IMAGE: A MAP OF THE STARS OF THE ORION CONSTELLATION

JournalPreview

London Journal of Research in Management and Business

Volume 23 | Issue 6 | Compilation 1.0

Great Britain Journals Press

WWW.JOURNALSPRESS.COM

© COPYRIGHT GREAT BRITAIN JOURNALS PRESS

JournalPreview

LONDON JOURNAL RESEARCH IN MANAGEMENT AND BUSINESS

This document is a pre-published view of London Journal of Research in Management and Business Volume 23, Issue 6 and Compilation 1.0. For any minor changes and updations kindly follow your paper's live editing URL given in sent email or get in touch with our support team at support@journalspress.com or visit our website to use live chat support. This is a beta document thus order, content or existence of papers may alter in the published eJournal. You are requested to kindly acknowledge and approve your research paper in this JounalPreview within three days.

THIS IS A CONFIDENTIAL DOCUMENT UNDER A SOLE COPYRIGHT OF GREAT BRITAIN JOURNALS PRESS. IT IS STRICTLY PROHIBITED TO SHARE THIS DOCUMENTS OR ITS COPY IN ANY FORMATE WITH OTHERS OR IN PUBLIC WITHOUT PRIOR PERMISSION OF GREAT BRITAIN JOURNALS PRESS. THIS WILL BE A DIRECT VIOLATION OF TERMS AND CONDITIONS.

Journal Content
In this Issue

Great Britain Journals Press

© 2023 Great Britain Journals Press

Scan to know paper details and
author's profile

Liquidity Management and Profitability of Microfinance Institutions (MFIs) in the Midst of the Anglophone Crisis in Cameroon: Case of MFIs Affiliated to MC2 Operating in the Crisis Zones of Cameroon

Parveen Ngum N

University of Bamenda

ABSTRACT

Microfinance is a means of the struggle against poverty in developing countries in general and Cameroon in particular through financing activities that generate incomes for poor households especially those in the region hit by the Anglophone crisis. In order for these MFIs to continuously maintain their objective of poverty reduction, they need to be financially sustainable and liquidity management plays a very vital role in ensuring the sustainability of MFIs by guaranteeing profitability.

This paper tries to examine if liquidity management affects the profitability of MFIs affiliated to MC² in the midst of the ongoing Anglophone crisis especially MFIs operating in the crisis zones of Cameroon. Profitability was measured using return on asset, while Liquidity management was measured using cash ratio, current ratio and liquidity ratio. Data was collected from 70 MFIs affiliated to MC² which are located in the crisis zones and a methodology based on the estimation of panel data for the retained model and SPSS 11.0 was used to analyze data.

Keywords: liquidity, microfinance, profitability, cash.

Classification: JEL: G21

Language: English

Great Britain Journals Press

LJP Copyright ID: 146441
Print ISSN: 2633-2299
Online ISSN: 2633-2302

London Journal of Research in Management and Business

Volume 23 | Issue 6 | Compilation 1.0

© 2023. Parveen Ngum N. This is a research/review paper, distributed under the terms of the Creative Commons Attribution-Noncom-mercial 4.0 Unported License http://creativecommons.org/licenses/by-nc/4.0/), permitting all noncommercial use, distribution, and reproduction in any medium, provided the original work is properly cited.

Liquidity Management and Profitability of Microfinance Institutions (MFIs) in the Midst of the Anglophone Crisis in Cameroon: Case of MFIs Affiliated to MC2 Operating in the Crisis Zones of Cameroon

Parveen Ngum N

ABSTRACT

Microfinance is a means of the struggle against poverty in developing countries in general and Cameroon in particular through financing activities that generate incomes for poor households especially those in the region hit by the Anglophone crisis. In order for these MFIs to continuously maintain their objective of poverty reduction, they need to be financially sustainable and liquidity management plays a very vital role in ensuring the sustainability of MFIs by guaranteeing profitability.

This paper tries to examine if liquidity management affects the profitability of MFIs affiliated to MC² in the midst of the ongoing Anglophone crisis especially MFIs operating in the crisis zones of Cameroon. Profitability was measured using return on asset, while Liquidity management was measured using cash ratio, current ratio and liquidity ratio. Data was collected from 70 MFIs affiliated to MC² which are located in the crisis zones and a methodology based on the estimation of panel data for the retained model and SPSS 11.0 was used to analyze data. The results show that there is a negative and significant effect of liquidity ratio on the profitability of MFIs, there is a negative but insignificant effect of current ratio on the profitability of MFIs, and it is seen that cash ratio significantly enhances MFI profitability. In addition, the coefficient of rural zone of residence was found to be negative (-0.00160) which implies that rural residence negatively affects MFI profitability. Overall, the applied model was globally significant at 1% level. Thus, liquidity management captured by liquidity ratio, current ratio and cash ratio alongside size of the MFI, Zone of residence and lending interest rate significantly explained MFIs profitability in the crisis zone. Based on the study's findings, it is highly recommended that MFIs in the crisis zones of Cameroon must develop appropriate strategies to manage their liquidity in order to enhance their profits.

Keywords: liquidity, microfinance, profitability, cash.

Author: (PhD-Finance, UDs) University of Bamenda, School of Higher Institute of Commerce and Management, Department of Money and Banking.

I. INTRODUCTION AND JUSTIFICATION OF THE RESEARCH

Liquidity management is an important tool for the management of MFIs; it reflects the organization's ability to repay short-term liabilities. Amengor (2010) defines liquidity MFIs as its ability to fund all contractual obligations as they fall due. These obligations may include lending and investment commitments and deposit withdrawals and liability maturates, in the normal course of business. The main objective for any MFIs is to reduce poverty and in order to do so, they need to be financially sustainable.

London Journal of Research in Management and Business

© 2023 Great Britain Journals Press

Microfinance is a means of the struggle against poverty in developing countries in general and Cameroon in particular through financing activities that generate incomes for poor households. In order for these MFIs to continuously reach out to the poor and maintain their objective of reducing poverty, they need to be financially sustainable and liquidity management plays a very vital role in ensuring the sustainability of MFIs by guaranteeing profitability.

Microfinances were created with the main objectives of providing petite credit to women and low-income earners who were excluded from the formal banking system because they could not provide the collateral security that were demanded by these big banks. These women took these micro loans to do small businesses which could generate income for their households.

The industry's success in meeting the needs of its target clientele has resulted from its ability to overcome a lot of the barriers above which previously prevented poor and low-income earners from using formal financial services. In order for these MFIs to continuously reach out to the poor they need to manage their liquidity properly so as to stay sustainable. The issue of liquidity management is increasingly becoming problematic to many MFIs especially during this crisis period in Cameroon.

Many individuals who used to save heavily in MFIs were big business people and they in turn take heavy loans to run their businesses with but majority of them have now fled to other regions of the country for safety purpose while majority of those remaining in the crisis zones are the low income earners who are struggling to make ends meet and as such the saving rate has drop drastically and many of them are even afraid to take loans to do petite trade because of fear due to frequent lock downs, ghost towns, gun shoot in this crisis zones.

MFIs generally try to keep or maintain sufficient funds to meet unexpected demands from depositors, given they primarily deal with poor and low-income earners. Possible fallout of the crisis is an increase in the volume of nonperforming loans of financial institutions, as businesses have gone bankrupt, farmers have been unable to cultivate effectively due to difficulty in accessing farm lands, and the region's population and number of small business owners has reduced greatly. MFIs have struggled to survive, and some MFI branches have even shutdown in many areas due to the ongoing Anglophone. MFIs' profits have dropped in many cases. Nonetheless, there still exist lots of profitable investment opportunities in the region and beyond. While some MFIs have struggled to cope, others have opened new branches and recorded huge successes. One of the factors which may account for the sustainability of MFIs as seen in past research is proper liquidity management. In Cameroon in general and Northwest and Southwest in particular in the midst of the ongoing Anglophone crisis, whether or not liquidity management contributes to the profitability of MFIs remains largely unproven.

In order to seek for answers, the following research questions have been posed;

- What is the effect of liquidity management on the profitability of MFIs affiliated to MC²in the midst of the ongoing Anglophone crisis?
- What is the effect of the cash ratio on the profitability of MFIs affiliated to MC² in the midst of the ongoing Anglophone crisis?
- What is the effect of the current ratio on the profitability of MFIs affiliated to MC² in the midst of the ongoing Anglophone crisis?
- What is the effect of the liquidity ratio on the profitability of MFIs affiliated to MC² in the midst of the ongoing Anglophone crisis?

In order to answer the above mentioned research questions, the following hypothesis has been formulated in this paper:

© 2023 Great Britain Journals Press

- H_{01}: The cash ratio has no significant effect on the profitability of MFIs affiliated to MC² in the midst of the ongoing Anglophone crisis?
- H_{02}: The current ratio has no significant effect on the profitability of MFIs affiliated to MC² in the midst of the ongoing Anglophone crisis?
- H_{03}: The liquidity ratio has no significant effect on the profitability of MFIs affiliated to MC² in the midst of the ongoing Anglophone crisis?

This Paper will be organized as follows; 1: Introduction and justification of the research, 2: Literature Review, 3: Research Method and Specification of Model, 4: Data Analysis and Discussion of Findings and 5: Conclusion, Recommendations And Policy Implications.

II. LITERATURE REVIEW

2.1 Concept of Liquidity and Liquidity Management

2.1.1 Liquidity

Liquidity is important in financial services as it has an effect on the service provider's ability to meet daily withdrawals by clients (Francis, 2016). MFIs for example should have sufficient number of profitable assets in order to pay dividends to their shareholders and still be able to transfer to reserve. Liquid assets are important to have in times of crisis or emergency because they can be readily converted into cash. Without liquidity, money can become tied up in systems that are difficult to cash out of and even more difficult to assess for actual cash value (Chaplin et al., 2000).

Liquidity is the term mostly used to illustrate how easy it is to change both fixed and current assets to cash. The most liquid short term asset and what everything else is compared to is cash. This is can be explained by the fact that it can be used easily and immediately. Assets that can be converted to cash quickly are important to have in times of crisis or emergency especially in the ongoing Anglophone crisis in the Northwest and South west regions of Cameroon because they are readily converted into cash. During times of financial needs, large financial institutions close down due to lockdowns, ghost town, etc making it difficult for their customers to access the cash they need to buy basic needs like food, gasoline and other emergency supplies (Chaplin, Emblow & Michael, 2000).

No universally accepted definition has been fronted on liquidity; some scholars have defined it as the ability of a firm to ensure the availability of funds to meet its short term obligations. In the business of financial institutions, it can also be defined as its capacity to fund an increase in assets and meet both expected and unexpected cash and collateral obligations at a reasonable cost and without incurring unacceptable losses.

2.1.2 Liquidity Management

According to Choudhry (2011), liquidity management refers to the funding of deficits and investment of surpluses, managing and growing the balance sheet, as well as ensuring that the bank operates within regulatory and stipulated limits. Ideal bank management is an uninterrupted endeavour of assuring that a balance exists between liquidity, profitability, and risk (Banks, 2014). MFIs indeed require liquidity since such a large proportion of their liabilities are payable on demand (deposits) but typically the more liquid an asset is, the less it yields.

Liquidity management is inversely related to the performance of banks (Bassey, 2015). A liquidity management crisis was evident in the global financial crisis of 2007–08 (Dullien, 2010). This was the worst financial crisis raising fundamental questions about liquidity management (Basel Committee on Banking Supervision, 2013). During the crisis, banks were hit hardest by liquidity management

© 2023 Great Britain Journals Press

pressures cutting back sharply (Basel Committee on banking supervision, 2013). Major commercial banks like Lehman Brothers collapsed. Other banks were bailed out by the governments. The impact on the stock market was very severe as stocks shed prices (Basel Committee on Banking Supervision, 2013). In many areas the economy faced a huge financial blow, resulting in house evictions, foreclosures and prolonged unemployment (Basel Committee on Banking Supervision, 2013). The crisis underscored the role of liquidity management in commercial banks (Basel Committee on Banking Supervision, 2013).

2.2 Profitability of MFIs

Profitability is the ability to make surplus from all activities of an institution. It measures management efficiency in the use of organizational resources in adding value to the institution. Profitability may be regarded as a relative term measurable in terms of profit (surplus) and its relation with other elements that can directly influence the profit. Profitability is the relationship of income to some balance sheet measure which indicates the relative ability to earn income on assets.

The issue of institution's profitability and performance efficiency has been considered in a number of theoretical and empirical researches of different kinds. However, return on assets (ROA) and return on equity (ROE) have always been mentioned among the main indicators characterizing organisation's profitability.

Return on Assets (ROA) is the ratio of net income to total assets (Khrawish, 2011). It measures the ability of the MFI's management to generate income by utilizing MFIs' asset at their disposal. In other words, it shows how efficiently the resources of the MFIs are used to generate the income.

Return on Equity (ROE) is a financial ratio that refers to how much profit a company earned compared to the total amount of equity invested or found on the balance sheet. Thus, the higher the ROE the better the MFIs is in terms of profit generation.

III. RESEARCH METHOD AND METHODOLOGY

3.1 Scope and Area of Study

The data set contains general information on liquidity data, profitability data from 70 MFIs affiliated to MC². We are going to use a cross sectional data collected from audited MFIs end of year financial statements for the year 2019. Let us mention that the sample was drawn from the population of Cameroon MFIs which is about 488 microfinances from which we limited ourselves to those affiliated to MC² which we had access to information of 70 MFIs affiliated to MC². Data were collected from secondary sources (balance sheet, trial balance, income and expenses statement, prudential ratios status document as prepared and validated by the Board of Directors of MC². The choice of Mutuelle Communautaires de Croissance (or MC²) was motivated by the fact that MFIs affiliated to this network are mostly found in rural areas than urban areas, where many individuals have fled to other part of the region due to the ongoing Anglophone crisis that is really intense in rural areas of the crisis zones and given the fact that most of the poor population are found in the rural areas, we will be able to get a better picture when analyzing the liquidity management and profitability of MFIs.

3.2 An Insight of MC2 Network

Launched in 1992, the activity of the "MC²" aims at endowing the village communities with rural development micro banks created and managed by their members, in the respect of the socio-cultural values. The "MC²" propose to the populations adapted solutions in order to overcome their problems of access to the financial services and permit them to improve their living conditions in a sustainable manner. It is a question of an endogenous approach of development which permits the underprivileged

© 2023 Great Britain Journals Press

populations to create wealth. As any microfinance institution, the "MC²" have a two-fold objective. An economic objective which concerns their financial viability and a social objective which is that of reaching the poorest levels of the populations by financing small and micro activities.

The "MC²" are institutions of first category[1] sponsored by Afriland First Bank which plays at the same time the role of a commercial bank and provides the technical assistance in partnership with the NGO "ADAF" (Appropriate Development for Africa Foundation).

On the 31st December 2007, there were 66 operational "MC²". On this same date, the network deals directly with 82 280 individuals, 9 844 groups and associations and indirectly with about 574 480 persons. The total amount of deposits is 11, 87 billions of CFA Francs, the capital raised in the "MC²" amounts to 2, 36 billions of CFA Francs. A total amount of 25, 43 billions of CFA Francs has been granted in a form of loans since 1992 (ADAF, 2008). The flexibility of the "MC²" as well as its adaptability to each socio-cultural context permits its fast introduction in the different milieu which experience poverty problems and which the populations have chosen to become members in order to emerge from poverty.

3.3 Methods of Data Analysis

The methodology we are going to adopt in this paper will be based on the estimation of panel data for the retained model. As compared to a transversal study, this estimation by panel permits to better analyse the heterogeneity among enterprises. The estimation by panel data reduces the error margin of estimation and multicolinearity, and also permits for a better description of the complexity of the behaviour of each of the studied MFIs. It takes into consideration, at least two dimensions: in space and in time. The regression model used is in function of panel characteristics. According to Saunder et al (2007), every statistics to describe a data usually summarizes the information in the data by disclosing the average indicators of the variables used in the study. Data collected from secondary source was compiled, sorted, edited, classified, coded and analysed using a computerised data analysis package known as SPSS 11.0.

3.4 Specification of the Model

The study employs the multiple regression models shown below. The indicators of profitability are used to develop different functions relating to liquidity management as shown below:

$$\text{Profitability of MFIs} = f(\text{Liquidity Management}) \quad (1)$$

Following from equation (1) above, the profitability of MFIs (π) is measured using Return on Assets (ROA). Liquidity Management (LM) is broken down in to Cash Ratio (CR), Current Ratio (CCR) and Liquidity Ratio (LR) as seen in the equations below:

$$\pi = f(CR, CCR, LR) \quad (2)$$

The Lending Interest Rate (LIR), Size of Microfinance Institutions (SMFI) and Rural Residence (RR) are the control variables used. Considering the importance of the intercept, coefficients to be estimated and error term, the econometrics equation for the model becomes:

$$\pi = \beta_o + \beta_1 CR_i + \beta_2 CCR_i + \beta_3 LR_i + \beta_4 LIR_i + \beta_5 SMFI_i + \beta_6 RR_i + \varepsilon$$

Where
π is the profitability of MFIs, measured using Return on Assets (ROA)
CR = Cash Ratio
CCR = Current Ratio

[1] The regulation n°01/02/CEMAC/UMAC/COBAC relative to the exercise of the microfinance activities in Central Africa states in its section 7 that the IMF of the first category treat only with their members.

© 2023 Great Britain Journals Press

LR = Liquidity Ratio
LIR = Lending Interest Ratio
SMFI = Size of the MFI
RR = Rural Residence
β_1, β_2, β_3, β_4, β_4, β_5, β_6, are the coefficients to be estimated
ε_i = the Error term

IV. DATA ANALYSIS AND DISCUSSION OF FINDING

4.1 Descriptive Statistics

Table 4.1: Below gives a summary of descriptive characteristics of variables included in the model of MFI's captured by the number of active members. Found in the table are the number of observations, the mean, standard deviation, minimum value and maximum value of all the variables included in the model.

