EFFECT OF PROGRAM BUDGET MONITORING AND EVALUATION MECHANISMS ON THE EFFICIENCY OF PUBLIC EXPENDITURE IN CAMEROON

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Abstract

The objective of this research is to examine the effect of the monitoring and evaluation mechanisms introduced by the program budget on the efficiency of public expenditure in Cameroon. To achieve these objectives, we administered a questionnaire to 1,025 actors in the public expenditure chain in the following public institutions: the central and decentralized services of 26 ministerial departments, 05 municipalities and 14 public enterprises and establishments. The results indicate that the budget reform initiated in 2013 is still slow to produce the expected effects in Cameroon due to a number of dysfunctions. Indeed, if the indicators for measuring performance and the a priori controls of the quality of expenditure have a positive effect on the efficiency of investment and operating expenditure. Others, such as the allocation of credits according to the expected results and costs, internal controls and ex post external controls of public expenditure, on the other hand, have a negative effect on the efficiency of investment and operating expenditure. The results of the estimates also reveal that the State of Cameroon does not achieve the best possible results with the available resources due to the insufficient maturation of the projects included in the public investment budget in terms of capital expenditure and the price list for current expenditure. The study recommends

that the performance measurement indicators be sufficiently refined so that they truly provide information on the objectives of the programs.

Keywords: Program budget, public expenditure, performance, program review, results measurement indicators, Cameroon

INTRODUCTION

For several years, all modern societies have been working to change their budget management approach and to reform their public management framework to orient it towards results and the search for efficiency (Sidibe and Thera, 2021). Indeed, the means-based budgeting system seems insufficient to meet the demands of taxpayers (Tommasi et al., 2010). Faced with this situation, governments are broadening their traditional view of budget management practices by moving from the means budget to the program budget. The program budget being defined by Shah and Shen (2007) as a budgeting system which presents the reasons and the objectives for which the funds are intended, the cost of the programs and the associated activities to achieve these objectives, and the output to be produced. or services to be provided by each program.

Traditionally, the literature in management sciences generally documents the effects of the transition from the means budget to the program budget in terms of allocative efficiency (Percebois, 2006) and managerial efficiency (Brumby et alii, 1996, Melkers et al, 2002; Kono Abe and Onana, 2020). Virtually not addressing the effects of the implementation of the monitoring and evaluation mechanisms of this budgetary instrument on the efficiency public spending.

However, according to Bouckaert et al (2006), the monitoring and evaluation tools introduced by the program budget are intended to compare the results obtained with those planned, but also to identify the differences, identify the origins of the differences and formulate corrective measures to remedy them in order to guarantee efficiency in the use of public resources.

Therefore, the objective of this article is to examine the effect of the monitoring and evaluation mechanisms introduced by the program budget on the efficiency of public expenditure in Cameroon.

The rest of the article is organized as follows: section 1 presents the literature review, section 2 describes the institutional framework of the program budget in Cameroon and the methodology used, section 3 presents and analyzes the results and section 4 concludes it and brings the implications of managerial orders.

THEORETICAL FOUNDATIONS

The link between program budget monitoring and evaluation mechanisms and the efficiency of public expenditure is rooted in the theoretical stream of new public management and agency theory.

New Public Management (NPM) Theory

Inspired by the theoretical corpus of NPM, the program budget makes it possible to move from a logic of means to a logic of results (Percebois, 2006; Camby, 2002; Trosa, 2002). The introduction of a logic of results in the State budget translates into two series of measures inspired by the theory of public choices and NPM which aim to improve the allocation of resources. The first of these measures consists in defining a credit authorization framework based on the notion of performance, that is to say, precisely the establishment of a results-oriented budgeting system, the latter above all imposing to redefine the budget architecture by switching to program budget logic. But, even more, the transition to a logic of results presupposes that this renovated framework includes

Agency theory

Agency theory can be highlighted here to examine the introduction of program budgeting in the public sector. While the program budget primarily involves the approach relating to the vote, execution and control of finance laws, it sets itself much broader ambitions by creating a new governance mechanism with a view to increasing the efficiency of public spending. Indeed, the reform set itself objectives from the outset which clearly relate to the introduction of monitoring-evaluation mechanisms capable of establishing a more balanced agency relationship between elected officials and citizens, but also between the government and spending ministries.

As far as the public sector is concerned, it is also an agency relationship which is established at two complementary levels. On the one hand, the parliamentarians representing the population who gave them a mandate to manage the fields of public action on their behalf. On the other hand, Parliament, through the vote of the finance law, delegates to the administration the power to implement public action tools or to manage specific areas within the framework of strategic orientations. Which have won the consent of the voters. In reality, the State and its various administrations in their public service mission are mandated by the taxpayers represented by Parliament, to carry out their public service mission.

