	Prob.
ROA	-1.645285	0.598801	-2.747631	0.0404*
ROE	1.552462	0.356942	4.349341	0.0074*
NPM	-0.255047	0.111765	-2.282004	0.0714
GA	0.005081	0.008140	0.624212	0.5599
C	14.93492	3.714859	4.020321	0.0101
R-squared	0.857604	F-statistic		7.528345
Adjusted R-squared	0.743687	Prob(F-statistic)		0.024056
		Durbin-Watson stat		3.031682

* Indicates statistical significance at the 5% level

Table 5 reports the regression analysis of dividend payout rate (DPR) on profitability factors for the Electricity Savings Cooperative Group. It shows that the coefficient value of the return on equity (ROE) is positive as predicted and statistically significant at the 5% level. The total asset growth rate (GA) is positively related to DPR as expected while the coefficient is not statistically significant. Thus, the hypothesis is supported. The return on assets (ROA) is negatively related to the DPR with statistically significant. The coefficient on the net profit margin (NPM) is negative without statistically significant. The F-test (0.024056) shows that all profitability factors relationships influence the DPR. The value of R-squared is 85% which means there is great ability of the independent variable to clarify the dependent variable. The value of Durbin-Watson is 3.031682, with the 4-D value being 0.9683, which is greater than the d_L value (0.376). It means the model is without autocorrelation. The following section provides a discussion of the results and conclusion.

5. Conclusion and Discussion

The objective of this study is to provide empirical evidence on the profitability of the electricity savings cooperative and the degree of the relationship with the dividend payout

rate (DPR). A case study of the Electricity Savings Cooperative Group consists of The Metropolitan Electricity Authority (MEA) Savings Cooperative, the Electricity Generating Authority of Thailand Limited (EGAT), and the Provincial Electricity Authority Employees Savings Cooperative Limited (PEA) with annual data collection from 2010 to 2019 with multiple regression analysis methods, with a total of 4 independent variables: Return on Assets (ROA), Return on Equity (ROE), Net Profit Margin (NPM), and Asset growth rate (GA), the dependent variable is the dividend payout rate by analyzing the relationship between independent variables and dependent variables at a level of statistical significance of 0.05.

The average ROA, ROE, and NPM for the Thai Electricity Savings Cooperatives group typically had positive returns. Throughout the study period, the average mean of ROA, ROE, and NPM for PEA Savings Cooperative was higher than other Electricity Savings Cooperatives. However, the results indicated that the EGAT had the highest mean of the DPR. Therefore, the electricity savings cooperative with a high asset growth rate (GA) could not generate a high dividend. It implied that it is not only the profitability factor that affects the dividend payout rate of cooperatives. It might be arisen due to several reasons, for example, membership size, level of capital, state of the economy, and regulations accomplished by the government.

The finding of the Electricity Savings Cooperatives group shows a significant negative influence of ROA on the dividend payout rate, while the direction shows the positive causation between ROE and dividend payout rate. This indicates that a higher ROA do not necessarily lead to a higher payment of dividend. It is because the majority of assets of the cooperatives are member deposits and loan funds for membership rather than long-term investments and funds. The relationship between ROA and DPR suggested by Noordin et al. (2012) study is consistent with the findings of this study.

However, the positive relationship of ROE with the payment of dividends indicates that cooperatives pay more dividends when their return on equity increases. Paying dividends allows saving cooperatives to share their profits with memberships, which helps to thank memberships for their ongoing support via higher returns and to incentivize them to continue holding the member share capital. The result is consistent with the agency theory, which states that a business with decentralized shareholders wants to get more dividends to reduce the amount of cash under the supervision of the cooperative management. The result indicated by this study about the relationship between ROE and DPR is consistent with the conclusion of Kiama (2014) study.

The results of individual electricity savings cooperatives analysis find that the Electricity Generating Authority of Thailand's Savings Cooperative (EGAT) and the Provincial Electricity Authority Employees Savings Cooperative Limited (PEA) had consistent results. There is a significant positive relationship between ROE and dividend payout rate. On the contrary, the Savings Cooperatives Union of Metropolitan Electricity Authority (MEA) shows a statistically insignificant negative relationship between ROE and dividend payout rate. The reason may due to is the difference in the level of capital member share and membership of cooperative. The Savings Cooperatives Union of Metropolitan Electricity Authority (MEA) has the lowest capital member share of 10.5 billion Thai baht with 11,754 memberships. Meanwhile, the Electricity Generating Authority of Thailand's Savings Cooperative (EGAT) has the highest capital member share value of 61.2 billion Thai baht with 32,759 memberships, followed by the Provincial Electricity Authority Employees Savings Cooperative Limited (PEA) with 22.9 billion Thai baht and 35,953 memberships.

This study has potential limitations. The sample selected for this study is specifically with the electricity savings cooperative. The results obtained in this study may not apply to savings cooperatives outside of this designation. To sum up, the result of the study suggests that the saving cooperative must maintain an account of member share capital and net profit so that the dividends payout rate can meet the membership satisfaction and would serve as a long-term benefit to their members.

References

Ahmed, H., & Javid, A. (2009). Dynamics and determinants of dividend policy in Pakistan: Evidence from karachi stock exchange non-financial listed firms. *Journal of Independent Studies and Research*, *7*(1), 1-30.

Angelini, P., Di Salvo, R., & Ferri, G. (1998). Availability and cost of credit for small businesses: Customer relationships and credit cooperatives. *Journal of Banking & Finance*, *22*(6), 925-954.

Bank of Thailand. (2020). Deposit Rates for Individuals. Retrieved from https://www.bot.or.th/Thai/Statistics/

Brennan, M. J. (1970). Taxes, market valuation and corporate financial policy. *National Tax Journal*, *23*(4), 417-427.