Table 4.1: Summary of Descriptive Statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
ROA	70	0.0671737	0.0389883	0.005365	0.1489635
Liquidity ratio	70	3.658042	8.760165	-7.4275	49.0548
Current ratio	70	0.06401	0.4645678	-3.2342	1.4073
Cash ratio	70	0.0465113	0.313510	-1.0505	0.3993
Size of MFI (Ln total assets)	70	19.53128	1.868639	15.57032	23.66528
Rural residence	70	0.7957143	0.4532886	0	1
Lending interest rate	70	0.1848637	0.3907462	0.033409	0.259745

Source: Computed by the author

Results from table 4.1 indicate that on average, sampled MFIs affiliated to MC^2 in the crisis zone in Cameroon had an average return on assets rate of 6.71% (0.0671737) with a standard deviation of 0.0389883 implying that there is low variability of return on assets (proxy for financial performance) across MFIs sampled with the smallest credit union having only 0.005365 (0.53%) return on assets while the most performant had 0.1489635 (14.89%). This result simply illustrates the fact that there is a moderate disparity of credit unions in the sample in terms of profitability. In addition, the average value of liquidity ratio in the sample is 3.658042 with a standard deviation 8.760165 which is greater than the mean revealing that there is a very high dispersion of liquidity ratio in the sample. Values of liquidity ratio in the sample fluctuate between -7.4275 and 49.0548.

In terms of current ratio, results from descriptive analysis show that the average current ratio in the sample is 0.06401 and a standard deviation of 0.4645678 indicating a moderate variability around the mean value with values ranging from -3.2342 indicating very poor coverage of current assets by current liability to 1.4073. The average cash ratio in the sample is 0.0465113 with a standard deviation of 0.3135103 indicating wide dispersion of values around the mean value. Values of cash ratio range from -1.0505 to 0.3993.

© 2023 Great Britain Journals Press

The mean value of size of the MFIs measured by total assets is 19.53128 and its standard deviation is 1.868639. These results show that there is great disparity in terms of size of MFIs ranging from a minimum value of 15.57032 to a maximum value of 23.66528. Also, 79.57% of the sample was made up of MFIs which are based in rural areas of the Region given that the mean value of rural residence is 0.7957143 as against 20.43% of the MFIs in urban zone of residence. On average the lending interest rate in the sample is 18.48% (0.1848637) which reveals that the interest rate of MFIs in crisis zone is moderate with values ranging from 0.033409 (3.34%) to 0.259945 (25.99%) per annum.

4.2 Correlation Analysis

Table 4.2: displays the results of the pairwise correlation between the variables used in the regression analysis. This is a prelude to the regression analysis in order to be sure that there is no strong correlation among the independent variables which is a presumption to the problem of multicollinearity.

Table 4.2: Pairwise Correlation Matrix of Variables

	Roa	Liq	cur	car	Size	rural	lir
Roa	1.0000						
Liq	-0.1543	1.0000					
	(0.2020)						
Cur	0.1728	0.0389	1.0000				
	(0.1526)	(0.7492)					
Car	0.3048	0.0448	0.8499	1.0000			
	(0.0103)	(0.7126)	(0.0000)				
Size	0.5757	-0.0470	0.0546	0.1851	1.0000		
	(0.0000)	(0.6994)	(0.6534)	(0.1251)			
Rural	-0.1572	0.1112	-0.0898	-0.1269	-0.3427	1.0000	
	(0.1937)	(0.3592)	(0.4598)	(0.2953)	(0.0037)		
Lir	-0.1060	-0.0493	-0.3410	-0.5670	-0.1728	0.0693	1.0000
	(0.3822)	(0.6854)	(0.0039)	(0.0000)	(0.1526)	(0.5688)	

Note: P-values in parentheses
Source: Computed by the author

From the table above, it can be observed that there is no serious correlation between the variables. A low or very low positive and negative correlation was noted between all the variables included in the model. However, very strong positive correlation was observed between the cash ratio and current ratio as the correlation coefficient stands at 0.8499. In order to ascertain that multicollinearity is not a major concerned in the model, a formal test of multicollinearity known as the Variance Inflation Factors (VIF) test is further conducted and results are displayed in table 4.3 below.

© 2023 Great Britain Journals Press

Table 4.3: Variance Inflation Factors (VIF)

Variable	VIF	1/VIF
Cash ratio	5.36	0.186567
Current ratio	4.42	0.226244
Lending interest rate	1.91	0.523560
Size of MFI	1.03	0.970873
Rural residence	1.11	0.900901
Liquidity ratio	1.01	0.990099
Mean VIF	2.47	

Source: computed by the author

Result from the VIF test reveal that multicollinearity is not a major concern in the model since the mean VIF (2.47) is lower than the critical value of 2.5 and the values of individual do not exceed 10. Consequently, we can confidently assert that the model does not suffer from any major problem of multicollinearity.

4.4 Regression results

In order to investigate the effect of liquidity management on the profitability of MFIs in the crisis zones of Cameroon, we use the Ordinary Least Square estimation technique given the continuous nature of the dependent variables. Results of the Ordinary Least Squares (OLS) are presented in table 4. It should be noted that column one is the OLS results without accounting for possible threshold effect of the size of the MFI while in column 2 we account for the possible quadratic effect of MFI size by including the squared value of MFI size. As results reveal, including the squared value of size of MFI improved the goodness of fit of the model as the R square moves from 0.422 (42.2% of the variation in the dependent variable being explained by joint variation of all the regressors) to 0.502 (50.2%). Furthermore, including the squared value of size of MFI also improved the significance of the variables. Thus, results from column 2 are considered for interpretation.

Table 4.4: The Effect of Liquidity management on MFI Profitability

	(1)	(2)
VARIABLES	ROA	ROA
Liquidity ratio	-0.000455	-0.000585**
	(0.000309)	(0.000292)
Current ratio	-0.0139	-0.00823
	(0.0129)	(0.0122)
Cash ratio	0.0666**	0.0626**
	(0.0294)	(0.0276)
Size of MFI	0.00865***	0.0905***
	(0.00167)	(0.0261)
Size squared		-0.00215***
		(0.000684)
Rural residence	0.00529	-0.00160
	(0.00696)	(0.00688)
Lending interest rate	0.0141	0.0178**
	(0.00904)	(0.00855)
Constant	-0.115***	-0.882***

© 2023 Great Britain Journals Press

	(0.0345)	(0.246)
Observations	70	70
R-squared	0.422	0.502
Prob > F	0.0000	0.0000

*Note: *, ** and *** refers to significant at 10%, 5% and 1%*

Source: Computed by the author

Results from table 4.4 shows that the coefficient of liquidity ratio is negative (-0.000585) which implies that there is a negative effect of liquidity ratio on the profitability of MFIs. Said otherwise, liquidity ratio and return on assets evolve in opposite direction. Specifically, a unit point increase in liquidity ratio will lead to about 0.0006 percentage point fall in return on assets of MFIs. This result is statistically significant at 5% level. Thus, there is a negative and significant effect of liquidity ratio on the profitability of MFIs in the crisis zones of Cameroon.

Further results indicate that current ratio also negatively relates with profitability of MFIs given that the coefficient of current ratio is negative (-0.00823). In effect, a unit point increase in current ratio will bring about 0.008 percentage point fall in MFI return on assets. However, this result was found to be statistically insignificant given that the p-value exceeds 0.1 (10%). In a nutshell, there is a negative but insignificant effect of current ratio on the profitability of MFIs, as findings indicate.

Results arising from table 4.4 reveal that, unlike the previous two results, there is a positive effect of cash ratio on the profitability of MFIs, given that the coefficient of cash ratio was found to be positive (0.0626). Precisely, an increase in cash ratio by one point will lead to an increase in return on asset ratio by 0.06 percentage point everything else held constant. This result is significant at 5% level. Therefore, it can be said that cash ratio significantly enhances MFI profitability.

Going by the control variables, results from the OLS estimation show that the coefficient of MFI size is positive (0.0905) which implies that there is a positive effect of size of the MFI on profitability. In other words, an increase in size of the MFI will bring about an increase in profitability ceteris paribus. Specifically, a unit percentage increase in total assets of MFI will result in about 0.09 percentage point increase in return on assets. This result is significant at 1% level. Furthermore, the coefficient of size squared was found to be negative (-0.00215) and statistically significant at 1% level as well. This outcome shows that there is a quadratic effect of MFI size on MFI profitability. Said otherwise, the size of the MFI positively affect profitability as it increases up to a maximum turning point where the size of the MFI begins to have a negative effect on MFI profitability. Thus, there is an inverted U shape relationship between size of MFI and MFIs profitability.

In addition, the coefficient of rural zone of residence was found to be negative (-0.00160) which implies that rural residence negatively affects MFI financial profitability. In effect, belonging to the rural area reduces profitability by 0.002 points everything else held constant. However, it should be noted that this finding is not significant. Thus, there is a negative but insignificant effect of zone of residence on the profitability of MFIs.

The coefficient of lending interest rate is positive (0.0178) as shown by table 4.4 above. This result indicates that lending interest rate relates positively with return on assets as a proxy for profitability of MFIs. Specifically, a unit increase in lending interest rate will lead to about 0.02 point increase in return on assets. Moreover, it should be noted that this result is significant at 5% level. Thus, there is a positive and significant effect of lending interest rate on the profitability of MFIs.

Overall, the applied model was globally significant at 1% level as the probability value of the Fischer statistics (0.0000) is far below 0.01 (1%). Thus, liquidity management captured by liquidity ratio,

© 2023 Great Britain Journals Press

current ratio and cash ratio alongside size of the MFI, Zone of residence and lending interest rate significantly explained MFIs profitability in the North West and South West Regions of Cameroon. Given an R-square coefficient of 0.502, it can be seen that 50.2% of changes in profitability is explained by a simultaneous variations of all the independent variables included in the model. Also, the Breusch Pagan test reveal that the model was homoscedastic as the p-value of the test (0.7898) far exceeds 10% which permits us to accept the null hypothesis of constant variance of residuals.

4.4 Discussion of Findings

The first objective of this paper was to examine the effect of liquidity ratio on the profitability of MFIs. Results from data analysis indicate that there is a negative significant effect of liquidity ratio on MFIs profitability in the study area. Based on this result we reject the first hypothesis of the study which postulates that there is no significant effect of liquidity ratio on MFIs profitability. It should however be noted that this results is contrary to a priori expectation. However, this outcome can be backed by the Baumol (1952) theory of cash management. According to Baumol (1952), cash management enables companies to find the optimum level of cash to hold under conditions of certainty. A negative significant effect of liquidity ratio on profitability may be a sign of credit rationing in MFIs which may be manifested though low level of loan distributed and over liquidity of MFIs. As such, failure to reach appropriate level of liquidity may later on translate into very low level of income from loan and poor level of profitability. These results also corroborates the finding of Bordeleau et al. (2009) who found that there is a non-linear-relationship between liquidity and financial performance of banks in the United State, whereby profitability is improved for institutions that hold some liquid assets. However, there is a point beyond which holding further liquid assets diminishes institutions' profitability, all else equal. Therefore, a negative and significant effect of liquidity ratio may simply indicate that MFIs of the crisis zones of Cameroon have reached the diminishing return phase of the nonlinear relationship between liquidity and profitability as shown by Bordeleau et al. (2009). This finding is also in line with the result of Maaka (2013) who found a negative significant effect of liquidity on MFIs profitability in Kenya. If liquid assets are held excessively, profitability could diminish because they have no or little interest-generating capacity. The opportunity cost of holding low return assets would eventually outweigh the benefit of any increase in the institution's liquidity resilience as perceived by markets (Mashhad, 2012).

The second objective of this study was to examine the effect of current ratio on the profitability of microfinance institutions. In line with this objective, results show that there is a negative but insignificant effect of current ratio on the profitability of MFIs. Thus, we fail to reject the second hypothesis of the study which states that there is no significant effect of current ratio on the profitability of MFIs. This result is contrary to a priori expectation and corroborates the finding of Kamoyo (2006) who found a negative but insignificant effect of liquidity management on profitability of MFIs in Kenya.

The third objective of the present study was to assess the extent to which cash ratio affect the profitability of MFIs. As expected, results from the OLS estimation reveal that cash ratio significantly enhances the profitability of MFIs. Thus, we reject the third hypothesis of the study which claims that cash ratio has no significant effect on the profitability of MFIs. This result is in conformity with a priori expectation and also conforms to the finding of Ongore and Kusa (2013) who found that cash ratio exerts a positive and significant effect on the profitability of commercial banks in Kenya.

Going by the control variables, results from data analysis indicate that there is a significant inverted U shape relationship between size of the MFI and the profitability. This result suggests that, as the MFI size increases, it enjoys some economies of scale in the distribution of financial services. It reaches an optimal critical (maximum point in this case) point after which further increase in size (measured by

© 2023 Great Britain Journals Press

total assets) will rather lead to diseconomies of scale in the distribution of financial services to the public. This result is in line with the too big to manage hypothesis which shows that as the microfinance becomes too big, the management may lack necessary expertise to efficiently manage the institution. This outcome is in line with the findings of Kaplan (2011) who found a nonlinear inverted U shape relationship between size of MFI and profitability of MFIs in WAEMU. This result also partially confirms the finding of Akume and Badjo (2017) who found a negative effect of size on efficiency of MFIs in Cameroon.

V. CONCLUSION, RECOMMENDATION AND POLICY IMPLICATION

5.1 Conclusion

Microfinance was developed as an alternative to traditional banking system for those who are excluded from the later. The main objective of this paper was to examine the effect of liquidity management on the profitability of MFIs in the crisis zones of Cameroon. In order to achieve this objective, data was collected from 70 microfinance operating in the crisis zone for the year 2019. The data was later analysed using the Ordinary Least Squares. Results from data analysis revealed that there is a negative effect of liquidity ratio and current ratio on MFIs profitability while cash ratio was found to exert a positive effect on profitability. However, only liquidity ratio and cash ratio were found to be statistically significant. Going by the control variables, results from data analysis indicates that there is a significant inverted U shape effect of size of the MFI on profitability. In addition, lending interest rate was found to enhance profitability significantly whereas there is a negative but insignificant effect of rural zone of residence on the profitability of MFIs.

5.2 Conclusion, Recommendations and Policy Implication

5.2.1 Conclusion

The main objective of this paper was to find out if liquidity management affects the profitability of MFIs affiliated to MC² operating in the crisis zones of Cameroon. Profitability was measured using return on asset, while Liquidity management was measured using cash ratio, current ratio and liquidity ratio. Data was collected from 70 MFIs affiliated to MC² which are operating in the crisis zone and a methodology based on the estimation of panel data for the retained model and SPSS 11.0 was used to analyze data. Conclusively, it is seen that there is negative effect of liquidity ratio and current ratio on MFIs profitability while cash ratio was found to exert a positive effect on profitability. So it can be concluded that as liquidity increases, profitability decreases due to less loans granted. Again, the findings shows that more cash is been held idle by microfinance institutions. It is suggested that, more loans should be giving out to customers which will intern reduces liquidity there by increasing profitability in microfinance institutions.

5.2.2 Recommendations and Policy Implication

Based on the findings above, it is recommended that there is a need to invest the excess of liquidity (cash) available at the MFIs, in various aspects of investments in order to increase the MFIs' profitability and to get benefits from the time value of the available money.

Also the MFIs should adopt a general framework for liquidity management to assure a sufficient liquidity for executing their works efficiently. There is need for MFIs to engage competent and quality personnel. The right personnel will ensure that the right decisions are made especially with the optimal level of cash and treasury bills and certificates to keep. The MFIs need to be more aggressive in the area of profit enhancement.

© 2023 Great Britain Journals Press

The study also strongly recommends that MFIs in crisis zones of Cameroon should develop effective and efficient strategies with good policies that will improve the quality of their loans liquidity management in order to improve their profitability. The Management of MFIs should improve on the capacity building of their workers through constant training, workshops and seminars that will equip them with best practices on liquidity management which will enhance profitability. Quarterly evaluation management meetings should be held to assess and evaluate their performance.

Conflicts of Interest

The author declares no conflicts of interest regarding the publication of this paper

REFERENCES

1. Adalsteinsson, G. (2014). *The Liquidity Risk Management Guide: From policy to pitfalls*. Sussex: John Wiley and Sons.
2. Adeyinka, S. (2013). *Capital Adequacy and Banks' Profitability*: An Empirical Evidence from Nigeria, *American International Journal of Contemporary Research* 1(3), pp. 10-29
3. Akume, D., & Badjo, M. A. (2017). *The Performance of Microfinance Institutions in Cameroon: Does Financial Regulation Really Matter?* Research Journal of Finance and Accounting, 8, 29-41. https://doi.org/10.1146/annurev-orgpsych-031413-091235
4. Anyanwu, J. C. (1993). *Monetary Economics: Theory, Policy and Institutions*. Benin City. Hybrid Professional Publishers Ltd,
5. Banks, E. (2014). *Liquidity risk: Managing funding and asset risk. Hampshire*: Palgrave Macmillan.
6. Bassey E.B., & Ekpo U.N (2018). Liquidity Management in Nigerian Deposit Money Banks.
7. Bassey, E.D (2017). Liquidity Management and Performance of Deposit Money Banks in Nigeria 1986
8. Basel Committee on Banking Supervision, (2008). Principles for Sound Liquidity Risk Management and Supervision. Bank for International Settlements. *Press & Communications*.
9. Ben Naceur, S., & Kandil, M. (2009). The impact of capital requirements on banks' cost of intermediation and performance: *The case of Egypt. Journal of Economics and Business, 61(1), 70-89*.
10. Bhattacharyya, I. & Sahoo, S. (2011). Comparative Statistics of Central Bank liquidity Management, Some insights, *Economic research International*, 3 (2), 34-56.
11. Bikker, J. A. (2010). Measuring performance of banks: an assessment. *Journal of Applied Business and Economics*, 11(4), 141-159.
12. Bourke, P. (1989). Concentration and other Determinants of Bank Profitability in Europe, North America and Australia. *Journal of Banking & Finance,* 13(1), 65-79.
13. Chaplin, G., Emblow, A. & Michael, I. (2000). Banking system liquidity: developments and issues, Financial stability Review, 6, 93-112.
14. Choudhry, M. (2011). An Introduction to Banking: Liquidity Risk and Asset and Liability Management.Sussex: John Wiley and Sons.
15. Dang, U. (2011). The CAMTEL rating system in banking supervision: a case study of Arcada University of Applied Sciences, International Business.
16. Diamond, W. & Rajan, G. (2001). Liquidity risk, liquidity creation, and financial fragility: a theory of banking, the Journal of Political Economy, 109, 287-327.
17. Demirgüç-Kunt, A., & Huizinga, H. (1999). Determinants of commercial bank interest margins and profitability: some international evidence. The World Bank Economic Review, 13(2), 379-408.