Furthermore, as Hou (2011) points out, the government can be seen as the agent that prepares the budget, while the legislators are the main ones who grant budgetary authorizations

and examine the execution of the expenditure. Folscher (2007) also highlights various relationship issues between principals and agents that are potentially problematic in the public sphere. The relationship between ministries of finance and sector ministries, for example, is generally problematic in this respect, with hidden information and actions often persisting. Agency problems are also found in the budgetary process between heads of ministerial departments and civil servants,

The presence of an agency relationship expresses two problems. The interests of the principal and the agent may differ. There may also be an informational asymmetry between the principal and the agent. Most often, the latter is more informed than the principal, both on external elements and on the actions carried out (Mathis, 2012). The agency's model is based on two behavioral assumptions. The first hypothesis considers that economic agents seek to optimize their utility, The second presupposes that individuals are able to exploit the incompleteness of contracts (Charreaux et alii, 1987).

To overcome agency problems within the public administration (asymmetry in the distribution of information, the problem of opportunism) and guarantee a marked improvement in budget execution, the program budget willintroduce governance mechanisms capable of establishing a more balanced agency relationship between elected officials and citizens. Thus, to bring the action of the agents to respond appropriately to the wishes of their constituents, the program budget will introduce two monitoring and evaluation mechanisms, namely the performance review and performance measurement indicators.

INSTITUTIONAL FRAMEWORK OF THE PROGRAM BUDGET IN CAMEROON

Before the 2007 reform, the budget process was based on the 1962 Ordinance. Like most countries at the time, Cameroonian public finances were based on a means budget, also called a budget by nature. The purpose of such a regime was above all to specify the nature and destination of public expenditure.

The budget thus drawn up showed the list of the means deployed (missions, salaries, purchases of supplies, debt, etc.) and the list of the administrations in charge of carrying them out. However, the purpose of the expenditure was hardly apparent. In the current context, which requires an in-depth evaluation of the effectiveness of spending, the shortcomings of this "old-fashioned" budget presentation are clearly highlighted: resources automatically renewed from one year to the next; a lack of medium-term predictability; a loose link between investment and operation; the absence of a performance requirement; an unfavorable economic situation (Ministry of Finance of Finance, 2011).

Faced with this bundle of elements calling into question the effectiveness of the resource budget, the Cameroonian government has been engaged for several years in a vast process of public finance management reform crowned by the adoption of law no. 2007/006 of December 26, 2007 on the financial regime of the State (FRE) which entered into force in all its provisions on January 1, 2013. Following this text, the State budget is drawn up, presented, adopted and executed by programs which translate public policies, and to which are associated objectives accompanied by results indicators.

At the level of the budget of each ministry, the appropriations are presented by sections, programs, actions, articles and paragraphs. Classified in two categories, in operational programs and in support programs, the program gathers the appropriations intended to implement an action or a coherent set of actions coming under the same ministry and to which specific objectives are associated. The program constitutes the unit of specialization of credits and the limiting level of the authorization of expenditure, in commitments and in payments. The program also constitutes the framework for the operational management of public policies. In Cameroon, for reasons of operational management, the program corresponds to groupings of departments,

The action, as an elementary component of a program and to which are associated precise, explicit and measurable objectives by performance indicators, makes it possible to demonstrate how the administration envisages carrying out the program.

Beyond the structuring of the budget by programs, the FRE aims in particular to ensure better readability of public policies, improve operational performance, strengthen the role of Parliament in the evaluation and control of public policies, adapt the budgetary system and Cameroonian accountant to regional and international standards and practices of budget execution.

The FRE not only reinforces the traditional principles of public finance management which aim at the conformity and regularity of operations, but also enshrines the new principles which are more or less adopted in OECD countries and some countries of the sub-Saharan Africa. region.

Furthermore, the FRE leads to the renewal of the role of public expenditure players and the emergence of new players responsible for results in return for greater leeway in the execution of the budgets allocated to their programs. Indeed, under the authority of the Minister, the hierarchical pyramid, in the sense of management in program budget mode, includes the program manager, the action manager, the manager of the administrative unit and the activity manager.

Moreover, within the framework of the FRE, the performance-based program budgeting approach is based on a logic which states that, based on political orientations, the expectations of citizens (users, taxpayers), internal leeway and mobilized resources, each ministry sets strategic objectives and program objectives. These objectives are described in the Administration Performance Project (APP) which constitutes the basic document for strategic and operational management.

The PPA is a document drawn up by a ministry presenting the summary of information on the programs, serving as a basis for budget advocacy. The APP accompanies the finance bill to better inform Parliament on the content of the programmes. On the one hand, it traces national priorities, previous results, strategic objectives, etc. and on the other hand, for each program, the objectives, indicators and targets, and the budget credits requested in Commitment Authorization and Payment Credit.

Based on the results obtained, the differences are measured and reported in the Annual Performance Report (APR). This is a virtuous circle in which performance-based management takes place, which makes it possible to correct inconsistencies in view of the results.

