

Financial Decisions and their Impact on Value Creation in the CMAC Peru System

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ABSTRACT

The general objective of the research is to analyze and determine to what extent financial decisions have contributed to the creation of value in the System of Municipal Savings and Credit Banks (CMAC) in Peru. To achieve this, the scientific method was used, a non-experimental design study was carried out with an explanatory level, longitudinal or evolutionary type of study, through documentary analysis of secondary sources concerning the 11 CMACs operating in Peru. Econometrics was used to determine the influence between the variables under study so that an econometric model of panel data was estimated. The estimation model used was Ordinary Least Squares-Pool Sample and Fixed Effects. The results of the research showed that not all the financial decisions taken by the CMACs contributed to the generation of value in the study period, having a decreasing behavior of EVA. In addition, the explanatory variables for ROA and ROE explained 89%. The study concluded that the financial decisions contributed to the generation of value in the CMAC system, but it was decreasing. In 2006, the EVA was S/64,627.78 and in 2019 it had an EVA of - S/363,720.92, having a loss of value of 662.79%. The decreasing trend of the ROA and ROE were symptoms of loss of value in the CMAC system. The EVA model was successfully developed. The EVA model was successfully developed, and the EVA of the CMAC system was decreasing.

Keywords: Decisions, panel, model, system, EVA.

RESUMEN

La investigación realizada tuvo como objetivo general, analizar y determinar en qué medida las decisiones financieras han contribuido a la creación de valor en el Sistema de Cajas Municipales de Ahorro y Crédito

(CMAC) en el Perú; para lograrlo se usó el método científico, se llevó a cabo un estudio de diseño no experimental con nivel explicativo, tipo de estudio longitudinal o evolutivo, a través del análisis documental de fuentes secundarias con relación a las 11 CMAC que operan en Perú, se usó la econometría para lograr determinar la influencia entre las variables de estudio, para ello se estimó un modelo econométrico de datos de panel, el modelo de estimación usado fue el de Mínimos Cuadrados Ordinarios-Pool Sample y Efectos fijos. Los resultados de la investigación demostraron que no todas las decisiones financieras tomadas por las CMAC contribuyeron a la generación de valor en el periodo de estudio, teniendo un comportamiento decreciente del EVA, además las variables explicativas respecto al ROA y ROE explicaron en un 89%. Las Conclusiones de la investigación fueron: a) Las decisiones financieras contribuyeron a la generación de valor en el sistema CMAC, pero fue decreciente, el año 2006, el EVA fue de S/64,627.78 y en el año 2019 tuvo un EVA de - S/363,720.92, teniendo una pérdida de valor del 662.79%, b) la tendencia decreciente del ROA y ROE fueron síntomas de pérdida de valor en el sistema CMAC, c) se logró desarrollar con éxito el modelo EVA.

Palabras Clave: Decisiones, panel, modelo, sistema, EVA.

INTRODUCTION

Economic science verifies the decisions and processes that are linked to production, expenditure, financing, demand, and generation of value (Dejuán *et al.*, 2020, p. 135). According to Fernández (1999), the company should “generate value” for its workers, its users, shareholders, suppliers, and the state, taking into account what is indicated by the financial theory that the supreme objective of any company is the creation of value for its shareholders. According to Blanco *et al.* (2015) and Tong (2007), investment and financing decisions must be made efficiently; according to Porter and Kramer (2011), the shared value must be generated, so it is necessary to determine whether a company generates value; according to Herrera (2006), in this context, microfinance companies, in recent years, have been playing a leading role in the banking penetration and democratization of credit for Peruvian SMEs. The Cajas Municipales del Perú (CMAC) system is one of the organizations that has been supporting the microfinance sector the most, reporting positive after-tax profits in recent years, according to Mendiola, Aguirre, and Aguilar (2015); however, seeing that the decreasing trend of the main profitability indicators, such as return on equity (ROE) and return on total assets (ROA), could be signs of loss of value in the CMAC system aggregated to the FEPCMAC. For this, it is necessary to determine whether the financial decisions impacted the