© 2023 Great Britain Journals Press

18. Demiguc-Kunt A, Levine R, Min HG. (1998). Opening for foreign banks: issues of stability, efficientcy and growth. In S. Lee, ed., the Implications of Global World Financial Markets. Seoul: Bank of Korea.
19. Eljelly, A. (2004). Liquidity-Profitability Tradeoff: An Empirical Investigation in an Emerging Market. *International Journal of Commerce & Management*. 14 (2),48-61.
20. Elloit, J.W., 1984, Money Banking and Finance Markets, West Publishing company, New york
21. Guru, B.K., Staounton, J., & Balashanmugam, B. (1999). Determinants of commercial bank profitability in Malaysia. Paper presented at the preceedings of the 12th Annual Australian Finance and Banking Conference, Sydney, Australia. December 16-17.
22. Ibe, S. O. (2015). The Impact of Liquidity Management on the Profitability of Banks in Nigeria. *Journal of Finance and Bank Management* 1(1) 67-88
23. Kargi, H.S. (2011). *Credit Risk and the Performance of Nigerian Banks*, Ahmadu Bello University, Zaria.
24. Kehinde, O. P. (2013). An Empirical Investigation of the Liquidity-Profitability Relationship in Nigerian Commercial Banks. *Journal of Economics and Sustainable Development, 6*(4) 69-87.
25. Landskroner, Y. & Paroush, J. (2011) "Liquidity Risk Management, Structure, and Competition in Banking"The Capco Institute Journal of Financial Transformation. Article no.33, pp.113-120.
26. Molyneux, P., & Thornton, J. (1992). Determinants of European bank profitability: A Note. *Journal of Banking & Finance*, 16(6), 1173-1178.
27. Nabeel1, M. & Hussain, S.M (2017). Liquidity Management and Its Impact on Banks Profitability: A Perspective of Pakistan. *International Journal of Business and Management Invention* 6 (5) 28 -33.
28. Naezeaku, N. C. (2006). *Theories and Practice of Financial Management*.Owerri. Ever Standard Publishing.
29. Ngwu, T. C. (2006). *Bank Management*. Owerri: Bob Publishers.
30. Niresh, J. A (2012). Trade-off Between Liquidity and Profitability. A Study of Selected Manufacturing Firms in Sri Lanka: *Journal of Arts and Science and Commerce*, 4 (2) 111-122.
31. Nwankwo G. O. (1991). *Bank Management Principles and Practices*. Lagos: Malthouse Press
32. Nwankwo, G. O. (1991*). Prudential Regulations of Nigerian Banking*. Lagos: University of Lagos.
33. Nzzotta , S. M. (2004.) *Money, Banking and Finance: Theory and Practice*. Owerri. .
34. Okaro, C.S. & Nwakoby C. N. (2016). Effect of Liquidity Management on Performance of Deposit Money, Bank of Canada, Working paper No. 2010-38.
35. Olagunju, A., David, A. O., & Samuel, O. O. (2012). Liquidity Management and Commercial Banks' Profitability in Nigeria. *Research Journal of Finance andAccounting,* 2(7-8), 24-38.
36. Olarewaju1, O.M. & Adeyemi, O.K (2015). Causal Relationship between Liquidity and Profitability. Journal of Banking and finance, 14 (1), 66-80.
37. Obi-Nwosu, V. O., Okaro, C.S, Ogbonna, K.S., & Atsanan, A.N (2017). Effect of liquidity on bank profitability. Bank of Canada Working Paper, (38), 6-22.
38. Otekunrin, A.O, Fagboro, G.D, Nwanji,T.I , Asamu, F.F, Ajiboye, B.O & Falaye, A.J (2019). Performance of deposit money banks and liquidity management in Nigeria. *Banks and Bank Systems*, 14(3) 144-161.
39. ONyekwelu, U.L., Chukwuani, V.N. and Onyeka, V.N. (2018) Effect of Liquidity on Financial Performance, Banking and financial markets, West Publishing Company, New York
40. Pandey, I. M. (2005). *Financial Management*. *Vikas Publishing House*. PVT Ltd New Delhi.
41. Robinson, M. (2003). The microfinance revolution: Sustainable finance for the poor. Vol. 1. Washington D.C.: World Bank.
42. Robinson Marguerite S(1998): The Paradigm Shift from credit Delivery to Sustainable Financial Intermediation, In Mwangi S Kimenyi, Robert C Wieland and J D Von F Pischke(eds), 1998, Strategic Issues in Microfinance. Ashgate Publishing: Aldershot.

© 2023 Great Britain Journals Press

43. Shen, C., Chen, Y., Kao, L. & Yeh, C. (2010). Bank liquidity risk and performance. International Monetary Fund, Working Paper.
44. Smilock, M. (1985). Evidence of the (Non) relationship between concentration and profitability in banking, Jpurnal of Money, Credit and Banking, 1, pp. 69-83.
45. Uremadu, S. (2012). Bank Capital Structure, Liquidity and Profitability Evidence from the Nigerian Banking System. *International Journal of Academic Research in Accounting, Finance and Management Sciences,* 8 (20)78-91.
46. Wen, Y.(2010). *Liquidity demand and welfare in a heterogeneous-agent economy*. Federal Reserve Bank of St Louis Working Paper 2010-009A.

© 2023 Great Britain Journals Press

Scan to know paper details and
author's profile

A Multiple Contracts Version of the SACRE

Clovis de Faro & Gerson Lachtermacher

ABSTRACT

Taking into consideration that the SACRE (system of increasing amortization in real terms), as originally instituted by "Caixa Econômica Federal", is not financially consistent, an exact procedure, denoted as SACRE*, was proposed in de Faro and Lachtermacher (2022). The present paper submits a multiple contract version of SACRE*. It is shown that, taking into account the financial institution cost of capital, it is always better to implement the multiple contracts approach.

Keywords: NA

Classification: LCC: QA76.76.D47

Language: English

Great Britain Journals Press

LJP Copyright ID: 146442
Print ISSN: 2633-2299
Online ISSN: 2633-2302

London Journal of Research in Management and Business

Volume 23 | Issue 6 | Compilation 1.0

© 2023. Clovis de Faro & Gerson Lachtermacher. This is a research/review paper, distributed under the terms of the Creative Commons Attribution-Noncom-mercial 4.0 Unported License http://creativecommons.org/licenses/by-nc/4.0/), permitting all noncommercial use, distribution, and reproduction in any medium, provided the original work is properly cited.

A Multiple Contracts Version of the SACRE

Clovis de Faro[α] & Gerson Lachtermacher[σ]

ABSTRACT

Taking into consideration that the SACRE (system of increasing amortization in real terms), as originally instituted by "Caixa Econômica Federal", is not financially consistent, an exact procedure, denoted as SACRE, was proposed in de Faro and Lachtermacher (2022). The present paper submits a multiple contract version of SACRE*. It is shown that, taking into account the financial institution cost of capital, it is always better to implement the multiple contracts approach.*

I. INTRODUCTION

In 1996, the "Caixa Econômica Federal" (CEF), which is the main institution for housing financing in Brazil, introduced a debt amortization scheme named "Sistema de Amortizações Reais Crescentes" – SACRE (system of increasing amortizations in real terms).

In its original version, this very peculiar amortization system is not financially consistent. Namely, even if all contractual payments are dutifully made, a residual debt remains, which must be paid in full by the borrower, usually one month after the end of the term of the contract.

Given that de Faro and Lachtermacher (2022) proposed a financially consistent variant of the SACRE, the purpose of this paper is to formulate a multiple contracts version of this system. Similar to cases of the adoption of either the constant payments scheme or the constant amortization scheme of debt financing, which were considered in De-Losso et al (2013) and in de Faro (2022), it will be shown that the financial institution granting the loan, depending on its cost of capital, may derive substantial income tax reductions in terms of present values.

II. THE CASE OF A SINGLE CONTRACT

Denoting by F the loan amount, and by i the periodic rate of compound interest , suppose that, in the case where a single contract is considered, it is stipulated by the financing institution granting the loan that the debt must be repaid in n periodic payments, in accordance with the SACRE scheme.

Since the SACRE scheme is a combination of the constant payments scheme with the constant amortization scheme, the number n of payments is divided into ℓ subperiods, each with m payments. The numbers n, ℓ and m are integer numbers with $n = \ell \times m$, and with m constant payments in each of the first $\ell - 1$ sub-periods.

Specifically, denoting by S_k the outstanding debt immediately after the k-th payment p_k has been made, where $k = 1, 2,..., n$ and $S_0 = F$, it is established that:

a) In the first subperiod, the m payments, p_k , are made constant with value P_1, in such a way that:

London Journal of Research in Management and Business

© 2023 Great Britain Journals Press

$$P_1 = p_1 = A_1 + J_1 = \frac{S_0}{n} + i \times S_0 = S_0 \times \left(\frac{1}{n} + i\right) = \frac{S_0}{n} \times (1 + n \times i) \tag{1}$$

where $P_1 = p_1 = p_k$, $for\ k = 1, 2,..., m$ with $A_1 = F/n$ denoting the parcel of amortization of the first payment p_1, and $J_1 = i \times S_0$ denoting the corresponding parcel of interest.

For the evolution of the outstanding debt, S_k, it is convenient to recall that, cf. de Faro e Lachtermacher (2012, p. 240):

$$S_k = (1 + i) \times S_{k-1} - p_k, \quad \text{for } k = 1, 2,..., n \tag{2}$$

Therefore, using the presumed recurrence method to determine the debtor's balance, we have:

$$S_m = S_0 \times (1+i)^m - \left\{P_1 \times \left[(1+i)^m - 1\right]/i\right\} = S_0 \times (1+i)^m - (P_1 \times \alpha) \tag{3}$$

where $\alpha = \left[(1 + i)^m - 1\right]/i$.

This relationship, in view of the value of P_1 presented in Equation 1, can be rewritten as:

$$S_m = \frac{S_0}{n} \times \left\{n - \left[(1+i)^m - 1\right]/i\right\} = \frac{S_0}{n} \times (n - \alpha) \tag{3'}$$

b) For the second sub period of constant installments, equal to P_2, that is, for k equal to m+1, m+2,...,2m, we have:

$$A_{m+1} = S_m / (n - m) \quad \text{and} \quad J_{m+1} = i \times S_m \tag{4}$$

with

$$p_{m+1} = A_{m+1} + J_{m+1} = S_m \times \left[1 + i \times (n - m)\right] / (n - m) \tag{5}$$

or

$$P_2 = p_k = S_m \times \left[1 + i \times (n - m)\right] / (n - m), \quad \text{for} \quad k = m + 1, m + 2,..., 2m \tag{5'}$$

Thus, recurrently, taking into account (2), it follows that:

$$S_{2m} = S_m \times (1+i)^m - P_2 \times \left[(1+i)^m - 1\right] / i = S_m \times (1+i)^m - P_2 \times \alpha \tag{6}$$

This relationship, in view of the value of P_2 presented in Equation 5', can be rewritten as:

$$S_{2m} = \frac{S_m}{(n-m)} \times \left\{(n-m) - \left[\frac{(1+i)^m - 1}{i}\right]\right\} = \frac{S_m}{(n-m)} \times (n - m - \alpha) \tag{6'}$$

or

© 2023 Great Britain Journals Press

$$S_{2m} = \frac{S_0 \times (n-\alpha) \times \left[(n-m) - \alpha \right]}{n \times (n-m)} \tag{6"}$$

c) Similarly, making $A_{2m+1} = S_{2m}/(n - 2m)$ and $J_{2m+1} = i \times S_{2m}$, we will have:

$$P_3 = p_k = S_{2m} \times \left[\frac{1 + i \times (n - 2 \times m)}{n - 2 \times m} \right], \text{ for } k = 2m+1, 2m+2, \ldots, 3m \tag{7}$$

Hence, recursively, considering (2), it follows that:

$$S_{3m} = S_{2m} \times (1+i)^m - P_3 \times \left[(1+i)^m - 1 \right] / i = S_{2m} \times (1+i)^m - P_3 \times \alpha \tag{8}$$

Where P_3 denotes the constant value of the m payments in the third subperiod.

Therefore:

$$S_{3m} = \frac{S_{2m}}{(n-2\times m)} \times \left\{ (n-2\times m) - \left[\frac{(1+i)^m - 1}{i} \right] \right\} = \frac{S_{2m}}{(n-2\times m)} \times (n - 2\times m - \alpha) \tag{8'}$$

or

$$S_{3m} = \frac{S_0 \times (n-\alpha) \times (n-m-\alpha) \times (n-2\times m-\alpha)}{n \times (n-m) \times (n-2\times m)} \tag{8"}$$

d) Proceeding in a similar manner, it can be depicted, as in de Faro and Lachtermacher (2022), that after $\ell - 1$ sub periods, the outstanding debt will be:

$$S_{(\ell-1)m} = S_0 \times \left\{ \prod_{j=1}^{(\ell-1)\times m} \left[\frac{n - (j-1) \times m - \alpha}{n - (j-1) \times m} \right] \right\} \tag{9}$$

At this point, as suggested in de Faro and Lachtermacher (2022), rather than being constant, the last m payments should decrease linearly in accordance with an arithmetic progression of ratio equal to $i \times S_{(\ell-1)}/m$, with $p_{(\ell-1)m+1} = S_{(\ell-1)m} \times (1 + i \times m)/m$, which is a procedure assured to be financially consistent whenever the interest rate, i, is less than 10% per month, and which is far above the current rates charged in the Brazilian house-financing system. Currently, the monthly rate is reflected at 1.5%.

In summary, the sequence of the first $n - m$ payments will be as follows:

© 2023 Great Britain Journals Press

$$p_k = \begin{cases} P_1 = S_0 \times (1+n\times i)/n, \text{ for } k = 1,2,\ldots,m \\ P_2 = \dfrac{S_0 \times (n-\alpha)\times \left[1+i\times (n-m)\right]}{n\times (n-m)}, \text{ for } k = m+1, m+2,\ldots,2m \\ P_3 = \dfrac{S_0 \times (n-\alpha)\times (n-m-\alpha)\times \left[1+i\times (n-2m)\right]}{n\times (n-m)\times (n-2m)}, \text{ for } k = 2m+1, 2m+2,\ldots,3m \\ \vdots \\ P_{(\ell-1)m} = \dfrac{S_0 \times \left\{1+i\times \left[n-(\ell-2)\times m\right]\right\}}{n-(\ell-2)\times m} \times \left[\prod_{j=1}^{\ell-2} \dfrac{n-(j-1)\times m-\alpha}{n-(j-1)\times m}\right] \\ \quad \text{for } k = (\ell-1)m+1,\ldots,n-m \end{cases} \tag{10}$$

With the last m payments given as:

$$p_k = S_{(\ell-1)m} \times \left\{1+i\left(n-k+1\right)\right\}/n, \text{ for } k = n-m+1, n-m+2,\ldots,n \tag{11}$$

With regard to the sequence of the parcels of amortization, it should be noted that, as shown in de Faro and Lachtermacher (2012, p. 243), and similar to the case of the constant payments scheme, the parcels of amortization, in each set of constant payments, follow a geometric sequence of ratio equal to $1+i$.

Accordingly, we have:

$$A_k = \begin{cases} S_0 \times (1+i)^{k-1}/n, \text{ for } k = 1,2,\ldots,m \\ \dfrac{S_0 \times (n-\alpha)\times (1+i)^{k-m-1}}{n\times (n-m)}, \text{ for } k = m+1, m+2,\ldots,2m \\ \dfrac{S_0 \times (n-\alpha)\times (n-m-\alpha)\times (1+i)^{k-2m-1}}{n\times (n-m)\times (n-2m)}, \text{ for } k = 2m+1, 2m+2,\ldots,3m \\ \vdots \\ S_0 \times \left\{\prod_{j=1}^{(\ell-2)m} \left[\dfrac{n-(j-1)\times m-\alpha}{n-(j-1)\times m}\right] \times (1+i)^{k-(\ell-1)m-1}\right. \\ \quad \text{for } k = (\ell-2)m+1, (\ell-2)m+2,\ldots,(\ell-1)m \end{cases} \tag{12}$$

with the remaining parcels being constant. That is:

$$A_k = S_{(\ell-1)m}/m, \text{ for } k = (\ell-1)m+1, (\ell-1)m+2,\ldots,n \tag{13}$$

for the sequence of the parcels of interest, it suffices to recall that:

$$J_k = p_k - A_k, \text{ for } k = 1,2,\ldots,n \tag{14}$$

© 2023 Great Britain Journals Press

III. THE MULTIPLE CONTRACTS ALTERNATIVE

Rather than engaging a single contract, the financial institution has the option of requiring the borrower to adhere to n subcontracts; one for each of the n payments that would be associated with the case of a single contract, with the principal of the k-th subcontract being the present value, at the same interest rate i, of the k-th payment of the single contract.

Namely, the principal of the k-th subcontract, denoted by F_k, is:

$$F_k = p_k \times (1+i)^{-k}, \quad k = 1, 2, \ldots, n \tag{15}$$

In this case, the parcel of amortization associated with the k-th payment, which will be denoted by $\hat{A}_k$, will be:

$$\hat{A}_k = F_k = p_k \times (1+i)^{-k}, \quad k = 1, 2, \ldots, n \tag{16}$$

Ergo, the parcel of amortization associated with the k-th subcontract is exactly equal to the value of the corresponding principal.

Conversely, from an accounting point of view, it follows that the parcel of interest associated with the k-th subcontract, which will be denoted by $\hat{J}_k$, is:

$$\hat{J}_k = p_k \times \left\{1 - (1+i)^{-k}\right\} = p_k - F_k = p_k - \hat{A}_k \quad , \quad k = 1, 2, \ldots, n \tag{17}$$

From a strict accounting point of view, not taking into consideration the costs that may be associated with the bookkeeping and registration of the subcontracts, the total interest payments is the same in both cases. However, in terms of present values, and depending on the financial institution opportunity cost, it is possible that the financial institution will be better off if it adopts the multiple contracts option.

A simple numerical example

Before presenting a numerical illustration, it is appropriate to give due credit to the one who has introduced the idea of associating a specific contract with each of the payments of the main contract.

As far as we know, the concept was originally proposed by Sandrini (2007), in his Master's thesis for the Federal University of Paraná. However, an actual contract for each of the payments was not effectively proposed. The goal was to imply, specifically for the case of the constant payments scheme of debt amortization, the occurrence of what is named, in legal terms, anatocism – to wit, the charge of interest upon interest.

Later, De-Losso et al. (2013) presented a formalization of the concept of multiple contracts. Focusing on the case of the constant payments scheme, de Faro (2021) and de Faro (2022) extended the analysis of De-Losso et al. (2013) to consider both the so-called "Brazilian System of Amortization", and the Constant Amortization System.