RESEARCH METHODOLOGY

Data sources

The data used come from a survey by questionnaires administered to 1025 stakeholders in the PPBS chain, selected from 26 ministerial departments, 05 municipalities and 14 companies and public establishments (Table 1) over the period from July 2020 to October 2020. This number is obtained following a multi-stage sampling procedure, combining a convenience approach and a sample size calculation method.

Study variables

In the context of this article, we have used four program budget monitoring and evaluation mechanisms as exogenous variables and as endogenous variable, the efficiency of public expenditure. To measure responses, a Likert scale from 1 to 5 is used. To these variables of interest, we have added two control variables which are also likely to influence the level of efficiency of public expenditure. These are public procurement procedures and the price list. Table 1 summarizes the study variables.

Table 1: Breakdown of respondents by public entities

Public entities		Number of entities	Number of respondents surveyed
Companies and public administrative establishments	ADC, ARMP, ARSEL, BUNEC, CAMTEL, CNPS, EDC, EIFORCES, FEICOM, Douala General Hospital, SODECAO, SNH, University of Yaoundé 2	14	235
Decentralized Territorial Communities	Municipality of Soa, Urban Community of Yaoundé, Urban Community of Douala, Urban Community of Ebolowa, Urban Community of Bertoua	05	40
Ministries	1. Ministry of Justice; 2. Ministry of External Relations; 3. Supreme State Control ; 4. Ministry of Health ; 5. Ministry of Commerce; 6. Ministry of Tourism and Recreation; 7. Ministry of Forests and Wildlife; 8. Ministry of Small and Medium Enterprises, Social Economy and Handicrafts; 9. Ministry of Agriculture and Rural Development; 10. Ministry of Fisheries and Animal Industries; 11.Ministry of the Environment, Nature Protection and Sustainable Development; 12. Ministry of Mines and Technological Development. 13. Ministry of Employment and Vocational Training; 14. Ministry of Social Affairs; 15. Ministry for the Promotion of Women and the Family; 16. Ministry of Labor and Social Security. 17. Ministry of Water and Energy; 18. Ministry of Public Works; 19. Ministry of Estates, Cadastre and Land Affairs; 20. Ministry of Housing and Urban Development; 21. Ministry of Posts and Telecommunications; 22. Department of Transportation. 23. Ministry of Basic Education; 24. Ministry of Higher Education; 25. Ministry of Scientific Research and Innovation; 26. Ministry of Secondary Education.	26	750

Data analysis methods

In this sub-section, we present the techniques of data analysis allowing us to examine the effect of monitoring and evaluation mechanisms of the program budget on the efficiency of public expenditure in Cameroon. Thus, we will in turn present the preliminary treatments on the measurement scales, the theoretical reminders, the decision rules and the choice of hierarchical regression with the so-called forced entry method.

Preliminary treatments on the measurement scales

Preliminary processing refers to analyzes of factorization and reliability conditions (Gavard-Perret et al., 2008). They are useful for considering the possibility of constructing a composite variable by factorial synthesis representing, on the one hand, the dimensions of the efficiency of public expenditure and, on the other hand, the dimensions of the monitoring and evaluation instruments of the program budget.

Table 2: Perceptions raised on the variables of the study

Variables	Indicators		Perceptions / budget chain (Likert scale)
Endogen-ous	Efficiency of public spending	- Improved level of expenditure efficiency; - Control of waste of resources	
Exogenous	Allocation of funds according to expected results	- The allocation of credits according to costs and expected results has enabled your ministry / company or public institution to improve the level of efficiency of its investment expenditure. - The allocation of credits according to costs and expected results has enabled your ministry / company or public institution to improve the level of efficiency of its operating expenses.	
	Internal expenditure control	- Since the switch to program budgeting, financial controls have enabled your ministry / company or public institution to improve the level of efficiency of its capital expenditures. - Since the switch to program budgeting, the controls carried out by the Supreme State Audit services have enabled your ministry / company or public establishment to improve the level of efficiency of its investment expenditure. - Since the switch to program budgeting, the controls carried out by the General Inspectorate of the Ministry of Finance have enabled your ministry / company or public institution to improve the level of efficiency of its expenditure. - Since the switch to budgeting by programme, the controls carried out by the Department of the Ministry of Finance in charge of controlling budgetary operations (DCOB) have enabled your ministry / company or public institution to improve the level of efficiency of its expenditure. - Since the switch to program budgeting, the controls provided by the Treasury Services Inspectorate have enabled your ministry / company or public institution to improve the level of efficiency of its expenditure.	1. not agree at all 2. Agree slightly 3. Without opinion 4. Somewhat agree 5. Totally agree
	External expenditure control	- Since the switch to program budgeting, the controls carried out by the Audit Bench of the Supreme Court have enabled your ministry / company or public establishment to improve the level of efficiency of its expenditure. - Since the switch to program budgeting, the controls provided by Parliament have enabled your ministry / company or public establishment to improve the level of efficiency of its expenditure.	
	Performance measurement indicator	- The performance measurement indicators have enabled your ministry / company or public institution to improve the level of efficiency of its operating expenses. - The performance measurement indicators have enabled your ministry / company or public institution to improve the level of efficiency of its investment expenditure.	
of Controls	Procedures for awarding public contracts	- Public procurement allows your ministry / company or public institution to improve the level of efficiency of its expenditure.	
	Price list	- The price list allows your ministry / company or public establishment to improve the level of efficiency of its expenses.	