Brown, C., & Davis, K. (2009). Capital management in mutual financial institutions. *Journal of Banking & Finance*, *33*(3), 443-455.

Collins, C. J., & Clark, K. D. (2003). Strategic human resource practices, top management team social networks, and firm performance: The role of human resource practices in creating organizational competitive advantage. *Academy of Management Journal*, *46*, 740-751.

Cooperative Promotion Department. (2019). Information and Communication Technology Center. Retrieved from http://office.cpd.go.th/itc/index.php/79-2017-04-11-04-36-20/690-number-of-cooperatives 31-62

Durbin, J., & Watson, G. S. (1951). Testing for serial correlation in least squares regression. II. *Biometrika*, *38*(1/2), 159-178.

Fauzi, I. D., & Rukmini, R. (2018). The effect of financial performance measured with rentability ratio against dividend payout ratio (Empirical study on manufacturing companies group listed on BEI). *International Journal of Economics, Business and Accounting Research*, *2*(1), 19-33.

Gacheru, J. W., & Muturi, W. (2016). Financial factors affecting performance of deposit taking savings and credit co-operative societies in Kenya: A case of Kiambu county. *International Journal of Social Sciences and Information Technology*, *2*(9), 1163-1179.

Gordon, M. J. (1959). Dividends, earnings, and stock prices. *The Review of Economics and Statistics*, *41*(2), 99-105.

Hesse, H., & Čihák, M. (2007). *Cooperative banks and financial stability*. International Monetary Fund.

Ika, Y., & Helena, D. (2019, 20th-22nd July 2019). The influence of factors affecting dividend payout ratio to stock price of firms listed in Indonesia Stock Exchange. Proceedings of the 2019 International Conference on Organizational Innovation (ICOI 2019), University of Ulsan, South Korea.

Junlaphet, N., Hengpatana, S., & Patmasiriwat, D. (2021). Factors affecting the savings and loans of savings and credit cooperative in Thailand B.E. 2550 – 2561. *Rajabhat Chiang Mai Research Journal*, *22*(3), 36-51.

Ketin, N., & Sincharoonsak, T. (2021). Asset quality affects the operational efficiency of teacher saving and credit cooperative the area of central region part of Thailand. *UMT Poly Journal*, *18*(1), 614-623.

Kiama, G. P. (2014). Factors affecting implementation of public procurement act in SACCO societies in Kenya. *The International Journal of Academic Research in Business and Social Sciences*, *4*, 169-194.

Lintner, J. (1962). Dividends, earnings, leverage, stock prices and the supply of capital to corporations. *The Review of Economics and Statistics*, *44*(3), 243-269.

Litzenberger, R. H., & Ramaswamy, K. (1979). The effect of personal taxes and dividends on capital asset prices: Theory and empirical evidence. *Journal of Financial Economics*, *7*(2), 163-195.

Miller, M. H., & Modigliani, F. (1961). Dividend policy, growth, and the valuation of shares. *The Journal of Business*, *34*(4), 411-433.

Mmari, G., & Thinyane, L. (2019). Analysis of factors influencing financial performance of savings and credit co-operative societies in Lesotho: Evidence from maseru district. *International Journal of Financial Research*, *10*(2), 121-136.

Noordin, N., Rajaratnam, S., Said, S., Mohd Hanif, F., & Juhan, R. (2012). Dividend and profit allocation practices of performing cooperatives in Malaysia. *Oñati Socio-Legal Series*, *2*(2), 156-176.

Odhiambo, S. P. O. (2018). Determinants of financial performance of savings and credit cooperative societies in Nakuru Town, Kenya. *IOSR Journal of Business and Management*, *8*(6), 36-45.

Pal, K., & Goyal, P. (2007). Leading determinants of dividend policy: A case study of the Indian banking industry. *Decision*, *34*(2), 87-112.

Pornpradub, Y., & Bosakoranut, S. (2021). The capital management structure and profitability of large savings cooperatives in Thailand. *Muban Chombueng Rajabhat University Research Journal (Humanities and Social Science)*, *9*(2), 139-154.

Sari, P. K., & Handoyo, S. (2013). The influence of profitability, liquidity, and debt to the dividend payout ratio in manufacturing company (Listed in Indonesian Stock Exchange from 2008-2010). *Jurnal Siasat Bisnis*, *17*(1), 90-100.

Sathyamoorthi, C. R., Mbekomize, C. J., Radikoko, I., & Wally-Dima, L. (2016). An analysis of the financial performance of selected savings and credit co-operative societies in Botswana. *International Journal of Economics and Finance*, *8*(8), 180-193.

Shibutse, R. L., Kalunda, E., & Achoki, G. (2019). Effect of liquidity and dividend pay-out on financial performance of de-

posit taking SACCOs in Kenya. *Integrated Journal of Business and Economics*, *3*(3), 297-312.

Torres-Inga, C. S., Velasco-Heras, C., Juana, A. J. A.-d., Guevara-Viera, G. E., & Guevara-Viera, R. V. (2022). Technical efficiency's nonparametric analysis of ecuadorian saving and credit cooperatives before and during the pandemic. *Economies*, *10*(4), 82-97.

Wahjudi, E. (2020). Factors affecting dividend policy in manufacturing companies in Indonesia Stock Exchange. *The Journal of Management Development*, *39*(1), 4-17.

Yitayaw, M. K. (2021). Determinants of profitability and financial sustainability of saving and credit cooperatives in Eastern Ethiopia. *International Journal of Rural Management*, *17*(2), 239-261.

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