Now, as a numerical illustration, consider a loan of 12,000 units of capital, for the case of $n = 12$ periodic payments, with $m = 3$, and $\ell = 4$, with the periodic rate of interest, i, being equal to 1% per period.

© 2023 Great Britain Journals Press

London Journal of Research in Management and Business

Table 1 presents the sequence of the 12 payments, which is the same both in the case of a single contract, as well as in the 12 individual contracts.

Also, in Table 1, we have the sequences of values of J_k and of $\hat{J}_k$ in addition to the sequence of differences $d_k = J_k - \hat{J}_k$

Table 1: The Sequences of the Parcels of Interest and their Differences

k	p_k	J_k	$\hat{J}_k$	d_k
1	1,120.00	120.00	11.09	108.91
2	1,120.00	110.00	22.07	87.93
3	1,120.00	99.90	32.94	66.96
4	1,086.35	89.70	42.39	47.31
5	1,086.35	79.73	52.73	27.01
6	1,086.35	69.67	62.96	6.71
7	1,051.16	59.50	70.72	-11.22
8	1,051.16	49.58	80.43	-30.85
9	1,051.16	39.57	90.04	-50.48
10	1,011.16	29.45	95.77	-66.32
11	1,001.34	19.63	103.82	-84.18
12	991.52	9.82	111.60	-101.78
$\sum$	12,776.55	776.55	776.55	0.00

Strictly from an accounting point of view, there is no gain if a single contract is substituted by multiple contracts since the sums of the corresponding parcels of interest are the same. Hence,

$$\sum_{k=1}^{n} J_k = \sum_{k=1}^{n} \hat{J}_k = 776.55$$

Yet, depending on the opportunity cost of the financial institution, which will be denoted as ρ, the financial institution may derive substantial financial gains in terms of income tax deductions.

In other words, it is possible that:

$$V_1(\rho) = \sum_{k=1}^{n} J_k \times (1+\rho)^{-k} > V_2(\rho) = \sum_{k=1}^{n} \hat{J}_k \times (1+\rho)^{-k} \tag{18}$$

where the interest rate ρ is supposed to be relative to the same period of the interest rate i.

Moreover, as the sequence of differences d_k has only one change of sign, thus characterizing what is termed a conventional financing project, cf. de Faro (1974), whose internal rate of return is unique, and in this particular case null, it follows that $\Delta = V_1(\rho) - V_2(\rho) > 0 \; for \; \rho > 0$.

Figure 1 outlines the evolution of Δ, $for \; 0 \leq \rho \leq 5\%$. Additionally, we also have the evolution of , when the interest rate, i , is equal to 0.5%, 1%, 1.5%, 2% and 3%.

© 2023 Great Britain Journals Press

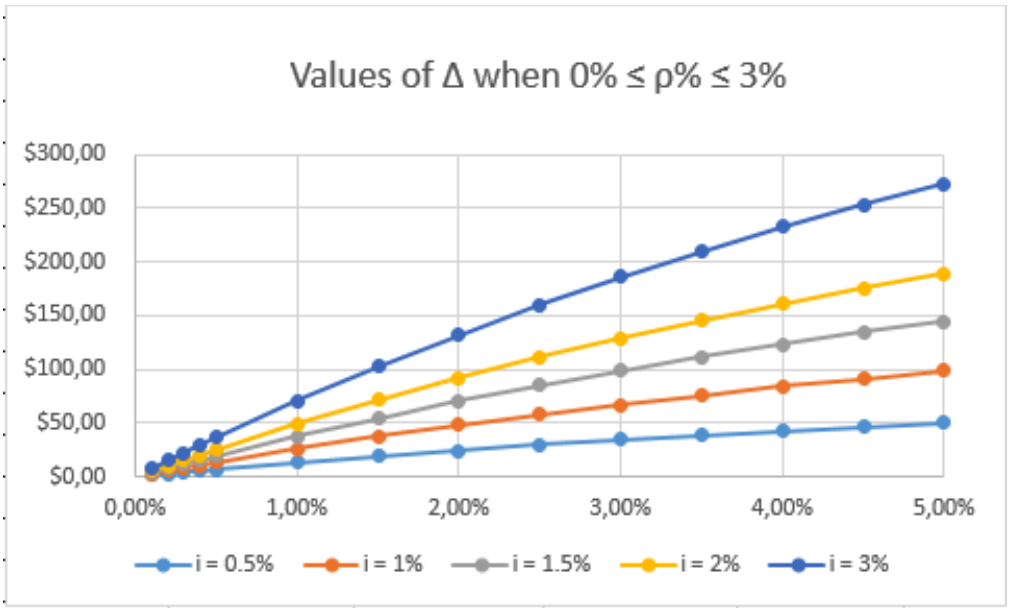


Figure 1

For instance, if $i = 1\%$ per period, and if $\rho = 2\%$ per period, we will have $\Delta = V_1(2\%) - V_2(2\%) = 709.38 - 661.56 = 47.82$ units of capital. Namely, the financing institution will have a non-trivial income tax gain, in terms of present values, if a single contract is substituted by 12 individual contracts, one for each of the 12 payments.

The difference Δ is substantially greater if $i = 3\%$ per period and $\rho = 5\%$ per period. That is, $\Delta = V_1(5\%) - V_2(5\%) = 1,860.77 - 1,587.79 = 272.98$ units of capital.

IV. GENERAL ANALYSIS

In the previous section, focusing attention on the case of a contract with only 12 payments, it was verified that the sequence, d_k, of differences of the interest payments yielded just one change of sign, thereby assuring us of the uniqueness of the corresponding internal rate of return, which was known to be zero.

However, when the number of payments is increased, it is possible to have instances wherein more than one change of sign can occur.

This possibility is illustrated in Figure 2, which refers to the case where a loan of 1,200,000 units of capital has a term of 15 years (180 months), with $\ell = 15$, monthly payments, and with the monthly interest rate, i, going from 0.5% up to 3%.

© 2023 Great Britain Journals Press

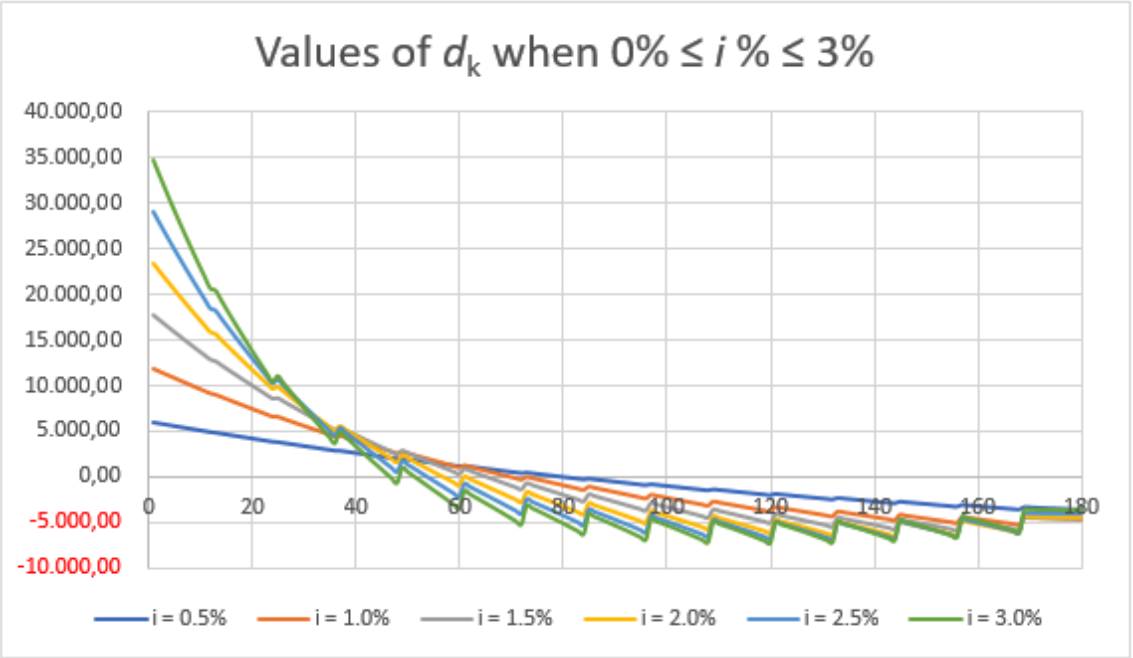


Figure 2

Wherefore, for the cases where the monthly interest rate i assumes the values of 1%, 2% and 3%, we have three changes of sign in the sequences of differences d_k with only one change of sign in the other three cases.

However, considering a classical result first stated by Norstrom (1972), which is based on the sequence of the accumulated values of the sequence d_k, we can still guarantee the uniqueness of the corresponding internal rate of return, and which we already know is null. Moreover, we are also assured that the difference of present values Δ is positive whenever the opportunity cost ρ is greater than zero.

Taking into consideration that in Brazil the monthly interest rates charged in house-financing contracts do not exceed 2% per month, in real terms, Tables 2-5 present the percentage increase of the fiscal gain $\delta = \left[V_1(\rho_a)/V_2(\rho_a) - 1\right] \times 100$, for some values of the corresponding annual opportunity cost ρ_a, with each contract with a term of n_a years, subdivided in $\ell = n_a$ subperiods, and with each one at $m = 12$ monthly payments.

Table 2: Percentual Values of δ for $i = 0.5\%\ p.m.$

i=0.5%p.m.	ρ_a(%)					
n(years)	5%	10%	15%	20%	25%	30%
5	7.6032	15.3468	23.2045	31.1515	39.1646	47.2225
10	14.7195	30.4499	47.0152	64.2312	81.9173	99.9056
15	21.1799	44.5397	69.5395	95.6177	122.2627	149.0522
20	27.0049	57.3260	89.7844	123.2682	156.9112	190.1311
25	32.2006	68.6281	107.2472	146.4066	185.0633	222.6793
30	36.8074	78.4424	121.9342	165.2770	207.4811	248.1846

© 2023 Great Britain Journals Press

Table 3: Percentual Values of δ for $i = 1.0\%\ p.m.$

i=1%p.m.	ρ_a(%)					
n(years)	5%	10%	15%	20%	25%	30%
5	6.9818	14.0369	21.1427	28.2780	35.4240	42.5637
10	12.6403	25.8461	39.4650	53.3526	67.3789	81.4325
15	17.1122	35.2698	54.0650	73.1370	92.1981	111.0376
20	20.6713	42.6924	65.3157	87.9659	110.2641	131.9929
25	23.5050	48.4791	73.8287	98.8507	123.1814	146.6734
30	25.7789	52.9968	80.2719	106.8814	132.5477	157.2110

Table 4: Percentual Values of δ for $i = 1.5\%\ p.m.$

i=1.5%p.m.	ρ_a(%)					
n(years)	5%	10%	15%	20%	25%	30%
5	6.4400	12.9049	19.3754	25.8347	32.2678	38.6619
10	11.0264	22.3577	33.8719	45.4608	57.0333	68.5156
15	14.2645	29.0323	44.0129	58.9738	73.7455	88.2143
20	16.6191	33.8043	51.0807	68.1246	84.7455	100.8487
25	18.3616	37.2551	56.0467	74.3817	92.1025	109.1625
30	19.6818	39.8015	59.6129	78.7830	97.2111	114.8975

Table 5: Percentual Values of δ for $i = 2.0\%\ p.m.$

i=2%p.m.	ρ_a(%)					
n(years)	5%	10%	15%	20%	25%	30%
5	5.9649	11.9192	17.8476	23.7367	29.5750	35.3530
10	9.7461	19.6393	29.5842	39.5008	49.3250	59.0074
15	12.1807	24.5843	37.0028	49.2816	61.3156	73.0401
20	13.8378	27.8861	41.8294	55.4706	68.7046	81.4871
25	15.0065	30.1631	45.0706	59.5276	73.4576	86.8487
30	15.8621	31.7896	47.3310	62.3081	76.6821	90.4695

The results presented in Tables 2 to 5 are self-evident. They illustrate a compelling support for the substitution of a single contract by multiple contracts.

For instance, if the interest rate i charged by the financial institution granting the loan is 0.5% per month, the percentual value of δcan be as high as 47% when its opportunity cost is 30% annually, the contract has a 5-year term, and with a percentage fiscal gain over 248%, if the contract is of 30 years, and ρ_a=30%per year.

Furthermore, even though the fiscal gain decreases when the interest rate, i , being charged is increased, the percentage gain is no less than 35% in every case.

Accordingly, one can conclude that the financial institution is well advised whenever it substitutes a single contract by multiple contracts, one for each of the payments of the single contract, whenever using our version of SACRE scheme.

© 2023 Great Britain Journals Press

V. A COMPARISON WITH TWO ALTERNATIVE SYSTEMS OF AMORTIZATION

Given that the financial institution granting the loan may have the option of choosing an alternative system of amortization, this section addresses two such possibilities, since both alternatives have also been considered in the Brazilian House-Financial program.

The first one is the system of constant payments. In this case, as shown in De-Losso et al. (2013) and also in de Faro (2022), the present value of the sequence of interest payments, if multiple contracts are adopted, is equal to:

$$V_3(\rho) = p \times \left\{ \frac{1-(1+\rho)^{-n}}{\rho} - \frac{1-(1+\hat{\rho})^{-n}}{\hat{\rho}} \right\} \tag{19}$$

where $p = i \times F/\left[1-(1+i)^{-n}\right]$ and $\hat{\rho} = \rho + i + (\rho \times i)$.

Tables 6 to 9 illustrate the percentage increase of the fiscal gain $\delta' = \left[V_1(\rho_a)/V_3(\rho_a) - 1\right] \times 100$, wherein the financial institution adopts the multiple contracts version of the SACRE instead of the constant payments scheme.

Table 6: Percentual Values of δ' for $i = 0.5\%\ p.m.$

i=0.5%p.m.	ρ_a(%)					
n(years)	5%	10%	15%	20%	25%	30%
5	5.7794	5.2285	4,6985	4.1891	3.7003	3.2316
10	9.4904	7.6829	5.9746	4.3761	2.8930	1.5266
15	12.4358	8.8406	5.5845	2.7002	0.1883	-1.9736
20	14.6772	9.0254	4.2075	0.2399	-2.9578	-5.5094
25	16.3350	8.5602	2.4188	-2.2365	-5.7050	-8.2918
30	17.4969	7.7185	0.6241	-4.3241	-7.7642	-10.2021

Table 7: Percentual Values of δ' for $i = 1.0\%\ p.m.$

i=1.0%p.m.	ρ_a(%)					
n(years)	5%	10%	15%	20%	25%	30%
5	11.7027	10.6266	9.6013	8.6255	7.6976	6.8157
10	19.1158	15.7858	12.7269	9.9396	7.4162	5.1429
15	24.8388	18.6177	13.2481	8.6888	4.8592	1.6614
20	28.9490	19.7683	12.4276	6.6867	2.2392	-1.2076
25	31.7211	19.8263	11.1033	4.8366	0.3318	-2.9539
30	33.3774	19.2161	9.7229	3.4250	-0.8325	-3.8088

Table 8: Percentual Values of δ' for $i = 1.5\%\ p.m.$

i=1.5%p.m.	ρ_a(%)					
n(years)	5%	10%	15%	20%	25%	30%
5	17.7320	16.1494	14.6545	13.2434	11.9119	10.6558
10	28.5432	23.8819	19.6904	15.9451	12.6137	9.6597
15	36.2426	27.9434	21.0064	15.2744	10.5670	6.7070

© 2023 Great Britain Journals Press

20	41.0125	29.3097	20.3074	13.4737	8.2943	4.3416
25	43.5284	28.9674	18.7241	11.5730	6.5250	2.8817
30	44.3848	27.6427	16.8807	9.9207	5.2787	2.0524

Table 9: Percentual Values of δ' for $i = 2.0\%\ p.m.$

i=2.0%p.m.	ρ_a(%)					
n(years)	5%	10%	15%	20%	25%	30%
5	23.8328	21.7572	19.8114	17.9876	16.2783	14.6761
10	37.5385	31.6843	26.5071	21.9496	17.9496	14.4441
15	46.2311	36.2146	28.0327	21.4001	16.0368	11.6928
20	50,6002	36,9708	26.7575	19.1564	13.4773	9.1860
25	52.0719	35.6097	24.3397	16.6165	11.2283	7.3658
30	51.7253	33.2421	21.6769	14.3198	9.4569	6.0912

As indicated in the overwhelming majority of the cases, the financial institution should not choose the multiple contracts version of the SACRE. That is, if possible, the best option is to adopt the multiple contracts version of the constant payments scheme.

On the other hand, in the case of the system of constant amortization, the present value of the sequence of interest payments, where multiple contracts are adopted as shown in de Faro (2022), is equal to:

$$V_4(\rho) = \frac{F}{n} \times \left\{ \frac{(i-\rho)\times\left[(1+\rho)^{-n}-1\right]+n\times i\times\rho}{\rho^2} - \frac{(i-\hat{\rho})\times\left[(i+\hat{\rho})^{-n}-1\right]+n\times i\times\hat{\rho}}{\hat{\rho}^2} \right\} \quad (20)$$

Tables 10 to 13 portray the percentage increase of the fiscal gain $\hat{\delta} = \left[V_1(\rho_a)/V_4(\rho_a) - 1\right] \times 100$, when the financial institution adopts the multiple contracts version of the SACRE, instead of the constant amortization version.