Factorization conditions

Examination of the factorization conditions uses three (03) main indicators (Table 3): the inter-item correlation matrix, the Bartlett index and the Kaiser-Meyer-Olkin (KMO) index.

Table 3: Verification of factorization conditions

Quality indices	Meaning	Critical thresholds	Authors
Pearson correlation (between items)	Measure of intensity of the relationship between variables	- Greater than 0.5 - Tends to 1 - P-value ≤ 0.05	Gavard-Perret et al. (2008) Hair et al. (1998)
Bartlett's sphericity test	Multivariate normality measure of the distribution set	- Less than 0.00 (very significant) - Less than 0.05 (significant) - Between 0.05 to 0.1 (acceptable) - Greater than 0.1 (not significant)	Gavard-Perret et al. (2008) Pallant (2013) Bartlett (1954)
Kaiser-Meyer-Olkin (KMO)	Overall quality measure of inter-item correlations	- Less than 0.5 (unacceptable) - Between 0.5 and 0.6 (miserable) - Between 0.6 to 0.7 (poor) - Between 0.7 to 0.8 (good) - Between 0.8 to 0.9 (very good) - Greater than 0.9 (excellent)	Gavard-Perret et al. (2008) Kaiser (1974) Field (2000) Pallant (2013)

Correlation matrix

The correlation matrix allows you to examine the magnitude of the Pearson correlation coefficients. This is to ensure that there are minimal correlations between the items or variables being analyzed. If the correlations are very weak or non-existent, it is very difficult to bring out one or more factors. In this case, factorial synthesis is not advised. Current research data points to correlation matrices of very low magnitude. It appears that significant inter-item correlations are almost non-existent. In other words, the values present in these different matrices reflect levels of significance that are mostly far higher than the 0.05 margin of error. Consequently, factorization (or factorial synthesis) is discouraged.

Kaiser-Meyer-Olkin index

The KMO index gives an overall assessment of the quality of inter-item correlations. Thus, the better the correlations, the better this index. It must indeed tend towards 1 to justify the factorization. In other words, the further it deviates from 1, the less factorial synthesis is indicated. In the present case, its value is at the limit of the authorized threshold 0.5. It is described as miserable and unacceptable. Consequently, this criterion is not very favorable to factorization.

Bartlett index

Barlett's sphericity test gives an assessment of multivariate normality of all the variables or items involved in the analysis. It is more favorable to factorization when it is significant, that is to say when it tends towards 0. In the present research, this indicator is well above 0.05 in almost all cases. Therefore, factorization is not possible.

Gavard-Perret et al. (2008) point out that if two of the three conditions are satisfied, factor analysis can be performed. Otherwise, it must be abandoned. It is this advice that we follow in this work, given the mediocre quality of the correlations. Faced with the impossibility of creating composite variables, the different items must be considered individually, reflecting different aspects of the phenomenon studied.

The reliability of the scales

This is necessary to check the internal consistency of the multi-item variables. Cronbach's alpha indicator is used to judge reliability.

Reliability is indeed good when the Cronbach's alpha indicator displays a value greater than or equal to 0.6. This assumes that the items of each dimension form a coherent whole and all refer to a common vision of the observed reality. In this case, the calculation of a composite variable is authorized. Otherwise, ie when the Cronbach index is low (less than 0.6), consistency between the items is not established. The calculation of a composite variable cannot be justified because the items capture unusual or even different aspects of the phenomenon studied.

In current research, the reliability analysis is carried out on the dimensions of the variable efficiency of public expenditure, as well as on the dimensions relating to the mechanisms for monitoring/executing the program budget (the respective measurement scales being defined a priori).

The results are in agreement with the conclusions drawn from the factorization conditions. They indicate a lack of consistency between the items for each dimension of the quality of expenditure or budget management instruments. This reflects the impossibility of synthesizing the items and the interest of considering them individually as variations of the phenomenon studied.

Analysis using the Multiple Linear Regression test

The regression model applied in the context of this research is constructed with the aim of explaining the variance of a phenomenon, here the efficiency of public expenditure (dependent variable) using a combination of explanatory factors (variables independent) which

takes into account the monitoring and evaluation mechanisms of the program budget. These clarifications agree with the thinking of Gavard-Perret et al (2008), who note that the purpose of linear regression is to model the relationships between a variable to be explained and at least two explanatory variables, the whole measured on a scale metric or quantitative.

Beyond this description, it is a question of indicating the conditions of application of this statistical tool, the indices of quality of adjustment of the model and contribution of each predictor.