creation of value in the CMAC system in Peru. This question is revealed by using a well-known method of value creation: the EVA (Economic Value Added or Economic Value Added), according to Angel (2014) the EVA indicated that for any business to be attractive and good, it has to establish profitability that reaches the costs of basic resources to be able to run its operation. In the same way, Gonzales and Saez (2004) stated that a means of measurement is the EVA since it has a lot of economic feasibility within an institution. Its goal is to understand which business units work better with their assets to produce returns and increase shareholder value. Finally, Li (2010) indicated that added value, known as EVA, is the amount that an entity has left over when it can cover the minimum profitability and expenses that were evidenced, which is related to that mentioned by Téllez (2015) and Smail (2013).

To guide the research, the definition of the problem was posed in the form of a question: Have financial decisions contributed to value creation in the CMAC system in Peru? Corresponding to the problem, the proposed objective was: To analyze and determine to what extent financial decisions have contributed to the creation of value in the CMAC system in Peru. Similarly, as a tentative answer to the problem, the hypothesis was proposed: Financial decisions have contributed to the creation of value in the CMAC system of Peru; however, the trend of EVA as a measure of value

creation has been decreasing during the period analyzed.

The methodology adopted for the empirical analysis was first to calculate the capacity for value creation using the EVA method, then using the panel data methodology, the level of significance of the explanatory and explained variables was determined. The results of the research led to the conclusion that during the study period the CMAC system in Peru generated decreasing economic value according to the EVA calculation, and that the decreasing trend of the ROE and ROA profitability indicators, which are relevant tools for profitability indicators according to Lozano (2010), were symptoms of loss of value in the CMAC system in Peru.

MATERIALS AND METHODS

The study was developed within the typology of applied research, given that the treatment of the problem of value creation, within the framework of a theoretical model, had the ultimate goal of measuring the generation of value in the Peruvian CMAC system through the use of the model $EVA = NOPAT - WACC * NIOA$, where NOPAT is the operating profit net of taxes, WACC is the weighted average cost of capital, NIOA is the net investment in operating assets, and NOPAT is the net investment in operating assets.

According to Hsiao (2003), Greene (1999) and Mayorga *et al.* (2000) regarding panel data indicated that data sets combining time series with cross-sections are common in economics, in the econometric model of the study, the unit of analysis was the CMACs; either EVA_{it} the endogenous variable is defined as the economic value added of CMAC i in year t . On the other hand, the exogenous variables are made up by $Colocaciones_{it}$, ROA_{it} , ROE_{it} , $TAPP_{it}$, $Depositos_{it}$, and $TIPP_{it}$, which are defined as CMAC's placements, return on assets, return on equity, weighted average lending rate, deposits, and weighted average deposit rate i in the year t , respectively. From the above, the econometric panel data model is defined as follows:

$$EVA_{it} = \alpha_i + \beta_0 + \beta_1 Colocaciones_{it} + \beta_2 ROA_{it} + \beta_3 ROE_{it} + \beta_4 TAPP_{it} + \beta_5 Depositos_{it} + \beta_6 TIPP_{it} + u_{it}$$

Where α_i is the unobservable error component specific to each CMAC (heterogeneous) and which does not change over time; this component captures variables such as the place of origin of each CMAC, the preferences of senior officials, and/or the management policies of that CMAC. On the other hand, β_0 is the intercept vector to be estimated, and u_{it} is the CMAC perturbation term i , but which changes over time.