Table 10: Percentual Values of $\hat{\delta}$ for $i = 0.5\%\ p.m.$

i=0.5%p.m.	ρ_a(%)					
n(years)	5%	10%	15%	20%	25%	30%
5	1.2310	1.0836	0.9439	0.8114	0.6861	0.5675
10	1.1235	0,8599	0.6193	0.4016	0.2061	0.0315
15	1.0147	0.6658	0.3650	0.1106	-0.1015	-0.2766
20	0.8942	0.5125	0.1968	-0.0552	-0.2521	-0.4043
25	0.7927	0.3987	0.0889	-0.1445	-0.3168	-0.4438
30	0.7084	0.3151	0.0216	-0.1884	-0.3371	-0.4436

© 2023 Great Britain Journals Press

Table 11: Percentual Values of $\hat{\delta}$ for $i = 1.0\%\ p.m.$

i=1.0%p.m.	ρ_a(%)					
n(years)	5%	10%	15%	20%	25%	30%
5	2.5282	2.2448	1.9781	1.7273	1.4915	1.2700
10	2.3441	1.8686	1.4429	1.0645	0.7298	0.4351
15	2.1678	1.5681	1.0653	0.6496	0.3087	0.0302
20	1.9540	1.3198	0.8130	0.4170	0.1106	-0.1265
25	1.7694	1.1305	0.6452	0.2849	0.0184	-0.1807
30	1.6121	0.9843	0.5301	0.2070	-0.0246	-0.1942

Table 12: Percentual Values of $\hat{\delta}$ for $i = 1.5\%\ p.m.$

i=1.5%p.m.	ρ_a(%)					
n(years)	5%	10%	15%	20%	25%	30%
5	3.8908	3.4788	3.0936	2.7336	2.3972	2.0829
10	3.6425	2.9811	2.3967	1.8829	1.4330	1.0398
15	3,4074	2.5917	1.9182	1.3674	0.9186	0.5529
20	3.0991	2.2443	1.5721	1.0511	0.6482	0.3350
25	2.8242	1.9654	1.3226	0.8473	0.4941	0.2278
30	2.5846	1.7397	1.1366	0.7078	0.3981	0.1689

Table 13: Percentual Values of $\hat{\delta}$ for $i = 2.0\%\ p.m.$

i=2.0%p.m.	ρ_a(%)					
n(years)	5%	10%	15%	20%	25%	30%
5	5.3187	4.7826	4.2842	3.8207	3.3898	2.9890
10	5.0078	4.1727	3.4415	2.8038	2.2487	1.7659
15	4.7111	3.6897	2.8547	2.1760	1.6247	1.1756
20	4.3022	3.2309	2.3969	1.7531	1.2553	0.8670
25	3.9287	2.8489	2.0482	1.4577	1.0179	0.6847
30	3.5992	2.5325	1.7778	1.2421	0.8542	0.5657

Similarly, it is clear that in the overwhelming majority of cases, the financial institution should opt for the multiple contracts version of the constant amortization scheme.

VI. CONCLUSION

In similarity to the cases where either the constant payments system or the constant amortization system is adopted, a financial institution which implements our version of the SACRE, will be well advised if a multiple contract scheme, rather than a single contract, is implemented.

However, if the financial institution has the option of rather than adopting the SACRE, choosing either the constant payment system or the constant amortization one, in the vast majority of cases, SACRE is not the best option.

© 2023 Great Britain Journals Press

REFERENCES

1. De Faro, C., "On the Internal Rate of Return Criterion", *The Engineering Economist*, V.19, Nº 3 (1974), p. 165-194.
2. De Faro, C., "The Constant Amortization Scheme With Multiple Contracts", *Revista Brasileira de Economia*, Vol. 76, Nº 2 (april-june, 2022), p. 135-146.
3. De Faro, C. and Lachtermacher, G., *Introdução à Matemática Financeira*, FGV/Saraiva, 2022.
4. De Faro, C. and Lachtermacher, G., "O SACRE no Regime de Juros Compostos", *Estudos e Negócios Acadêmicos,* Nº. 4(2022), p. 5-18.
5. De-Losso, R., Giovannetti, B.C., & Rangel, A.S., "Sistema de Amortização por Múltiplos Contratos: a Falácia do Sistema Francês", *Economic Analysis of Law Review*, Vol. 4, Nº 1 (2013), p. 160-180.
6. Norstrom, C., "A Sufficient Condition for a Unique Non Negative Internal Rate of Return", *Journal of Financial and Quantitative Analysis*, V. 7, Nº 3 (1972), p. 1835-1839.

© 2023 Great Britain Journals Press

This page is intentionally left blank

© 2023 Great Britain Journals Press

Scan to know paper details and
author's profile

The Impact of Taxation on Foreign Direct Investment (FDI) Inflows in Tanzania

Ephraim Oswald Mdee & Jehovaness Aikaeli

ABSTRACT

This paper analyzed the impact of taxation on the FDI inflows in the country using the Cross Sectional Autoregressive Distributed Lag (CS-ARDL) for a panel of 52 countries between a period 1999-2017. The results of the CS-ARDL estimates have revealed that both Effective Average Tax Rate (EATR) and Effective Marginal Tax Rate (EMTR) have positive and statistically significant relationship with the FDI inflows in the long-run, whereby, a percentage changes in EATR and EMTR will increase FDI inflows in Tanzania by 0.14 and 0.11 percent respectively. Further, the paper found that in the short-run, a percentage change in the EATR results into an increase of FDI inflows by 0.75 percent, whereas, a unit change of EMTR leads into reduction of FDI inflows by 0.15 percent. These results signify that incentives provided by the Government to attract foreign investment has yielded the anticipated results for the country, as more FDI inflows are concentrated in sectors of accommodation and food services, mining and quarrying, and finance and insurance. Nonetheless, to achieve the level of growth desired, more still needs to be done, which can be done through facilitating the integration of the Tanzanian economy into the regional and global value chains by promoting import-substitution industries and broaden products mix in the niche areas such as: iron and steel industries; manufacturing industries for sugar, soap detergents, cosmetics, textiles; transportation sector; and agriculture sector such as maize seeds and edible oils.

Keywords: foreign direct investment (FDI), effective average tax rate (EATR) and effective marginal tax rate (EMTR), cross sectional autoregressive distributed lag (CS-ARDL).

Classification: JEL:F23

Language: English

Great Britain Journals Press

LJP Copyright ID: 146443
Print ISSN: 2633-2299
Online ISSN: 2633-2302

London Journal of Research in Management and Business

Volume 23 | Issue 6 | Compilation 1.0

© 2023. Ephraim Oswald Mdee & Jehovaness Aikaeli. This is a research/review paper, distributed under the terms of the Creative Commons Attribution-Noncom-mercial 4.0 Unported License http://creativecommons.org/licenses/by-nc/4.0/), permitting all noncommercial use, distribution, and reproduction in any medium, provided the original work is properly cited.

The Impact of Taxation on Foreign Direct Investment (FDI) Inflows in Tanzania

Ephraim Oswald Mdee[α] & Jehovaness Aikaeli[σ]

ABSTRACT

This paper analyzed the impact of taxation on the FDI inflows in the country using the Cross Sectional Autoregressive Distributed Lag (CS-ARDL) for a panel of 52 countries between a period 1999-2017. The results of the CS-ARDL estimates have revealed that both Effective Average Tax Rate (EATR) and Effective Marginal Tax Rate (EMTR) have positive and statistically significant relationship with the FDI inflows in the long-run, whereby, a percentage changes in EATR and EMTR will increase FDI inflows in Tanzania by 0.14 and 0.11 percent respectively. Further, the paper found that in the short-run, a percentage change in the EATR results into an increase of FDI inflows by 0.75 percent, whereas, a unit change of EMTR leads into reduction of FDI inflows by 0.15 percent. These results signify that incentives provided by the Government to attract foreign investment has yielded the anticipated results for the country, as more FDI inflows are concentrated in sectors of accommodation and food services, mining and quarrying, and finance and insurance. Nonetheless, to achieve the level of growth desired, more still needs to be done, which can be done through facilitating the integration of the Tanzanian economy into the regional and global value chains by promoting import-substitution industries and broaden products mix in the niche areas such as: iron and steel industries; manufacturing industries for sugar, soap detergents, cosmetics, textiles; transportation sector; and agriculture sector such as maize seeds and edible oils.

Keywords: foreign direct investment (FDI), effective average tax rate (EATR) and effective marginal tax rate (EMTR), cross sectional autoregressive distributed lag (CS-ARDL).

I. INTRODUCTION

Over the past two decades there has been a renewed interest in the globalization process and one of recently identified important forces of globalization has been private Foreign Direct Investment (FDI). Global FDI inflows over the past two decades have increased significantly worldwide, reaching USD 1.58 trillion in 2021 from USD 159 billion in 1991 (UNCTAD, 2022). From a policy standpoint, Governments seek to attract FDI as it is commonly regarded as advantageous for the host nation through: generating new growth prospects; greater earnings and employment; higher tax revenues; and a better welfare level (Mkonyi, Kirori, & Macheru, 2022; Becker, Fuest, & Rieder, 2012). To attract more FDI, Governments have designed various policy incentives, including fiscal and financial incentives (Mkonyi, Kirori, & Macheru, 2022; Boly, Coulibaly, & Kere, 2019).

The Government of Tanzania, like other developing countries, has been striving to design and implement equitable and efficient taxation system so as to attract FDI, which is seen as a catalyst for fast tracking growth and development (Bigsten & Danielsson, 1999). The Investment Code of 1990 initiated the reform-process in investments but failed due to weak response from the private sector. The New Investment Policy was legislated in 1996 and its implementation led to the enactment of the Investment Act of 1997, which has caused a rapid increase in the amount of foreign capital inflows (URT, 2013). The stock of Foreign Direct Investment (FDI), which is the foremost component of

London Journal of Research in Management and Business

© 2023 Great Britain Journals Press

foreign private capital, increased from USD 0.01 million in 1990 to USD 921.83 million in 2021[1]. Nonetheless, despite of the rapid increase in the amount of FDI inflows, it is argued that the Government policies and actions have not effectively keep and attract investment[2] to the point of the country being ranked 141 out of 190 countries on the World Bank's 'Doing Business' ranking (Mdee, Aikael, & Luvanda, 2022).

One of the biggest challenges to investment identified is the unfriendly and opaque tax policies, evidenced by the results of investment-climate surveys that found out that more than 50 percent of the firms perceive taxation, as well as access to finance as severe constraints to investment (Levin, 2005). Levin (2004) argue that the issuance of tax incentives to priority sectors have led to increased FDI inflows, as well as, caused a relatively high-tax rate to other sectors and thus discourage investment in those sectors. Therefore, this paper adds to the academic knowledge by econometrically analyzing the impact of taxation on FDI inflows in Tanzania.

The impact of taxes on FDI inflows is analyzed in two ways: First, the paper focuses on FDI inflows in Tanzania for increase policy relevance as FDI is crucial fast tracking the country's growth and development. This is due to the fact that, in spite of this increase in amount of FDI in the country, there are still scant evidence on much has the country's taxation policy contributed to this increase in capital formation. Second, for most African countries, like Tanzania, FDI flows are predominantly one-way, from developed to African countries, unlike previous studies that have used gravity models by assuming bilateral exchanges of FDI between countries (Boly, Coulibaly, & Kere, 2019). Hence, this paper is crucial to the policy dialogues on growth, especially now at the time when the Government is striving to attain industrialization through increased capital formation in the country.

The remainder of this paper is organized as follows. Section Two reviews the literature on taxation and FDI inflows. Section Three presents the methodology. Section Four presents and discusses the estimated results and Section Five provides the conclusion.

II. LITERATURE REVIEW

2.1 History of FDI Inflows in Tanzania

The history of FDI promotion in the country has gone through a number of phases. The Government passed the Foreign Investment Act in 1963 to attract FDI but the efforts were unsuccessful because in 1967 the government opted for Socialist path of economic development. During the 1970s and the first half of the 1980s, the country received very little FDI from investors because the majority of the investments were made by the Government either directly or indirectly. For instance, there were about 400 enterprises which were 100 percent owned by the Tanzanian Government by 1980 (UNCTAD, 2002).

After the failure of Socialism and self-reliance policy, Tanzania had to undertake a number of proactive measures in the 1990s to facilitate the business that foreign investors undertake in the country. The Government enacted a number of investment related laws and policies in recognition of the important role towards creating an enabling environment for the private sector development. Some of the laws enacted were such as (Mnali, 2012); Tanzania Investment Act Number 26 of 1997, Mining Act Number 5 of 1998, Capital Markets and Securities Act Number 5 of 1995, Special Economic Zones Act of 2005, Foreign Exchange Act of 1992 and Public Private Partnership Act of 2010.

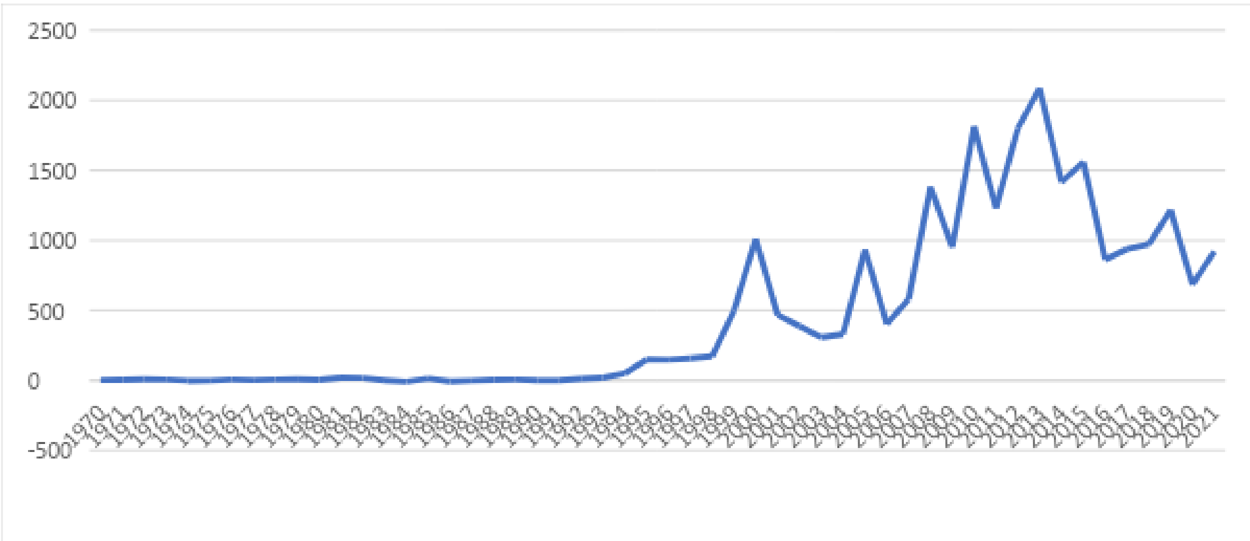
[1] https://unctadstat.unctad.org/wds/TableViewer/tableView.aspx
[2] https://www.state.gov/reports/2020-investment-climate-statements/tanzania/

© 2023 Great Britain Journals Press

The institutional and legal framework carried out by the Government has resulted in a mixed growth pattern of FDI inflows in the country. During the pre-reform period, Tanzania attracted very little FDI inflows which was on average, about USD 4.4 million (Ngowi, 2012). As the reforms initiated in 1985 appear to have begun to firmly take hold, there was an increase in inflow of FDI into the country from USD 0.01 million in 1990 to USD 496.60 million in 1999. Then it fluctuated up to 2005 where it reached USD 935.52 million.

The inflows of FDI then declined significantly from USD 935.5 million in 2005 to USD 403.04 million in 2006 before rising to USD 581.51 million in 2007. The increase in 2007 originated from new investments in the transport and communication sector, the wholesale and retail trade sector and finance sectors. As a result of global economic and financial crisis, the inflow of FDI declined to USD 952.6 in 2009 million from USD 1,383.3 million in 2008. The decline is also associated with low disbursement from related companies. In 2010 Tanzania recorded the highest FDI inflows amounting to USD 1,813.3, the record that was beaten in 2013 after recording FDI amounting to USD 2,087.30 million (URT, 2013).

The inflows then fell thereafter up to USD 921.83 million in 2021, as depicted in Figure 1.



Source: UNCTAD

Figure 1: FDI Inflows in Tanzania, 1970-2021 USD Million

According to the Tanzania Investment Report (2018)[3], FDI inflows to the country in 2017 were concentrated in three main activities namely: accommodation and food (USD 247.2 million); mining and quarrying (USD 202.5 million); and finance and insurance (USD 127.1 million). Together these activities had an aggregated average of 61.5 percent of total inflows in 2017. Additionally, the report[4] identifies the top source countries of FDI Inflows in Tanzania, for the period 2013-2017, to be South Africa (13.9 percent), Canada (12.3 percent), Nigeria (11.0 percent), Netherlands (10.9 percent) and United Kingdom (10.8 percent). The report has recommended that in order to increase FDI Inflows in the country, there is a need for the Government to ensure full implementation of Investment, Customs Union and Common Market protocols in regional economic communities need to be expedited in order to facilitate trade and cross border investments to maximize the benefits associated with ongoing regional integration arrangements.

[3] file:///C:/Users/user/Downloads/Tanzania%20Investment%20-%20_%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20%202018%20(EN)%20(1).pdf

[4] Ibrid

2.2 Theoretical Review

Theoretically, this paper adopted on various economic theories that determine channels of influence for FDI inflows to a country. The prominent of these theories are the Ownership, Location and Internalization (OLI) framework and the Organization for Economic Co-operation and Development (OECD) policy framework for investment.

The OLI Framework postulates that horizontal FDI involving production abroad can be expected in place of exports or licensing where OLI conditions are met (Cruz, Florian, & Amal, 2020). The conditions are that Multi -National Enterprise (MNE) must: poses ownership advantage; offer location advantage that make local production more profitable than exporting; and internalization advantages that make undertaking a business activity directly through FDI more profitable than licensing to other firms in foreign markets the right to use assets conferring ownership advantage (Oxelheim, Randoy, & Stonehill, 2001). Taxation enters the OLI Framework through the ownership advantage where it is postulated that a firm is more likely to engage in FDI when the firm is able to negotiate reduced taxation (Cruz, Florian, & Amal, 2020; Oxelheim, Randoy, & Stonehill, 2001). The Framework postulates that in an effort to minimize taxes, an MNE might undertake FDI in a tax haven country, or at least in a country with a relatively low tax rate (Jones & Temouri, 2016).

On the other hand, taxation enters the Policy Framework for Investment through policy makers who always provide guidance to potential investors (Brandstetter & Jacob, 2013). It is postulated that (Wilson, 1999; Zodrow & Mieszkowski, 1986) policy makers always have to make a tough decission of whether to cut taxes to FDI inflows while considering the its impact on tax receipts due to relocation of tax base in the home country. Since developing countries consider mostly of the tax-base relocation issues, they have a stronger incentive of reducing the tax rates to FDI inflows than the developed countries (Wilson, 1991; Hines & Rice, 1996; Swenson, 2001; Gresik, 2001). It is further postulated that a tax increase may not have an impact on FDI inflows to developing countries once equilibrium effects are accounted for (Scholes & Wolfson, 1990; Haufler & Wooton, 1999).

This paper has borrowed much on the OLI Framework and the Policy Framework for Investment. This is based on their most desirable characteristics of determining factors for FDI inflows which are location advantage and relocation factors. For a developing world like Tanzania, these factors are crucial in determining the factors for increased FDI inflows in the country.