The standard equation for this type of regression is written as follows:

$Y = a + b_1X_1 + b_2X_2 + \ldots + b_kX_k + \varepsilon$ (1)

X_i = Independent variables

b_j = Partial regression coefficients

a = Constant

Terms of application

The validation of the results of a multiple regression is subject to compliance with certain application conditions.

- The first concerns the nature of the variables involved in the model. Variables must be continuous for predictors (independent variables), as well as dependent or predicted variables. The use of five-point Likert-type attitude scales confirms compliance with this condition;

- The second condition prohibits significant multicollinearity. This condition stipulates that the correlations between the different explanatory factors must not be too strong between them. The public expenditure quality model studied takes this type of requirement into account, because each of the predictors involves different indicators. To verify this condition, it is common to use two indicators, the Tolerance and the VIF (Variance Inflation Factor). The first is between 0 and 1 and must be as far away from 0 as possible. As for the second, it must be less than 10;

- The third condition concerns the sample size. If the practice would like to tolerate samples of at least 100 individuals, Hosmer and Lemeshow (1989) propose a minimum of 10 observations per dependent variable. This condition is fully satisfied in this research because the sample goes well beyond 1,000 observations;

- The last condition concerns the normal distribution of the model variables. The asymmetry and kurtosis coefficients allow this verification. However, the large sample size relativizes this premise.

Decision rules

Several adjustment indicators are assessed to judge the quality of the regression results. The main indicators are defined as follows:

- The multiple correlation coefficient R: it reflects the strength of the association between the independent variables (combination of explanatory factors) and the dependent variable (quality of public spending). It is better when it tends to 1;

- The coefficient of determination R^2: also called explained variance, it provides information on the proportion of the variance of the dependent variable explained by the variation of the predictors or independent variables. Its value is better when it tends towards 1. It is common to retain the classification proposed by Chin (1998), where the explained variance is described as low (greater than or equal to 0.19), moderate (greater than or equal to 0.33) and substantial (greater than or equal to 0.67). However, we cannot ignore the instructions of Croutsche (2002), who considers that the coefficient R^2 is significant when it is greater than 0.1.

- The standardized beta coefficient: it indicates the weight of the predictor in the variation of the predicted variable. It is also better when it tends towards 1. Its sign indicates the direction of the relationship, depending on whether it is positive or negative. The significance of this coefficient is determined by a Student test, to which a level of significance is associated. The latter confirms the relevance of this coefficient when it is less than or equal to the margin of error of 5%;

- Fischer's F-test returns a value between 0 and plus infinity. it is better when it moves away from 0. A significance level is associated with it. Depending on the margin of error retained (generally 5%), the relationship tested is said to be statistically significant when the significance associated with the F test is less than or equal to the margin of error. Otherwise, the relationship is said to be insignificant.

Choice of hierarchical regression with so-called forced entry method

Multiple regression made it possible to simultaneously regress each indicator of the efficiency of public expenditure on the monitoring and evaluation mechanisms of the program budget by favoring block modeling with a so-called forced entry method. This approach is known as hierarchical regression.

Hierarchical regression allows the researcher to determine the order of entry of variables into the model using the creation of blocks of variables that will be entered in a hierarchical manner into the model. This allows to observe in more detail how the model behaves. The results indicate the contribution of each block in terms of percentage of variance explained (R2). For blocks made up of several variables, it is in fact possible to enter them at the same time (forced entry).

The forced entry method emphasizes that all variables evaluated per block are entered at the same time and an F-test evaluates the entire model. The choice of variables to include is

still based on theory. In the current case, the variables to be included for each block of explanatory factor, as well as their order of entry, are defined with reference to the operationalization procedure.

RESULTS AND DISCUSSIONS

Description of indicators for measuring the efficiency of public expenditure

Statements about the efficiency of public spending are generally not favorable to the quality of public spending. Table 4 shows that a large part of the opinions provided by the players questioned reflect a position of neutrality through the mean and median values. The low standard deviation reveals that the population is rather homogeneous (common points) on questions relating to the efficiency of public spending.

Table 4: Descriptive statistics of indicators for measuring the efficiency of public expenditure

		efficien_dep_ improved	efficien_dep_funct_ improved	efficien_dep_invest_ improved	waste_resource_ mastered
NOT	Valid	1024	1024	1024	1024
	Missing	1	1	1	1
Mean		3.01	3.03	3.00	3.07
Median		3.00	3.00	3.00	3.00
Standard deviation		1,407	1,422	1,417	1,422
Cronbach's Alpha		0.078			

In fact, the average and median values of the four indicators that measure the efficiency of public spending show that the participants in the survey do not generally have a clear-cut position on the level of efficiency of public spending.

Furthermore, examination of the reliability of this measurement scale indicates an extremely low degree of consistency between the four statements. Consequently, the different items should be exploited separately and not jointly under a composite variable.