Due to the nature of the problem that is the subject of this thesis, the level of the research was explanatory "the fundamental objective of economic science is to explain what causes what" (Mendoza, 2016), quantitative approach, *non-experimental* type research design, and due to the form of secondary data collection through the financial statements of the financial companies belonging to the CMAC system of Peru, the study was of a *longitudinal* or *evolutionary* cut type, for which a historical series (2006-2019) was considered. From this, it was possible to verify and test the hypotheses through the description of the variables of the problem. In this research, the population and sample consisted of the 11 Municipal Savings and Loan Associations currently operating in Peru, which make up the Peruvian CMAC system, whose statistical and financial information concerning them is published on the web platform of the Superintendency of Banking and Insurance (SBS), the Federation of Municipal Savings Banks of Peru (FEPCMAC), institutional reports, annual audited financial statements, risk rating companies, etc. In this sense, the information collected was strict of secondary type, for the present research, the reliability of the instrument was determined "by the fidelity to the sources and publicity, it is the guarantee that the data are faithful to the source" (Vara, 2015, p.395). The technique of documentary analysis was used, the filing and selection of existing information from bibliographic and demographic sources, resorting to specialized texts, magazines, newspapers, the Internet, etc.

RESULTS

Regarding the analysis of the dependent variable “economic value creation” based on the calculation of the variables NOPAT, WACC, and NIOA, the calculation of the value creation of the Peruvian CMAC system through the EVA model showed a markedly decreasing behavior during the study period, showing in 2006 an EVA of S/64,627.78 and in 2019 an EVA of S/-363,720.91. 78 and in the year 2019 an EVA of S/-363,720.91, having a loss of value of -662.79% in the study period, concerning the independent variable “financial decisions”, the placement and deposit indicators showed an increasing behavior in the study period.

The econometric model was estimated using the fixed effects estimation method. Regarding the signs of the coefficients, these are in line with economic and financial theory. In particular, ROA, ROE, and TAPP were found to have negative effects on value creation in the municipal savings bank system during the study period. While, placements, deposits, and TIPP show positive effects on EVA. In this sense, the fixed effects estimation indicates that a 1% decrease in ROA and ROE tends to reduce the value of EVA by - S/965.51 and - S/3,243.16, respectively. On the other hand, a 1% increase in TAPP tends to reduce on average the EVA of CMAC by - S/387.95.

On the other hand, for every S/1,000 in Placements and Deposits that CMACs make as part of their operating activities, EVA tends to increase on average by S/75,295.05 and S/79,230.50, respectively. Likewise, it can be seen that with a 1% increase in the TIPP, the EVA increases on average by S/390.55, finally, the R-Squared value, in this case, is 0.89, which indicates that the exogenous variables considered in the econometric model explain 89% of the variation in the EVA of the CMACs during the study period.

Contrasting the working hypotheses

To guide the research, the following general hypothesis was previously put forward: “Financial decisions have contributed to value creation in the Municipal Savings and Credit Banks System (CMAC) in Peru; however, the trend of EVA as a

measure of value creation has been decreasing during the period of analyzed”. This hypothesis has been fully contrasted with empirical evidence. Regarding specific hypotheses 1 and 2, the decreasing trend of the financial indicators (ROE and ROA) constitutes evidence that the investment and financing decisions adopted by the CMACs have been creating less and less value, judging by the EVA generated during the study period and that it is possible to apply the EVA model, through a panel data methodology, to explain the creation or destruction of value in the CMAC System in Peru and any other economy, were fully contrasted with the empirical evidence.

Discussion of the results with the research background

This research was developed within the precepts of financial theory, specialized texts in finance assume that the maximization of shareholder value is the main financial objective of the company, in that sense the companies of the CMAC system in Peru also seek to generate value, therefore the EVA is a strategic management tool. The aforementioned is related to Leyva (2014) who demonstrated that “Economic value added as a strategy is a key management tool for strategic planning, in the same way, the aforementioned is related to Baculima & Méndez (2015) who demonstrated in their research that the application of the EVA financial valuation method constitutes a strategic management tool, the notorious prominence of microfinance institutions in the study period and their role in the banking penetration of Peruvian SMEs were demonstrated in the research, which is related to the contributions of Quispe & Contreras (2012) and Mendiola and Aguirre (2015), Finally, the results of the research showed that although the Peruvian CMAC system is indeed generating profits, it does not necessarily mean that it generates value and that it is possible to apply the EVA model to the Peruvian CMAC system, which is related to the studies of Flores (2008), Pacheco (2009) and Zamora (2008).

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