2.3 Empirical Review

Studies have established a relationship between FDI and taxation for a group of countries. Both (Dollery, & Clark, 2004; Nistor & Gragos, 2013) found that investors from foreign countries responds negatively to the Corporate Income Tax (CIT) rate. Studies that estimated whether taxation affects the choice of location of outward FDI (Devereux & Freeman, 1995; A de Mooji & Ederveen, 2001) concludes that in-order to encourage the increase in inward FDI, then offering a tax credits to foreign shareholders are of paramount importance. Nonetheless, Young (1988) revealed that whereas FDI through retained earnings may be elastic with respect to tax rates and rates of return, FDI through new funds is inelastic with respect to tax rates and rates of return. However, all most of these studies are cross-country in nature, whereas studies on an FDI-importing country like Tanzania which applies the techniques of the Cross Sectional Autoregressive Distributed Lag (CS-ARDL) are scarce.

Studies on impact that taxes have on FDI inflows have provided inconclusive results. A-De-Mooij and Ederven (2001) concluded that, on average, a 1 percentage point increase in the tax rate reduced FDI by 3.3 percent, and (Nguyen & Saleh, 2018; Feld & Heckemeyer, 2008) found that higher tax rates have a significant negative impact on FDI flows. Nonetheless, (Mutti & Grubert, 2004; Desai, Foley, & Hines,

© 2023 Great Britain Journals Press

2004; James, 2013; Boly, Coulibaly, & Kere, 2019) found that investments oriented toward domestic markets are less sensitive to changes in tax incentives, while export-oriented investments are more sensitive.

This paper contributes to body of knowledge on the subject matter of role of taxation on FDI in two ways, first by focusing on one of the developing countries (Tanzania) for increased policy-relevance. Second, previous studies have typically used gravity models that assume bilateral exchanges of FDI between countries, whereas, in this paper employs the Cross Sectional Autoregressive Distributed Lag (CS-ARDL) thus reducing the gap in knowledge.

III. METHODOLOGY

3.1 Theoretical Framework

FDIs are mainly affected by the effective tax rates, whose assessment are always complicated given the alternative source of financing and the differed characteristics of the involved national tax systems (Leibritz, Thornton, & Bibbee, 1997). The interaction between FDI of different countries and effects of cross-border caused by tax policy, could hypothetically be captured using a Spatial Durbin Model (SDM). The SDM allows identification of both the endogenous effects that is spatially lagged endogenous variables and the circumstantial effects. This produces unbiased estimates even if the underlying data generator process is a Spatial Autoregressive Model (SAR) or a Spatial Error Model (SEM) as defined by Elhorst (2010).

The model includes spatially lagged independent variables, spatially lagged explained variables. Also, the paper expects the existence of spatial autocorrelation given the fact that the decisions for foreigners to invest can be affected not only by different tax rates but also by inflation as a proxy of the macroeconomic condition of Tanzania, bilateral exchange rates and economic growth rate.

3.2 Empirical Model Specification

In testing for the overall impact of taxes on attracting FDI inflows in the country, the paper adopted the theoretical model developed by Yoo (2003) and estimate the following model:

$$FDI_{it} = \beta_0 + \beta_1 EXR_{it} + \beta_2 EATR_{it} + \beta_3 EMTR_{it} + \beta_4 INF_{it} + \varepsilon_{it} \quad (1)$$

where, *FDI* is the FDI inflows to Tanzania, *EXR* is the bilateral exchange rate between Tanzania, and the source country, *EATR* is the Effective Average Tax Rate, *EMTR* is the Effective Marginal Tax Rate, *INF* stands for Inflation rate of Tanzania, *i* stands for the origin country of FDI into Tanzania, *t* stands for the time-period and ε is the stochastic error term.

3.2 The estimation of the Effective Marginal Tax Rate (METR) and the Effective Average Tax Rate (EATR)

The Effective Marginal Tax Rate (EMTR) is defined as the difference between the pre-tax rate of the marginal investment at the level of the investor and the net return on the investment at the level of the saver. The EMTR usually applies to a marginal investment project as it is the one that makes the foreign firm indifferent between investing and not investing in Tanzania.

King and Fullerton (1984) laid down the foundation for the estimation of the EMTR that this paper modified to fit the Tanzanian economy in its estimation of the EMTR. The first step in the estimation of the EMTR is the estimation of the Effective Marginal Tax Wedge (EMTW) which is given by the following formula (King & Fullerton, 1984):

© 2023 Great Britain Journals Press

$$EMTW = p_{jlkt} - s_{jt} \quad (2)$$

where p_{jkt} is the required pre-tax real rate of return of an investment project (p) and s_{jt} is the required post-tax real rate of return of the supplier of finance, s. This was calculated for each country, j, asset, l, typed of finance, k, and year t. The pre-tax real rate of return was given by:

$$p_{jlkt} = \frac{\left(1-A_{jlt}\right)}{\left(1-\tau_{jt}^{r}\right)\left(1+\pi_{jt}\right)}\left[\rho_{jkt}^{'} - \pi_{jt} + \delta_{l}\left(1 + \pi_{jt}\right)\right] - \delta_{l} \quad (3)$$

where A_{jlt} is the net present value of depreciation allowance in country j for asset l in year t, τ_{jt}^{r} is the statutory tax rate on retained earnings in country j in year t (this paper used 30 percent statutory tax rate of Corporate Income Tax that applies in Tanzania), π_{jt} is the inflation rate in country j in year t, $\rho_{jkt}^{'}$ is the discount rate for investment in country j financed by k during period t, whereas, δ_{l} is the depreciation rate of asset l (this paper assumed that the discount rates do not differ in accordance to the source of finance). According to King and Fullerton (1984), the post-tax real rate of return is derived from the following formula:

$$s_{jt} = \frac{1+i_{jt}}{1+\pi_{jt}} - 1 \quad (4)$$

where i_{jt} is the nominal interest rate in country j in year t.

Finally, the EMTR was estimated through the following formula:

$$EMTR = \frac{p_{jlkt} - s_{jt}}{s_{jt}} \quad (5)$$

Because FDI involves cross-border investments, this paper introduced the change in the exchange rates between countries j and n during period t $\left(E_{jnt}\right)$ in the formula for the pre-tax rate of return. Therefore, the pre-tax rate of return was estimated through the following formula:

$$p_{jnlkgt} = \frac{\left(1-A_{nlt}\right)}{\left(1-\tau_{nt}^{r}\right)E_{jnt}\left(1+\pi_{nt}\right)}\left[\rho_{jnt}^{'} - \left(1 - \delta_{l}\right)E_{jnt}\left(1 + \pi_{nt}\right)\right] - \delta_{l} \quad (6)$$

Where j represents the resident country (Tanzania) and n the source country.

The Effective Average Tax Rate (EATR) can be defined as the difference in present value of the investment project in the absence of tax, as a proportion of the present value of the project in the absence of tax. It is usually applied to an investment project that earns economic rent. This paper estimated the EATR on an investment project with a fixed pre-tax real rate of return as:

$$EATR = \frac{V^{*} - V}{V^{*}} = 1 - \frac{\left(\rho_{jt}^{*} + \delta_{l} - \pi_{jt}\right)}{\rho_{jt}^{'} + \delta_{l} - \pi_{jt}}\left[1 - \tau_{jt} + \frac{A_{jlt}\left(\rho_{jt}^{*} + \delta_{l} - \pi_{jt}\right)}{\left(\rho + \delta_{l}\right)}\right] \quad (7)$$

where V is the present value of the income stream, * stands for an absence of tax, whereas other variables are defined as before.

3.3 Estimation Techniques

This paper explored the impact of taxes on FDI inflows in Tanzania in the long run for a panel of 52 countries (N=52) with annual data for the period 1999-2017 (T=18) using the Cross Sectional Autoregressive Distributed Lag (CS-ARDL), that was first proposed by Chudik et al., (2013). The

© 2023 Great Britain Journals Press

CS-ARDL as proposed by Chudik et al., (2013) has several special features including being appropriate for the long-run heterogeneous panel time data as well as the assumption of short-run heterogeneity and long-run homogeneity. Further, the CS-ARDL addresses the challenge of cross-sectional dependence and endogeneity in empirical models (Ameer & Sohag, 2020).

In order for the study to attain unbiased estimators, the choice of appropriate model, (Cross Sectional Autoregressive Distributed Lag (CS-ARDL)) for the empirical analysis in the panel data was vital. The paper was driven by the belief that the correct model produces not only efficient, but also consistent results (Ameer & Sohag, 2020).

Therefore, the recent econometric literature recommends applying the CS-ARDL approach to analyse long heterogeneous data in the presence of common correlation effects over panel dynamic OLS, panel fully modified OLS approach and panel pooled and mean group approaches. These models not only address the issue of cross-country dependence, but they also solve the problems of heteroscedasticity and serial correlation in the panel data (Chudik, Mohaddes, Peasaran, & Raissi, 2013).

Prior to the estimation of the CS-ARDL, the paper tested for the Unit Root by applying both Levin–Lin–Chu test, Im–Pesaran–Shin unit-root test and the Fishertype Tests (Levin, Lin, & Chu, 2002). The paper further used the Kao and Pedroni Tests to test for cointegration.

3.4 Data Type and Choice of Variables

The paper employed secondary panel data for estimation covering the period 1999 -2017. The FDI data were sourced from the Tanzania Investment Reports (various editions), the inflation rate, discount rate, interest rate and exchange rate were sourced from the Bank of Tanzania (BoT), the statutory tax rate on retained earnings was sourced from the Tanzania revenue Authority (TRA). The share of FDI to GDP ($\frac{FDI}{GDP}$) was used as a proxy for FDI inflows. The bilateral exchange rate between Tanzania and FDI source countries was used as a proxy for exchange rate, whereas, the annual end of the period inflation rate of Tanzania was used as a proxy for the inflation rate. The Bank of Tanzania (BoT)'s discount rate was used as a proxy for the discount rate, the BoT's lending interest rate was used as a proxy for the interest rate, whereas the Corporate Income Tax rate in Tanzania (30%) was used as a proxy for the statutory tax rate on retained earnings.

IV. DISCUSSION OF THE EMPIRICAL ESTIMATION OF RESULTS

4.1 Descriptive Statistics of the Variables Used

Initial inspection of the variables of interest show that they are normally distributed with skewness of almost around 2 and a kurtosis of above 2. Table 1 presents the descriptive statistics of the variables.

Table 1: Descriptive Statistics

Variable	N	Mean	Std.dev	Skewness	Kurtosis
Foreign Direct Investment	969	0.9153	2.0642	0.5037	3.2368
Exchange rate	969	5.4244	2.6289	-1.2826	4.2155
Inflation rate	969	0.0752	0.0394	1.7826	5.5027
Effective Marginal tax rate	969	1.0594	2.3139	2.0312	9.2134
Effective Average tax rate	969	0.7217	1.4575	-2.6463	90.8635

Source: Author's computation

© 2023 Great Britain Journals Press

A correlation matrix was then done for the explanatory variables. This is important in establishing the potential multicollinearity problem. Table 2 depicts the correlation matrix between FDI as dependent variable and its explanatory variables. Evidently, FDI is positively associated with the all-independent variables.

Table 2: Correlation Matrix

Variable	Foreign Direct Investment	Exchange rate	Inflation	Effective Marginal Tax Rate	Effective Average Tax Rate
Foreign Direct Investment	1.000				
Exchange rate	0.129	1.000			
Inflation rate	0.105	0.011	1.000		
Effective Marginal tax rate	0.011	-0.008	0.170	1.000	
Effective Average Tax Rate	0.158	0.004	0.003	0.018	1.000

Source: Author's computation

4.2 Results of the Pre-Estimation Results

As a starting point of the integration analysis, the paper applies the first-generation panel unit root tests which neglect the presence of both structural breaks and cross-section dependence, but are commonly used in the panel data literature on the FDI-tax nexus. Without exception, all unit root tests assume non-stationarity under the null hypothesis. Table 3 shows test for unit root using ADF, Philip Peron and Levin, Lin and Chu test from which all of the variables are stationary at level. The test results show the order of integration is zero. The test results from IPS strongly reject the null hypothesis of non-stationarity at level for all variables. Similar results are obtained using Fisher-type ADF test and LLC.

Table 3: Unit Root tests

Variable	IPS (t-bar statistics)	Fisher-type (ADF - Z)	Levin-Lin-Chu	Order of Integration
	Level	Level	Adjusted t*	
Foreign Direct Investment	-4.7391***	-18.4427***	-4.2748***	I(0)
Exchange rate	-2.9543***	-12.4621***	-11.7519***	I(0)
Inflation	-2.9327***	-12.3656***	-5.3508***	I(0)
Effective Marginal tax rate	-3.2412***	-15.0201***	-14.2833***	I(0)
Effective Average tax rate	-3.9154***	-20.4218***	-11.3725***	I(0)

Source: Author's computation[5]

Therefore, the consideration of structural breaks and, additionally, cross-section dependence should provide more reliable results. Consequently, this paper applies the second-generation panel unit root test proposed by Bai and Carrion-i-Silvestre (2009) as a second step. This test allows for structural breaks in the level, slope or both, which can occur at different dates for different countries and may

[5] Probabilities for the Fisher-type tests are computed using an asymptotic Chi-square distribution. All other tests assume asymptotic normality. The choice of lag levels for IPS and Fisher-ADF test are determined by empirical realisations of the Schwarz Information Criterion. The LLC test was computed using the Bartlett kernel with automatic bandwidth selection. *** indicates significance at the 1% levels.

© 2023 Great Britain Journals Press

have different magnitudes of shift. Furthermore, the common factor approach enables the common shocks to affect countries differently via heterogeneous factor loadings.

The results of the test developed by Bai and Carrion-i-Silvestre (2009) are presented in Table 4 and confirm the finding of non-stationarity in the Effective Marginal Tax Rate and Inflation variables without trend and in the presence of trend Exchange Rate, Effective Marginal Tax Rate and Inflation become non-stationary. The null hypothesis of a unit root cannot be rejected for all tests in the model without any trend, with a trend. This also confirms the presence of Cross-sectional dependence among variables.

Table 4: Pesaran (2007) Panel Unit Root test (CIPS)

Variable	Specification without trend		Specification with trend	
	Zt-bar	P-value	Zt-bar	P-value
Foreign Direct Investment	-13.058***	0.000	-10.291***	0.000
Exchange rate	-3.597***	0.000	2.211	0.986
Effective Average tax rate	-14.733***	0.000	-12.058***	0.000
Effective Marginal tax rate	30.386	1.000	28.141	1.000
Inflation rate	30.386	1.000	28.141	1.000

Source: Author's computation

Once integration of order one is established, the next step is to determine whether a long-run relationship between FDI and tax exists. To examine the existence of a cointegration relationship this study repeats both types of tests, with and without structural breaks and cross-sectional dependence. Firstly, the first-generation panel cointegration tests proposed by Kao (1999) and Pedroni (1999, 2004), are applied. Kao (1999)'s test is a generalisation of the Dickey-Fuller (DF) and Augmented Dickey-Fuller (ADF) tests in the context of panel data. Pedroni proposes seven test statistics that can be distinguished in two types of residual based tests. Four tests are based on pooling the residuals of the regression along the within-dimension of the panel (panel tests), while three are based on pooling the residuals along the between-dimension (group tests). Both Kao and Pedroni assume the null hypothesis of no cointegration and use the residuals determined by a panel regression to construct the test statistics and determine the asymptotically normal distribution.

Table 5: reports the empirical results of Kao's and Pedroni's panel cointegration tests. With the exception of the panel rho-statistic in the case with trend, none of the test statistics result into failure to reject of the null hypothesis of no cointegration. Hence, the results of these first-generation panel cointegration tests that neither allow for structural breaks nor cross section dependence provide evidence for a long-run equilibrium relationship between FDI and Tax.

Table 5: Cointegration test

	Test Statistics	Without trend	With Trend
		FDI	FDI
Pedroni Test	Panel-*v*	-5.353***	-7.8909***
	Panel-*rho*	1.130	3.2774***
	Panel-PP	-13.676***	-16.2736***
	Panel-ADF	-12.344***	-14.6621***
Kao	*t*	-7.2757***	-7.8909***

Source: Author's computation

© 2023 Great Britain Journals Press

4.3 Results of the Empirical Estimations

This section presents the econometric results of the effect of Foreign direct investment and tax policy changes.

4.3.1 GMM Estimation Technique

Table 6 presents the estimated empirical results using the Arellano and Bover GMM two-stage estimates. The Windmeijer (2005) WC- robust estimator is used to correct heteroskedasticity in our data. The test for serial autocorrelation shows that the specified model is free from autocorrelation problem with the p-value greater than the threshold of 5 percent hence failing to reject the null hypothesis of no autocorrelation. Sargan test of over-identification as well fail to reject the null hypothesis of over-identification meaning that the used instrumental variables are valid. It implies that instrumental variables are uncorrelated to some sets of residuals therefore are acceptable. Based on the above diagnostic tests, the model is well specified and inference can be made.

Table 6: GMM two-step results of the effect of EMTR and EATR on FDI in Tanzania

Variables	Coefficient	Std. Err.	z	P>z	[95% Conf. Interval]	
Lag Foreign Direct Investment	0.1507***	0.0301	5.00	0.000	0.0917	0.2097
Exchange rate	-0.0320	0.1306	-0.25	0.806	-0.2879	0.2238
Effective Average tax rate	0.0784***	0.0200	3.91	0.000	0.0392	0.1177
Effective Marginal tax rate	-0.0335***	0.0075	-4.46	0.000	-0.0483	-0.0188
Inflation rate	1.8189***	0.5457	3.33	0.001	0.7494	2.8884
Constant	0.7575	0.7493	1.01	0.312	-0.7112	2.2261
N= 918						
AR(1) P-value = 0.000						
AR(2) p-value = 0.577						
Sargan Test p-value = 1.000						

Source: Author's computation
*Asterisks ***, ** and * means significance level of 1%, 5% and 10%, respectively.*

The empirical results in Table 6 show that all variables display appropriate sign as anticipated. The GMM-two step estimates show that coefficient of exchange rate is negatively but not statistically significant. The coefficient of the EATR is positive and statistically significant at 5 percent. This implies that on average, one-point change in the EATR leads to a 0.078 percentage increase in the FDI of Tanzania. However, the coefficient of EMTR is negative and statistically significant at 1 percent. This means that a point change of EMTR reduces FDI by 0.034 percent. Nevertheless, Inflation coefficient is positive and statistically significant at 1 percent level. This indicates that a change in Inflation results into an increase in FDI by 1.82 percent.