Study of the relationship of dependence between the efficiency of public expenditure and the instruments for monitoring the execution of the program budget
Improvement of the level of efficiency of expenditure and instruments for monitoring the execution of the program budget

The results relating to this relationship are not significant for all of the hierarchical levels of the regression model (P-value test F=0.61). This assumes that, for the entire population studied, no instrument for monitoring the execution of the program budget statistically justifies the improvement in the level of efficiency of public expenditure.

The fit indices are of poor quality. The R and R^2 values are less than 0.1. The levels of significance associated with the values of the Student's T test are well above the critical threshold of 0.05 (beta~0/P-value >0.05). Consequently, the contributions relating to each of the indicators of the execution monitoring instruments considered all tend towards 0, with significances far greater than 0.05.

The control variables make it possible to relativize this relationship. Indeed, the integration of control variables relating to the improvement of the level of efficiency by the controls of the Audit Bench and the improvement of the level of efficiency by the controls of Parliament.

□   Concerning the improvement of the level of efficiency through the audits of the Audit Bench of the Supreme Court

This control variable induces a statistically significant effect of external expenditure control instruments on improving the level of expenditure efficiency. The actors for whom the relationship is proven agree with the fact that the controls carried out by the audit office improve the level of efficiency of expenditure. The relationship is significant at 5% (P-value test F=0.01). The goodness of fit indices of the model are acceptable although low, namely 0.15 for R and 0.02 for R^2. The beta regression coefficients reveal that the two external control indicators contribute significantly and positively to improving the level of expenditure efficiency. The first indicator reflects the controls provided by the DCOB (beta=0.12/P-value=0, 02) and the second the checks carried out by the inspection services of the Treasury (beta=0.10/P-value=0.05). Consequently, we maintain that the tools for monitoring the execution of the program budget relating to external control contribute to improving the quality of public expenditure through efficiency.

□   Concerning the improvement of the level of efficiency by the controls of the Parliament

This control variable induces a statistically significant effect of performance instruments and external expenditure control on improving the level of expenditure efficiency. The actors for whom the relationship is confirmed are No opinion on the fact that the controls provided by Parliament improve the level of efficiency of expenditure. The relationship is significant at 5% (P-value test F=0.02). The goodness-of-fit indices of the model are low but acceptable, ie 0.27 for R and 0.07 for R^2. The beta regression coefficients of the hierarchical model reveal that a performance measurement indicator and an external control indicator contribute significantly and positively to improving the level of expenditure efficiency. The first indicator reflects the improvement in the level of efficiency of operating expenditure by performance measurement indicators (beta=0.17/P-value=0.01) and the second the controls carried out by the DCOB (beta =0.14/P-value=0.04). Consequently, we maintain that the instruments for monitoring the

execution of the program budget relating to performance and external control contribute to improving the quality of public expenditure through efficiency.

Improvement of the level of efficiency of operating expenditure and instruments for monitoring the execution of the program budget

The results relating to this relationship are statistically significant for all of the hierarchical levels of the regression model, in particular the last which takes into account all of the predictors (P-value test F=0.02). This assumes that many instruments for monitoring the execution of the program budget statistically justify the improvement in the level of efficiency of operating expenditure within the population studied.

The fit indices are of low importance, ie 0.14 for R and 0.02 for R^2. Some levels of significance associated with Student's t-test values are within the critical threshold of 0.05. Therefore, some contributions relating to performance monitoring instruments are significant, while others all tend towards 0, with significances well above 0.05.

The monitoring instruments involved in the relationship we describe are essentially external control and the allocation of funds according to the expected results. In the first case, only the indicator relating to the controls provided by the DCOB (beta=0.09/P-value=0.01) has a positive influence on the improvement in the level of efficiency of operating expenditure. In the second case, the influence of the indicators relating to the allocation of credits according to the expected results is contrasted. It is positive for the indicator specifying that the allocation of appropriations according to costs and expected results has improved the level of efficiency of its investment expenditure (beta=0.07/P-value=0, 02). Conversely, it is negative for the indicator stipulating that the allocation of appropriations according to costs and expected results has improved the level of efficiency of its operating expenditure (beta=-0.06/P-value=0, 04). In conclusion, we note that the improvement in the level of efficiency of operating expenditure is favored by the external controls provided by the DCOB and the allocation of credits intended to improve the efficiency of investment expenditure. Conversely, it appears that the allocation of appropriations intended to improve the efficiency of operating expenditure tends to reduce the improvement in the level of efficiency of operating expenditure. We note that the improvement in the level of efficiency of operating expenditure is favored by the external controls provided by the DCOB and the allocation of credits intended to improve the efficiency of investment expenditure. Conversely, it appears that the allocation of appropriations intended to improve the efficiency of operating expenditure tends to reduce the improvement in the level of efficiency of operating expenditure. we note that the improvement in the level of efficiency of operating expenditure is favored by the external controls provided by the DCOB and the allocation of

credits intended to improve the efficiency of investment expenditure. Conversely, it appears that the allocation of appropriations intended to improve the efficiency of operating expenditure tends to reduce the improvement in the level of efficiency of operating expenditure.

