Impact of Bank Loans on the Performance of Small and Medium Enterprises

A Case Study of Mozambique

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BFIN	Bank financing
DEB	Debt ratio
GDP	Gross Domestic Product
GRW	Growth
LEV	Leverage,
MEFMI	Macroeconomic and Financial Management Institute of Eastern and Southern Africa
ROA	Return on Assets
ROE	Returns on Equity
SIZ	Size
SMEs	Small and Medium Enterprises
TANG	tangibility

ABSTRACT

The study investigates the impact of bank loans on the performance of Small and Medium Enterprises (SMEs) in Mozambique based on annual data for the period 2013 to 2017 using the Fixed Effects Model.

Findings of the study show that bank financing has a significant impact on the performance of SMEs in Mozambique. Specifically, a one percentage point change in bank loans results in a 0.35 percentage points change in performance. Other variables such as tangibility, leverage, SMEs size and growth also have a positive impact on the financial performance of SMEs.

To increase accessibility to bank financing by SMEs, the study recommends the development of targeted financial credit products suitable for SMEs and the establishment of specialised financial institutions that would provide financial products for SMEs.

Keywords: *Bank loans; Performance; Small and Medium Enterprises*

1 Chapter One: Background to the study

1.1 Introduction

A considerable number of studies have been conducted in developing countries to understand the linkage between bank financing and Small and Medium Enterprises (SMEs) performance. SMEs are given prominence since they account for over 90 percent of businesses in both developed and developing countries (Alibhai, Bell and Conner, 2017; Beck, 2013 and Fjose, 2010). Keskin et al. (2010) add that SMEs contribute about 90 percent to Gross Domestic Product (GDP) and provide around 70 percent of total employment in developing countries. Many International Organisations, Governments and Researchers have recognised the importance of small and medium enterprises. They argue that SMEs are the engine for economic growth and private sector development (Dada, 2014; Beck, 2013). Further, the Organization for Economic Cooperation and Development (OECD) (2006) shows that access to finance is critical for the growth of SMEs and in less developed and most emerging countries, firms typically depend on banks for financing, making bank loans the single most vital supplier of liquidity in economies of these countries. Commercial banks play an important role in financing SMEs (World Bank Group, 2018). Equally, Bilateral and Multilateral donors have prioritised SMEs financing (Beck, 2013).

In Mozambique, SMEs represent 96.9 percent of active enterprises and employ the majority of the labour force (Osano and Languitone, 2016). Even with this significant role SMEs play in the economy, not much research has been carried out on the impact of bank lending to SMEs. This study, therefore, investigates the impact of bank loans on the performance of SMEs in Mozambique.

1.2 Background

Financial intermediaries play an important role in the economic growth of a country (Mandiefe, 2015; Bollard and Hodgetts, 2011; Ahmad and Malik, 2009; Ayyagari, Kunt and Maksimovic,2008). Banks, as intermediaries, allocate funds from savers to borrowers by accepting deposits and providing loans (Handa, 2009). Small and Medium Enterprises rely on financial intermediaries to finance their operations before and after being established (Sibanda and Shava, 2018). The funds are mostly made available by commercial banks in the form of loans (OECD, 2006). Apart from commercial banks, other sources of finance include microfinance institutions (MFIs), factoring, venture capital firms, leasing, trade credit, and utility providers (World Bank Group, 2018, Economic and Social Commission for Asia and Pacific, 2017). According to Dube (2013), availability of other sources of funds other than the conventional sources, such as commercial banks can be viewed by SMEs as a good opportunity to expand their financial accessibility.

To understand the aims of this research, it is important from the onset to define the performance of a firm. Performance can be measured using various metrics such as] return on asset (ROA), return on equity (ROE), return on investment (ROI), gross profit margin, profit before tax, profit after tax and price-earnings. Selection of the appropriate measurement depends on the objective and aspect of performance that is being targeted (Bhattarai, 2016). For this study, ROA and ROE are used as a proxy for the performance of SMEs. This approach is similar to the one applied by Abebe and Abera (2019), Basit,(2017), and Vavatu (2015).

Evidence from empirical studies on SMEs performance is divergent. Some studies show some positive impact of bank loans on the performance of SMEs. For instance, Geoffrey and Emenike (2018), Omodi and Jagongo, (2018), Mbithe (2016), Prah (2016), Kinimi (2014) support the findings that bank loans impact SMEs' performance positively. However, other researchers found no evidence of a positive relationship between bank loans and performance of SMEs (Sibanda and Shava (2018), Oluitan (2014), Atandi and Wabwoba (2013)).

The contrasting views on bank loan impact on performance of SMEs are not only observed in empirical literature but also in theoretical literature. For example, the agency cost theory postulates that debt financing may positively impact a firm's performance since funds are made available, which allow the firm to pursue new investment opportunities with higher returns. However, interest rates may rise in future which may adversely impact income. The pecking order theory suggests the use of internal funds and that interest rates are a major factor in deciding between internal or external funds. Kebewar and Noaman (2013) posit that reasons for different findings on the relationship between bank loans and SMEs performance are due to factors such as the location of study, type of companies selected, sectors and methodologies used by researchers.