4.3.2 Pooled Mean Group (PMG), Mean Group (MG) and Dynamic Fixed Effect (DFE) Estimates

Table 7 shows the effects of EATR and EMTR on Foreign Direct Investment being estimated using the PMG, MG and DFE model. Reference is made on PMG results as evidently by the houseman tests. Nonetheless, the error correction term has the expected negative sign and is statistically significant at 1 percent, insisting that there exists a long-run relationship between commodity price volatility and trade tax. Also, the paper cannot rely on PMG results since the model is being affected by cross-sectional dependence problem.

© 2023 Great Britain Journals Press

Specifically, the correlation coefficients between the time-series for each panel member were used. CD statistic is standard normally distributed under the null hypothesis of cross-section independence; thus, the null hypothesis is rejected when the p-value is less than 0.05. This implies that the PMG estimator fail to address the cross-units' dependence which solidifies the accuracy of PMG estimates to be questionable.

In order to address this shortcoming, the paper employed the CS-ARDL, which involves the inclusion of additional lagged cross-sectional averages of both the dependent and independent variables in the estimation and thus solve the cross-sectional dependence problem.

Table 7: PMG, MG and DFE Estimates

	PMG	MG	DFE
Long-run Estimates			
Exchange rate	-0.0083***	1.0692***	0.9054***
	(0.0024)	(0.2382)	(0.2044)
Effective Average tax rate	0.0310***	0.4422	0.0526
	(0.0039)	(0.5399)	(0.0544)
Effective Marginal tax rate	-0.0044***	0.1696***	0.1784***
	(0.0011)	(0.0578)	(0.0316)
Inflation	0.1721**	5.9016	8.0690***
	(0.0734)	(4.0557)	(1.7878)
Error Correction Term	-0.7277***	-1.0298***	-0.8405***
	(0.0416)	(0.0456)	(0.0313)
Short-run Estimates			
D.Exchange rate	0.0571	-0.4402**	-0.3377**
	(0.1924)	(0.2081)	(0.1472)
D. Effective Average Tax Rate	0.9217***	0.1283	0.0082
	(0.2068)	(0.2873)	(0.0320)
D. Effective Marginal Tax Rate	-0.1320***	-0.1788***	-0.1841***
	(0.0263)	(0.0319)	(0.0198)
D.Inflation	3.3157**	-2.0072	-3.2781***
	(1.6389)	(2.0118)	(1.2451)
Constant	0.6560***	-5.3837***	-4.0603***
	(0.1625)	(1.6145)	(0.9310)
N	918	918	918
Hausman Test PMG & MG	0.0094***	0.05	
Hausman Test PMG & DFE	0.000***		0.05
Pesaran CD Test	0.000***		

Source: Author's computation
*Standard errors in parentheses * p<0.10, ** p<0.05, *** p<0.010*

4.3.3 CS-ARDL Estimates

According to Chudik and Pesaran (2013), the "CS-ARDL model augments the ARDL model with the linear combination of the average cross-sectional of both the dependents variables and independent variables to capture the cross-sectional correlation in the error term". Chudik and Pesaran (2015) added that in the estimation of the CS-ARDL, both "mean group (MG)" and "pooled mean group (PMG)" estimators were used. It has to be noted that the time dimension is required to be large enough for the model to be calculated for each cross-country unit. Nevertheless, a sufficient number of lagged cross-section averages is required to be included so that validity of the estimators can be ensured. In reference to previous studies, some suggested a lag length of 2 (Eberhardt and Presbitero 2015), while

© 2023 Great Britain Journals Press

Chudik and Pesaran (2013) suggests that the lag length should not exceed 3. Therefore, 2 lags were selected for our estimation. Table 8 presents CS-ARDL estimates.

Table 8: CS-ARDL Estimates (Selected Model: ARDL (2, 2, 2, 2, 2))

Variable	Coefficient	Std.Error	t-Statistic	Prob.*
Long-run				
Exchange rate	1.4421***	0.1430	10.09	0.000
Effective Average Tax rate	0.1357**	0.0588	2.31	0.022
Effective Marginal Tax rate	0.1106***	0.0186	5.93	0.000
Inflation	0.1937	1.0135	0.19	0.849
Error Correction Term (ECT)	-0.6317***	0.0620	-10.19	0.000
Short-Run				
D(Foreign Direct Investment(-1))	-0.0085	0.0493	-0.17	0.864
D(Exchange rate)	-0.8342***	0.3117	-2.68	0.008
D(Exchange rate (-1))	-0.7733**	0.3619	-2.14	0.033
D(Effective Average Tax rate)	0.7547**	0.3392	2.22	0.027
D(Effective Average Tax rate (-1))	0.2587	0.2422	1.07	0.286
D(Effective Marginal Tax rate)	-0.1474***	0.0418	-3.53	0.001
D(Effective Marginal Tax rate (-1))	0.0783**	0.0305	2.57	0.011
D(Inflation)	5.6583**	2.2455	2.52	0.012
D(Inflation(-1))	4.0997*	2.3837	1.72	0.086
Constant	-4.5806***	0.6130	-7.47	0.000

Source: Author's computation

*Asterisks ***, ** and * means significance level of 1%, 5% and 10%, respectively.*

From Table 8, the estimated coefficient of Error Correction term (ECT) (-0.6317) is negative and significance, which shows the ability to return to equilibrium in the cause of a shock or disequilibrium, the ECT coefficient must be negative and significant (Odugbesan and Rjoub, 2019). In addition, the negative and significance of the ECT coefficient indicate a stable long-run cointegration among the variables in the estimation.

The estimates results, as presented in Table 8, show Exchange Rate, Effective Average Tax Rate (EATR) and Effective Marginal Tax Rate (EMTR) to have positive and significant coefficients. The result shows that a percentage increase in exchange rate will increase FDI inflows by about 1.44 percent in the long-run, holding all other variables constant at 1 percent significance level. Similarly, the coefficients for EATR and EMTR are positive statistically significant at 5 percent and 1 percent meaning that holding other variables constant, a percentage change in EATR and EMTR will increase FDI in Tanzania by 0.14 percent and 0.11 percent respectively in the long-run.

In the short-run estimates, the coefficients of change in Exchange Rate and change in its lag are negative and statistically significant. The negative sign indicates that change in Exchange Rate and change in its lag reduces the FDI inflows by 0.83 percent and 0.77 percent, respectively. However, the coefficient of change in EATR is positive and statistically significant which implies that a point change in the change of EATR results into an increase of FDI inflows by 0.75 percent. Nevertheless, the coefficients of change in EMTR and change in its lag are statistically significant with a negative and positive signs respectively. This implies, a unit change in the change of EMTR leads into reduction of FDI by 0.15 percent while a change of its lag results into an increase of 0.08 percent in FDI.

© 2023 Great Britain Journals Press

Nonetheless, the coefficients of change in inflation and its lag is positive and statistically significant. It indicates that a unit change in the change of inflation and its lag results into an increase of FDI by 5.66 percent and 4.1 percent, respectively.

V. CONCLUSION

This paper analysed the impact of taxes on the FDI inflows in the country. The results of the CS-ARDL estimates have revealed that both EMTR and EATR have positive and statistically significant relationship with the FDI inflows in the country. The result shows that in the long-run, a percentage changes in EATR and EMTR will increase FDI inflows in Tanzania by 0.14 percent and 0.11 percent. The short-run results indicate that a percentage change in the EATR results into an increase of FDI inflows by 0.75 percent, whereas, a unit change in the change of EMTR leads into reduction of FDI inflows by 0.15 percent.

These results signify that incentives provided by the Government to attract foreign investment has yielded the anticipated results for the country but more still needs to be done to achieve the level of growth desired. This, among others, can be done through facilitating the integration of the Tanzanian economy into the regional and global value chains by promoting import-substitution industries and broaden products mix in the niche areas such as: iron and steel industries; manufacturing industries for sugar, soap detergents, cosmetics, textiles; transportation sector; and agriculture sector such as maize seeds and edible oils.

REFERENCES

1. A-De-Moji, R., & Ederveen, S. (CESifo Working Paper). Taxation and the Foreign Direct Investment: A Systhesis of Empirical Research. *2001*.
2. Ameer, W., & Sohag, K. (2020). The Impact of OFDI and Institutional Quality on Domestic Capital Formation at the Disaggregated Level: Evidence for Developed and Emerging Countries. *Sustainability*.
3. Becker, J., Fuest, C., & Rieder, N. (2012). Corporate Tax Effects on the Quality and Quantity of FDI. *European Economic Review*, 56(8), pp 1495-1511.
4. Bigsten, A., & Danielsson, A. (1999). Is Tanzania an Emerging Economy? A Report for the OECD project "Emerging Africa". *OECD*.
5. Boly, A., Coulibaly, S., & Kere, E. N. (2019). Tax Policy, Foreign Direct Investment and Spillover Effects. *Working Paper Series N° 310, African Development Bank, Abidjan, Côte d'Ivoire*.
6. Brandstetter, L., & Jacob, M. (2013). Do Corporate Tax Cuts Increase Investment? *Arqus Discussion Paper*, 153.
7. Chudik, A., Mohaddes, K., Peasaran, M. H., & Raissi, M. (2013). Debt, Inflation and Growth: Robust Estimation of Long-Run Effects in Dynamic Panel Data Model. *Globalization and Monetary Policy Institute*.
8. Cruz, C., Florian, D. E., & Amal, M. (2020). The OLI Paradigm as a Comprehensive Model of FDI Determinants: a Sub-National Approach. *International Journal of Emerging Markets*.
9. Desai, M. A., Foley, C. F., & Hines, J. R. (2004). Foreign Direct Investment in a World of Multiple Taxes. *Journal of Public Economics*, 88, pp 2727-2744.
10. Devereux, M. P., & Freeman, H. (1995). The Impact of Tax on Foreign Direct INvestment; Empirical Evidence and the Implications for the Integration Schemes. *International Tax and Public Finance*, 2(1), pp 85-106.
11. Field, L. P., & Heckemeyer, J. H. (2008). FDI and Taxation: A Meta Study. *ZEW Discussion*.
12. Gresik, T. (2001). The Taxing Task of Taxing Multinationals. *Journal of Economic Literature*, pp 800-838.
13. Haufler, A., & Wooton, I. (1999). Country Size and Tax Competition for Foreign Direct Investment. *Journal of Public Economics*, 71, pp 121-139.

© 2023 Great Britain Journals Press

14. Hines, J. R., & Rice, E. M. (1996). Fiscal Paradise: Foreign Tax Heavens and American Business. *Quarterly Journal of Economics*, 109(1), pp 149-182.
15. James, S. (2013). Tax and Non-Tax Incentives and Investments: Evidence and Policy Implications. *World Bank*.
16. Jones, C., & Temouri, Y. (2016). The determinants of tax haven FDI. *Journal of World Business*, 51(2), pp 237-250.
17. Kao, C. (1999). Spurious Regression and Residual-Based Tests for Cointegration in Panel Data. *Journal of Econometrics*, 1 -44.
18. King, M. A., & Fullerton, D. (1984). The Taxation of Income from Capital: A Comparative Study of the United States, the United Kingdom, Sweden, and Germany. *National Bureau of Economic Research, Inc*.
19. Leibritz, W., Thornton, J., & Bibbee, A. (1997). Taxation and Economic Performance. *OECD Economics Departmental Working Papers*, 176.
20. Levin, A., Lin, C. F., & Chu, C. S. (2002). Unit Root Tests in Panel Data: Asymptotic and Finite-Sample Properties. *Journal of Econometrics*, pp 1 -24.
21. Levin, J. (2005). Taxation in Tanzania: Revenue Performance and Incidence. *Swedish International Development Cooperation Agency*.
22. Mdee, E. O., Aikael, J., & Luvanda, E. (2022). The Impact of Taxes on Capital Formation in Tanzania. *African Journal of Economic Review*, 10(5).
23. Mkonyi, G. N., Kirori, G. N., & Macheru, J. (2022). The Effect of Corporate Income Tax on FDI Inflow in the Mining Sector in Tanzania. *International Journal of Economics*, 7(2), pp 1-36.
24. Mutti, J., & Grubert, H. (2004). Empirical Asymmetries in Foreign Direct Investment and Taxation. *Journal of International Economics*, 62(2), pp 337-358.
25. Nguyen, T. L., & Saleh, A. S. (2018). The Impact of Governmnet Policies on FDI Decision of Multinational Corporations: an Application to the Vietnamese Service Industry. *International Journal of Economics and Business Research*.
26. Nistor, I. A., & Gragos, P. (2013). Taxation and Its Effect on Foreign Direct Investments - The Case of Romania. *Financial Sciences*, 3(16).
27. Oxelheim, L., Randoy, T., & Stonehill, A. (2001). On the Treatment of Finance-Specific Factors Within the OLI Paradigm. *IUI Working Paper*.
28. Pedroni, P. (1999). Critical Values for Cointegration Tests in Heterogeneous Panels with Multiple Regressors. *Oxford*, 653-670.
29. Scholes, M., & Wolfson, M. A. (1990). The Effects of Changes in Tax Law on Corporate Reorganization Activity. *Journal of Business*, 63, pp 141-164.
30. Swenson, D. (2001). Transaction Type and the Effect of Taxes on the Distribution of Foreign Direct Investment in the United States. *International Taxation and Multinational Activity*.
31. UNCTAD. (2022). *World Investment Report, 2022: International Tax Reforms and Sustainable Investment*. New York, United States of America: United Nations.
32. URT. (2013). *Tanzania Investment Report 2012*. Dar es Salaam, Tanzania.: National Bureau of Statistics (NBS).
33. Wilson, J. D. (1991). Tax Competition with Interregional Differences in Factor Endowments. *Regional Science and Urban Economics*, 21(3), pp 423-451.
34. Wilson, J. D. (1991). Tax Competition with Interregional Differences in Factor Endowments. *Regional Science and Urban Economics*, 21(3), pp 423-451.
35. Yoo, K. Y. (2003). Corporate Taxation of Foreign Direct Investment Income 1991 -2001. *OECD*.
36. Young, K. H. (1988). The effects of Taxes and Rates of Return on Foreign Direct Investment in the United States. *National Journal*, 41(1), pp 109-121.
37. Zodrow, G., & Miszkowski, P. (1986). Pigou, Tiebout, Property Taxation and the Underprovision of Local Public Goods. *Journal of Urban Economics*, 19, pp 356-370.

© 2023 Great Britain Journals Press

Scan to know paper details and
author's profile

Development of tax Administration 2023 in Russia

PhD Shestakova E.V

ABSTRACT

Tax administration is constantly evolving and changing. It is necessary to understand that the task of the state is to increase tax collection and improve tax administration. This task is particularly acute given the budget deficit. The main directions of tax administration are fixed in the Main Directions of the budget, tax and customs tariff policy for 2023 and for the planning period of 2024 and 2025. However, other important aspects of tax administration are also developing.

Keywords: tax administration, taxation, tax changing, tax collection, tax developing.

Classification: JEL: H26

Language: English

Great Britain Journals Press

LJP Copyright ID: 146431
Print ISSN: 2633-2299
Online ISSN: 2633-2302

London Journal of Research in Management and Business

Volume 23 | Issue 6 | Compilation 1.0

© 2023. PhD Shestakova E.V. This is a research/review paper, distributed under the terms of the Creative Commons Attribution-Noncom-mercial 4.0 Unported License http://creativecommons.org/licenses/by-nc/4.0/), permitting all noncommercial use, distribution, and reproduction in any medium, provided the original work is properly cited.

Development of Tax Administration 2023 in Russia

PhD Shestakova E.V.

ABSTRACT

Tax administration is constantly evolving and changing. It is necessary to understand that the task of the state is to increase tax collection and improve tax administration. This task is particularly acute given the budget deficit. The main directions of tax administration are fixed in the Main Directions of the budget, tax and customs tariff policy for 2023 and for the planning period of 2024 and 2025. However, other important aspects of tax administration are also developing.

Keywords: tax administration, taxation, tax changing, tax collection, tax developing.

I. TAX BENEFIT ASSESSMENT SYSTEM

In any taxation system, tax benefits are applied.

Tax benefits are applied to certain types of activities, for example, in medicine, education, public catering, and the IT industry. Tax benefits apply to VAT and income tax. Benefits for insurance premiums are also provided for NGOs and the IT industry.

Such benefits are subject to special verification and accounting, because when implementing any benefits, the budget receives less revenue. In order to assess the effectiveness of existing investment tax benefits, the analytical system "Efficiency of Benefits" was put into operation in 2022, the functionality of which allows:

- To assess the impact of investment tax benefits (preferential tax regimes) on the financial and economic performance of taxpayers in comparison with the average industry indicators;
- To assess the impact of the investment tax benefit (preferential tax regime) on the dynamics of investment, employment, labor costs and R&D;
- To carry out an assessment both for each taxpayer and aggregated within the framework of an investment tax benefit (preferential tax regime);
- To draw a conclusion about the effectiveness of the provided investment tax benefits (preferential tax regimes) and the need for their "adjustment".

The system was used to analyze the effectiveness of investment tax benefits (35 investment tax benefits, including 12 preferential tax regimes and 23 separate investment tax benefits) for a 5-year period from 2017 to 2021. Accordingly, the state analyzes investment benefits, concession agreements, investment agreements.

II. SINGLE TAX PAYMENT

A single tax payment will allow the tax authority to write off arrears, as well as current taxes. At the same time, if the current funds are not enough to pay taxes, fines and penalties will be accrued in proportion to the amounts of all taxes paid. At the same time, a single balance is formed for all types of taxes.

The main idea is that the transfer of funds to the budget will not be carried out separately for each type (separately – income tax, separately – VAT, and so on), but by a general transfer from the organization's current account. Also, changes in tax administration have had an impact on the refund and offset of tax. So, if earlier it was necessary to make a set-off on the application, now taxes will be written off in any case from a

© 2023 Great Britain Journals Press

single tax account. You can set off a positive balance:

- Against future payments for a specific tax and contribution;
- Payment of taxes and contributions of a third party;
- Execution of decisions of the tax inspectorate on bringing to responsibility;
- Repayment of arrears on tax payments that are not taken into account in the aggregate of obligations.

The calculation procedure and the composition of the accounting documentation will not change, but the deadline for payment and delivery of securities will be unified.