The opposition observed between these two indicators of credit allocation is due to the fact that they have opposite indices of asymmetry. That of the allocation of credits intended to improve the efficiency of operating expenditure is negative, with a distribution tail spread to the left, towards the lowest values. This reflects a tendency to disagree with the following statement The allocation of funds according to costs and expected results has enabled your ministry / company or public institution to improve the level of efficiency of its expenditure on operations, hence the negative effect on improving the level of efficiency of operating expenses. This result does not contribute to improving the quality of public spending.

Improving the level of efficiency of capital expenditure and instruments for monitoring the execution of the program budget

The results relating to this relationship are non-significant regardless of the hierarchical level of the regression model (P-value test F>0.05). In other words, for the entire population studied, no instrument for monitoring the execution of the program budget statistically justifies the improvement in the level of efficiency of investment expenditure.

The fit indices are of poor quality. The global model displays R=0.1 and R^2=0.01. The levels of significance associated with the values of the Student's T test are well above the critical threshold of 0.05, making the contributions relating to each of the execution monitoring instruments considered unusable (beta~0 /P-value> 0.05).

The integration of the control variable relating to the improvement of the level of efficiency by the audits of the Audit Bench gives rise to quite pertinent remarks. The actors concerned are those who fully agree with the statement that the controls carried out by the Audit Bench improve the level of efficiency. Examination of the results reveals a relationship that is statistically significant at 1%, with a significant improvement in the regression models from one hierarchical level to another (P-value test F=0.00). The goodness-of-fit indices are average, ie 0.40 for R and 0.16 for R^2. The values of the regression coefficients show the significance of numerous indicators, involving several execution monitoring instruments, including external and internal controls, allocation of credits according to expected results and performance.

The effect is negative concerning external control, with the control indicator ensured by the inspection of Treasury services (beta=-0.15 / P-value=0.03) and the allocation of credits according to the expected results via the indicator allocation of credits according to costs and expected results improves the level of efficiency of operating expenditure (beta=-0.18/P-

value=0.01). This assumes that budget execution monitoring instruments related to external control and credit allocation have a negative effect on the level of efficiency of investment spending. For the two indicators involved in this relationship,

The effect is positive regarding performance, with the indicator Performance measures improve the level of efficiency of capital expenditure (beta=0.25 /P-value=0.00) and internal control, at through the indicator Financial controls improve the level of efficiency of investment spending (beta=0.13/P-value=0.05). As a result, execution monitoring instruments related to internal control and performance have a positive effect on the level of efficiency of capital expenditure. This result contributes to improving the quality of public spending.

Controlling the waste of public resources and instruments for monitoring the execution of the program budget

The results relating to this relationship are significant for all of the hierarchical levels of the regression model (P-value test F=0.03).This presupposes that instruments for monitoring the execution of the program budget statistically explain the control of the waste of public resources.

The fit indices are quite low, i.e. 0.14 for R and 0.02 for R^2. Few levels of significance associated with Student's t-test values are within the critical threshold of 0.05,indicating a reduced number of indicators with significant contributions.

The execution monitoring instruments involved in the relationship mainly concern external control and internal control. The first type of control involves controls provided by the DCOB for improving spending efficiency (beta=0.08/P-value=0.01). The second type of control involves the controls provided by CONSUPE for improving the efficiency of investment spending (beta=0.06/P-value=0.04). These two types of control promote control of the waste of public resources, the first having a greater effect. This result contributes to improving the quality of public spending.

In view of the results obtained, it should be considered that the instruments for monitoring the execution of the program budget which promote the efficiency of public expenditure vary according to the indicators of expenditure efficiency.

The indicators waste_ressource_maitrisé and efficien_dep_fonct_améliorée concern all of the stakeholders questioned. Conversely, the indicators efficien_dep_améliorée and efficien_dep_invest_améliorée concern small groups of actors who do not question the controls provided by the audit chamber and parliament to improve the efficiency of spending. The following table summarizes the relevant results previously commented on.

Discussion of results

The results above reveal a mixed effect of program budget monitoring and evaluation instruments on the efficiency of public expenditure in Cameroon. They corroborate the empirical results found by several authors.

Indeed, Melkers and Willoughby (2005) find that in several American states, the allocation of credits is not linked to the expected results or focused on the cost of public policies as provided for in the literature on the basis of the program budget. Widodo (2017) analyzing the effect of program budget implementation on allocative efficiency in Indonesia finds that the impact of performance information on budget allocation decisions remains quite limited. On the other hand, Poister (1999) arrived at the results according to which the performance indicators have a positive effect on the efficiency of the expenditure in the universities in New Zealand. Finally, Santiso (2006) shows that the external controls ensured by Parliament reinforce the efficiency of public expenditure.