If earlier the term of one payment could fall on the 25th of the month, another on the 28th, and the third on the 30th, now it's in the past. Starting from the New Year, a general procedure will be applied for all taxes: first you need to submit reports (this must be done no later than the 25th of the month), then no later than the 28th the payment takes place directly.

If advance payments on taxes and various contributions need to be paid before submitting documents, you need to submit a notification of the calculated amounts of payments, which must be done no later than the immediate submission, that is, no later than the 25th of the month of payment.

III. COLLECTION OF UNPAID TAXES

Federal Law No. 263-FZ of 14.07.2022 "On Amendments to Parts One and Two of the Tax Code of the Russian Federation" provides for a new procedure for debt collection.

At the same time, one of the main changes in the procedure for collecting tax debts is that next year a register of debt collection decisions taken by tax authorities (hereinafter referred to as the Register) should appear, which banks will have access.

It is possible that bailiffs and other authorities and organizations will also get access to the register. The rules for the functioning of the Register will be approved by the Federal Tax Service of Russia.

Arrears in the payment of taxes, fees and insurance premiums (hereinafter referred to as arrears) are understood to be the negative balance of the payer's income (it is formed when the total tax liability exceeds the total amount of funds accounted for as EPP). The specified debt includes the total amount (Clause 2 of Article 11 of the Tax Code of the Russian Federation as amended. Law No. 263-FZ):

- Arrears (amounts of taxes, fees, insurance premiums that are not paid by the payer on time);
- Penalties, fines, interest accrued in accordance with the Tax Code of the Russian Federation, but not paid by the payer;
- Taxes subject to refund to the budget system of the Russian Federation (restoration) in cases provided for by the Tax Code of the Russian Federation.

At the same time, all information about the presence of debt is sent by the supervisory authority to the appropriate register of debt collection decisions taken by the tax authorities (hereinafter referred to as the Register), to which banks will have access. Accordingly, such a register will have negative consequences for companies, since the reputation of the company suffers, banks, leasing companies may refuse further lending due to information about non-payment of taxes.

The register will also reflect the following information:

- Instructions to banks to write off and transfer the amount of debt to the budget;
- Orders for the transfer of the payer's electronic funds to the budget;
- Information about changes in the amount of debt (including the formation of a positive or zero balance of the debt);
- Information about the court decision that has entered into force, on the basis of which the collection is made (in the case when the tax authorities miss the two-month period for

© 2023 Great Britain Journals Press

collection in an undisputed manner and go to court within the next four months);
- Information about the effective court decision on debt collection from a citizen.

The placement of the above documents (information) in the Register in 2023-2024 will be considered their direction to banks. In addition to the decision on collection itself, the tax authorities will also place in the Register: instructions to banks to write off and transfer the amount of debt to the budget, indicating the payer's accounts and the amount of funds to be transferred (in an amount not exceeding the negative balance of the single tax account). From the moment the order is placed in the Register, these funds in these accounts are blocked to ensure the execution of the debt collection decision (clause 2 of Article 76 of the Tax Code of the Russian Federation).

The procedure for debt collection at the expense of property is applied by the Federal Tax Service in case of insufficient or absence of funds (precious metals) on the payer's accounts or his electronic funds, as well as in the absence of information about these accounts or information about the details of electronic means of payment used by the payer for electronic money transfers (Clause 11 of Article 46 of the Tax Code of the Russian Federation). From 01.01.2023, the debt will be collected at the expense of the payer's property (including cash) by the bailiff (hereinafter referred to as the bailiff) on the basis of the resolution of the Federal Tax Service. At the same time, now, simultaneously with sending this resolution to the bailiff, the tax authorities are obliged to place it in the Register (indicating information about sending it to the bailiff).

Placement in the Register of the order of the Federal Tax Service for the transfer of the amount of debt under the rules of Article 46 of the Tax Code of the Russian Federation on the basis of a court decision will occur only when collecting non-cash funds and precious metals on accounts (in the bank deposit).

IV. USING A SPECIAL INFORMATION PROCEDURE

Currently, new forms of informing taxpayers are being developed. If you have not consented to SMS or E-mail notification, if your phone number or e-mail address is indicated incorrectly or you are ready to refuse further information about the presence of arrears and (or) arrears on penalties, fines, interest, you have the right to apply to the tax authority at the place of registration with a statement in the prescribed form about refusal of SMS or E-mail notification. The application can be submitted on paper in person or through a representative, sent by registered mail, transmitted electronically via telecommunication channels or through the taxpayer's personal account.

V. DIGITALIZATION OF THE ACTIVITIES OF TAX AUTHORITIES

The digital economy of taxation is not just a technology in the tax sphere, but a new level of interaction between tax authorities, organizations and citizens. Currently, digital systems in taxation continue to develop. The most famous of such systems is the ASK-2 VAT verification system. However, if we talk about the practice of using this system, at present the tax authorities combine digital technologies with rather old technologies of calling the taxpayer to the commission. The purpose of this commission is to encourage the taxpayer to pay additional taxes to the budget.

The changes in VAT tax administration include aspects related to the application of tax deductions. From January 1, 2023, all amounts to be reimbursed from the submitted declarations are included in the total obligation of the payer. As a result, VAT recoverable will now be accounted for on a Single Tax Account.

If the VAT refund amounts form a positive balance, they can be offset against future tax payments or returned to the settlement account. All VAT tax returns are filed electronically, the book of purchases and sales goes as an appendix to the declaration, and all tax reporting is pulled

© 2023 Great Britain Journals Press

together in data processing centers. VAT declarations undergo an automated desk tax audit, according to the results of which taxpayers who have made mistakes receive requests for explanations on control ratios or discrepancies in these invoices.

ASK VAT-2 allows you to compare the data of the invoices of the Buyer and Seller, build chains of counterparties and form a vector of evidence (the presence of intent, consistency of actions of counterparties) in accordance with the norms of tax legislation, i.e. identification of beneficiaries of the tax gap. The program analyzes all the declarations submitted by the payer for all tax periods.

Next, the records of invoices from the Buyer and Seller are compared, and in case of discrepancies, a requirement with a protocol of discrepancies is automatically generated.

If such claims are received, the taxpayer must: - firstly, send a receipt to the tax authority via telecommunication channels (TCS) on receipt of the document (Clause 5.1 of Article 23 of the Tax Code). In case of failure to submit a receipt for the receipt of the claim,

- The tax authority has the right to make a decision to suspend the flow of funds on the taxpayer's bank accounts;
- Secondly, after analyzing the mistakes made, it is necessary to submit an updated VAT return with corrected entries.

What errors cause questions from the control body and the likelihood of a call to the tax commission?

unilateral change of the invoice details when it is reflected in the purchase book. So, this is not a correct indication of the invoice number and date, the counterparty's TIN, etc. It is not uncommon for counterparties to be assigned the same TIN, or not to reflect the counterparty's TIN at all, which also entails discrepancies. These details must be identical for both the Buyer and the Seller, and correspond to the real data;

- Incorrect filling in of cost indicators when exercising their right to deduction partially. A taxpayer who enjoys the right of partial deduction for VAT, indicate the number and date of the invoice, the counterparty's TIN /KPP and the cost of goods (works, services) in full, and the amount of VAT, only in the part that is presented for deduction;
- Incorrect indication of the code of the types of operations; combining several invoices into one (for example, received from Rostelecom, Megafon, etc.);
- Incorrect reflection of transactions carried out with the participation of intermediaries;
- Incorrect reflection of corrective and corrective invoices, invoices for advance transactions;
- Incorrect indication of the application number for the import of goods and payment of indirect taxes;
- Inconsistency of the information in the goods declaration with the taxpayer's data. In case of these or other errors, the tax authority may invite you to the tax commission for the purpose of your voluntary payment of taxes to the budget.

It is better to pay attention to direct tax gaps in such a situation, if the gap occurred at the second and third levels, then it is possible to prove that the taxpayer did not have an unreasonable tax benefit.

VI. TAX COMMISSION CHALLENGE

Tax commissions are not named in the Tax Code, but are actually carried out. Why did their use expand in 2023? The whole point is to reduce on-site tax audits and the development of remote control, desk inspections.

The tax authorities call such a call "on the issue of considering the activities of taxpayers in relations with organizations that have signs of tax risk, the correctness of the calculation and payment of value added tax."

A call to a meeting of the commission or working group is issued with an appropriate notification and sent to the taxpayer by mail or in electronic form. As a rule, the notification says about the

© 2023 Great Britain Journals Press

need for the general director to appear. But in agreement with the inspector, another authorized person may arrive at the IFNS.

The meeting itself is held in the office of the inspector of the IFNS alone. It was solely, despite the participation of at least two or three more officials from among the leaders (up to the deputy head of the IFNS), who are listed as signatories in the final minutes of the meeting. The inspector of the Federal Tax Service offers a "deal" — to submit updated declarations and pay VAT. If we are talking about questionable transactions outside the three—year period, a very "interesting" proposal may sound - to postpone the VAT deduction for the current period. Otherwise, the taxpayer will be hit by the full power of the yoke of the inspection in the form of an on-site tax audit, the results of which will necessarily be accrued in addition to VAT and income tax.

The following issues are clarified at the commission:

- Persons participating in the meeting;
- Agenda;
- Established facts of abuse indicating a specific period, operations and counterparties;
- Recommendations to the taxpayer (to clarify, to pay, to prevent violations of the tax legislation of the Russian Federation, to comply with due diligence measures, etc.);
- As well as a column with explanations of the taxpayer regarding the revealed tax facts, which is filled in with his own hand.

With regard to responding to such tax holidays, it is important to consider the following:

First, it must be remembered that the purpose of the IFNS is to try to force you to clarify yourself voluntarily, using primary information about transactions with a separate counterparty - as a rule, insufficient to confirm a selfish intent to evade VAT. That is, we are talking about some kind of psychological impact on specific individuals representing the taxpayer.

Secondly, the promises of the IFNS inspector, in case of full implementation of all recommendations, does not exclude the possibility of conducting an on-site tax audit against you — in particular, reviewing the tax obligations fulfilled during the meeting of the commission or working group.

What should a taxpayer do in such a situation?

- Establish as friendly relations as possible with the inspector of the IFNS, creating a basis for the implementation of the overall strategy
- Before starting, ask the inspector to explain the order of the meeting and inform about its subject or agenda;
- During the conversation, answer the questions of the IFNS inspector only in the part concerning the subject of the meeting, without destroying the friendly atmosphere
- To questions about specific counterparties and questionable transactions with them, if possible, be limited to answers about the need for an internal internal audit, the results of which are to provide the information of interest to the IFNS. The expediency is not to be unfounded and subsequently provide information and supporting documents and information;
- It is mandatory to include written explanations regarding the taxpayer's position in the final minutes of the meeting (approx. — an answer will be given within the specified period), including if there is an intention to conduct an internal internal audit, and if it is impossible to make explanations and refuse to provide it, reflect such a position in a separate appeal addressed to the head of the IFNS).
- It is important to avoid situations where a taxpayer may become the object of close attention of regulatory authorities. What are these situations?
- The presence of losses for the last 3 years, the lack of information about losses.
- Low tax burden on income tax, excise taxes, single tax under the "simplified tax system", ESHN, personal income tax paid by sole proprietors.
- Low VAT tax burden (occurs when the share of VAT deductions exceeds 89%).

© 2023 Great Britain Journals Press

- Arrears on personal income tax or payment of tax is 10% less compared to the previous tax period.
- The salary of employees is less than the minimum wage or the average salary in the industry.

VII. PROVIDING EXPLANATIONS TO THE TAX AUTHORITY

The organization has the right to submit to the tax authority explanations confirming the correctness of the calculation of transport and (or) land taxes, the validity of the application of reduced rates, tax benefits, etc., if it does not agree with the amounts of taxes indicated in the message received from the tax authority (Order of the Federal Tax Service of Russia dated 30.03.2022 No. ED-7/21/247@, letter of the Federal Tax Service Of Russia dated 04/29/2022 No. BS-4-21/5313@).

Explanations can be submitted in paper or electronic form. According to clause 4 of Article 31 of the Tax Code of the Russian Federation, the form, format and procedure for filling in explanations must be approved by the Federal Tax Service of Russia.

The Order of the Federal Tax Service of Russia dated 30.03.2022 No. ED-7/21/247@ approved the form of explanations submitted to the tax authority in electronic form, the procedure for filling it out and the format of submission. The order is valid from May 9, 2022. At the same time, in terms of explanations on property tax, the order comes into force on January 1, 2023.

VIII. USE OF TAXPAYER'S PERSONAL ACCOUNTS

Currently, taxpayers' personal accounts are quite common. This is a convenient service that allows you to manage tax administration. It is possible to open a taxpayer's personal account with a tax authority.

In terms of view of tax administration, users of personal accounts of legal entities and individual entrepreneurs can send an appeal to the tax authority to cancel the suspension of account transactions through the service and attach to it supporting documents on repayment of the debt to the budget. This function has already been used by 25,000 taxpayers.

Persons who do not have personal accounts can use the new service of the Federal Tax Service of Russia "Operational assistance: account unblocking". It allows you to quickly contact the operator of the Account Rehabilitation Assistance Center. During the day, information on the current status of the decision to suspend the account and the possibilities for its cancellation will be provided by the phone number specified in the taxpayer's electronic message.

If a taxpayer has an obligation to pay taxes, fees, insurance premiums, penalties and fines, but he cannot pay them within the prescribed period, then he has the right to apply to the tax authority for a delay or installment payment.

A deferral or installment plan may be granted by the tax authority for a period not exceeding 1 year from the date of the established payment deadline.

Obtaining deferred and installment payments for taxes and fees

Deferral and installment payment of taxes is a change in the deadline for their payment by transferring the deadline for transferring money to the budget to a later date. The main difference between a tax deferral and an installment plan is that with a deferral, the amount of tax arrears is repaid at a later date at a time, and with an installment plan – in stages during the entire period for which the installment plan was provided. Tax deferrals are provided for up to one year, and installments – for up to three years.

Deferral and installments can be obtained both for the payment of taxes and contributions that have not yet come due, and for the payment of arrears – in respect of all or part of the amount of the negative balance of the unified tax account. In the second case, a deferral (installment plan) is granted if there is a negative balance on the day of the decision to grant a deferral (Clause 3 of Article 61 of the Tax Code of the Russian

© 2023 Great Britain Journals Press

Federation). A deferral or installment plan may be granted to a taxpayer whose financial situation does not allow paying taxes, fees, insurance premiums, penalties, fines or interest within the prescribed period if there is at least one of the following grounds (Clause 2 of Article 64 of the Tax Code of the Russian Federation):

Causing damage to the taxpayer as a result of a natural disaster or technological disaster;

- Non-provision of budgetary funds, including payment for services rendered by the taxpayer (works performed, goods delivered) for state or municipal needs;
- The threat of signs of bankruptcy in the event of a one-time payment of taxes;
- The production or sale of goods, works or services by the taxpayer is seasonal;

The impossibility of one-time payment of tax amounts based on the results of a tax audit.

A feature of 2023 is the issue of settling those deferrals and installments that were received earlier. For example, some taxpayers were granted deferrals in 2022, respectively, the tax payment deadline comes in 2023. And since a single tax payment has been adopted since 2023, taxes must be paid as part of this payment.

Let's illustrate the issue of tax payment by the example of insurance premiums. Contributions for the II and III quarters of 2022 must be transferred as part of a single tax payment to a single tax account on the following dates:

- For April 2022 – no later than May 29, 2023 (since 28.05.2023 falls on Sunday);
- For May 2022 – no later than June 28, 2023;
- For June 2022 – no later than July 28, 2023;
- For July 2022 – no later than August 28, 2023;
- For August 2022 – no later than September 28, 2023;
- For September 2022 – no later than October 30, 2023 (since 28.10.2023 falls on a Saturday).

The changes that relate to the deferral and installment of tax payments can also include changes related to the adoption of an appropriate decision on deferral and installment. Now such a decision is being made:

- The Office of the Federal Tax Service of Russia for the subject of the Russian Federation at the location (place of residence) of the payer – if the amount of insurance premiums in respect of which the payer applies for installments on their payment does not exceed 10 million rubles;
- The Federal Tax Service of Russia – if the amount of insurance premiums in respect of which the payer applies for installments on their payment, exceeds 10 million rubles. In general, the higher the level of the body that makes the decision, the more difficult it is to get such a decision. When can I get an installment plan and a deferral?

In order for the supervisory authority to make a decision, you need to apply in a timely manner. Employers applying for installments must submit an application to the authorized tax authority by April 28, 2023 inclusive.

If we talk about the complexity of processing deferrals and installments, then installments are provided without interest accrual, no surety, pledge or bank guarantee is required. But with regard to the deferral of tax payments, the tax authority may request, for example, an additional bank guarantee. At the request of the tax authority, it is necessary to submit documents on the property that can be the subject of a pledge, a guarantee or a bank guarantee.

IX. INTERAGENCY COOPERATION 2023

The tax authority works closely with other authorities for the purposes of collecting information and analyzing inconsistencies. Interdepartmental interaction with government agencies will become fully electronic from 2023.

Decree of the Government of the Russian Federation No. 338 dated 06.03.2021 "On interdepartmental information interaction within the framework of state Control (supervision), municipal control" provides for the rules of

© 2023 Great Britain Journals Press

information interaction and the transition completely to electronic exchange from 2023.

The document approves the requirements for information interaction of information systems, which are specified in the law "On State and Municipal Control".

Such systems include:

- Unified register of control measures;
- Information system of pre-trial appeal;
- Register of conclusions confirming compliance with mandatory requirements;
- Unified register of types of federal, regional and municipal control.

Other information systems can also be created for the organization and implementation of state control on the basis of municipal legal acts or regional legislation. It is also necessary to pay attention to certain features of electronic exchange with individual bodies.

As an example, we can cite the order of the Federal Tax Service of Russia dated 05/20/2022 No. ED-7-21/420@, which approved the form, the procedure for filling it out and the format for submitting information to the tax authorities about self-propelled vehicles, other types of equipment and their owners registered by the state technical supervision authorities of the subjects of the Russian Federation. In this order, information related to the address of the owner of the self-propelled vehicle, its search, manufacturer, etc. was optimized.

In conclusion, it should be noted that the general trend of tax administration can be called automation and digitalization. The signs of digital transformation include the appearance of a single tax payment, the appearance of registers, the development of the functions of personal accounts. However, it is also possible to note the development of administrative mechanisms that are not named in the tax legislation, such as tax commissions, counter checks, which can be regarded as additional bureaucratic barriers for taxpayers.

© 2023 Great Britain Journals Press