Table 5: Summary of the relevant results of the effect of program budget monitoring and evaluation instruments on the efficiency of public expenditure

Monitoring of the execution of the program budget		Efficiency of public spending	R	R^2	Beta	sig.	Student's T	Control variables (R/Sig.)	
Instruments	**Indicators**							**control_chamber_compt_amelio_effi_dep**	**control_parliament_improved_effi_dep**
Performance indicators	indic_mesur_perf_amelio_effi_dep_fonct	improved_dep_efficiency	0.09	0.01	(+) 0.03	0.31ns	1.01	/	*Without opinion* (0.18/0.01*)
External expenditure controls	control_dcob_improved_effi_dep				(+) 0.01	0.03**	2.21	Agree (0.12/0.02**)	No opinion (0.14/0.04**)
	control_treasury_improved_effi_dep				(+) 0.01	0.70ns	0.38	Agree (0.10/0.05**)	/
External expenditure controls	control_dcob_improved_effi_dep	efficient_dep_funct_improved	0.14	0.02	(+) 0.09	0.01*	2.76	/	/
Allocation of funds according to expected results	affec_crédi_amélio_effi_dep_invest				(+) 0.07	0.02**	2.25		
	affec_crédi_amélio_effi_dep_funct				(-) 0.06	0.05**	-2.00		
External expenditure controls	control_treasury_improved_effi_dep	efficien_dep_invest_improved	0.10	0.01	(-) 0.04	0.21ns	-1.26	Totally agree (-0.15/0.04**)	/
Allocation of funds according to expected results	affec_crédi_amélio_effi_dep_funct				(-) 0.01	0.75ns	-0.32	Totally agree (-0.18/0.01*)	

					(+) 0.03	0.32ns	0.99	Totally agree (0.25/0.00*)	
Performance indicators	indic_mesur_perf _amelio_effi_dep _invest				(+) 0.03	0.32ns	0.99	Totally agree (0.25/0.00*)	
Internal spending controls	control_fi_improv ed_effi_dep_inves t				(+) 0.01	0.79ns	0.26	Totally agree (0.13/0.05**)	
External expenditure controls	control_dcob_imp roved_effi_dep	wasted_r esource_ controlled	0.14	0.02	(+) 0.08	0.00*	2.61	/	/
Internal spending controls	control_consupe_ amelio_effi_dep_i nvest				(+) 0.06	0.05**	1.99		

CONCLUSION

The objective of this article was to examine the effect of the monitoring and evaluation mechanisms introduced by the program budget on the efficiency of public expenditure in Cameroon. Thus, to achieve this objective, we relied on a theoretical and empirical analysis.

On the theoretical level, NPM and agency theory supported our conceptual analyses. In fact, inspired by the theoretical corpus of NPM, the program budget makes it possible to move from a logic of means to a logic of results (Percebois, 2006; Camby, 2002; Trosa, 2002). The introduction of a logic of results in the State budget results in two series of measures inspired by the NPM which aim to improve the efficiency of public expenditure. The first of these measures consists in defining a credit authorization framework based on the notion of performance and the second involves the introduction of performance measurement indicators. The principal-agent relationship also provides particularly suitable tools in analytical and operational terms (Cohen, 2007). In effect, from the outset, the budget reform set itself objectives that clearly relate to the introduction of governance mechanisms capable of establishing a more balanced agency relationship between elected officials and managers. It aims to ensure a posteriori external control and a more effective internal control allowing elected officials, accountants and financial controllers to supervise the action of managers taking into account the efficiency of expenditure, performance, quality of service delivery and cost control.

Empirically, we used the primary data from a questionnaire administered to 1025 actors in the public expenditure chain in the following public institutions: the central and decentralized services of 26 ministerial departments, 04 municipalities and 14 companies and establishments public over the period from July 2020 to October 2020.

The results of the econometric regression reveal that the instruments for monitoring the execution of the program budget have a mixed effect on the efficiency of public expenditure. Indeed, if the indicators for measuring performance and the a priori controls of the quality of expenditure have a positive effect on the efficiency of investment and operating expenditure.

Others, such as the allocation of credits according to the expected results and costs, internal controls and ex post external controls of public expenditure, on the other hand, have a negative effect on the efficiency of investment and operating expenditure. The results of the estimates also reveal that the State of Cameroon does not achieve the best possible results with the available resources due to the insufficient maturation of the projects included in the public investment budget in terms of capital expenditure and the price list for current expenditure. On the other hand, the efficiency of capital expenditure is improved by public procurement procedures.

The study argues for the strengthening of budgetary controls and the refinement of indicators for measuring results. Thus, in terms of control, we recommend that the sectoral ministries put in place monitoring systems that can allow traceability of expenditure on the one hand, and on the other hand, to compare the performance of the services and the resources actually received. We also recommend a deepening of parliamentary controls of the execution of public expenditure. With regard to performance measurement indicators, we recommend that they be sufficiently refined so that they truly provide information on program objectives. These indicators should be simple and measurable and resources should be allocated each year for the information and monitoring of these indicators.

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