1.3 Statement of the Problem

Despite the important role that SMEs play in developed and developing countries by contributing to job creation and economic growth (Alibhai et al.,2017), state that access to finance remains one of the main constraints that policymakers should address to this particular segment (OECD, 2006). According to Kumar (2017), more than 55 percent of SMEs in the world have no access to loans from the formal financial sector. The author further observes that eliminating this constraint is the key for firm surviving and growth.

Given the critical role SMEs play, it is important to assess the impact of bank loans on the performance of SMEs in Mozambique. The relationship between bank loans and SMEs performance has never been adequately investigated in Mozambique. Thus, limited literature is available on the impact that bank loans have on SMEs' performance. This study, by examining bank loan data and SMEs performance

variables, provides an understanding of the relationship as well as augments the existing knowledge on the impact of bank loans on the performance of SMEs.

In Mozambique, scholars and practitioners alike have paid less attention to studying the impact of bank loans on performance of SMEs. The available literature on loans to SMEs in Mozambique is inconclusive. A related study on bank financing was conducted by Osano and Languiton (2016). However, the focus of the study was on factors influencing SMEs access to finance in Maputo central business district and concluded that the majority of SMEs were not aware of funding programs and financial schemes provided by the government and private sector.

1.4 Research Objective

The objective of this study is to assess the impact of bank loans on the performance of SMEs in Mozambique.

1.5 Hypothesis

In order to achieve the stated objective, the following hypothesis was formulated:

Null hypothesis: Bank loans do not have an impact on the performance of SMEs in Mozambique.

Alternative hypothesis: Bank loans have an impact on the performance of SMEs in Mozambique.

1.6 Justification

Studies on bank loan effect on SMEs performance are widespread around the world. However, in Mozambique there has never been empirical research on this topic, notwithstanding SMEs accounting for more than 96.9 percent of enterprises, employing more than 45 percent of the workforce and contributing 33.4 percent of GDP (National Institute of Statistics, 2015). In terms of industry share, SMEs make up 55 percent of the market followed by tourism with 21 percent and manufacturing with 10 percent (Ministry of Industry and Commerce, 2007). The data presented above shows the relevance of SMEs in the Mozambican economy. This, therefore calls for special attention from policymakers to this segment, particularly, financing, which is one of the main constraints that affects SMEs. This, together with the absence of a comprehensive study on the impact of bank loans on the performance of SMEs serve as motivating factors to undertake this research.

From Mozambique's perspective, this study gives a more complete evaluation of the impact of bank loans on SMEs performance. To our knowledge, a study of this nature

which investigates bank loan impact on SMEs has never been carried out in Mozambique.

Findings from this research will serve as input into policy formulation relating to bank financing of SMEs. It is envisaged that results from this study will provide useful information for policy formulation. In addition, the study will serve as a source of information for emerging entrepreneurs and provide empirical evidence for improving SMEs performance in Mozambique. MEFMI member countries seem to follow similar economic programs since they belong to the same regional economic blocs, i.e. SADC, COMESA etc. Firms, especially SMEs, face comparable conditions and possess similar characteristics, thus findings from this study may be generalised to the MEFMI region.

1.7 Definition of key concepts

1.7.1 Small and Medium Enterprises (SMEs)

According to the European Commission user guide and model declaration (2005), to qualify as SME, an entity should be engaged in economic activity, irrespective of its legal form. The guide uses the number of employees, annual turnover or annual balance sheet criteria to define enterprises. Thus:

- Small enterprises: are defined as enterprises which employ fewer than 50 persons and whose annual turnover or annual balance sheet total does not exceed 10 million Euro.
- Medium enterprises: are defined as enterprises which employ fewer than 250 persons and whose annual turnover or annual balance sheet total does not exceed Euros 50 million and Euros 43 million, respectively.

In Mozambique, the criteria used to categorise enterprises is the number of employees and annual turnover. Small enterprises are defined as having 5 to 49 employees and with an annual turnover of no more than 14.7 million Metical while Medium enterprises are firms that employ between 50 to 99 employees and with an annual turnover of no more than 29.9 million Metical (Ministry of Industry and Commerce, 2016).

1.7.2 Performance

Organizational performance can be defined as the ability of an organization to grow in terms of profit, market share and product quality in relation to other enterprises in the same industry (Obiwuru et al. 2011). Batchimeg (2017) describes performance as good conditions achieved by a company in certain periods of time.

1.8 Organisation of the rest of the report

The remainder of this study is organised as follows, section two examines the macroeconomic developments. Section three reviews theoretical and empirical literature. The methodology is discussed in section four. Section five presents the results. The study concludes with section six which presents research findings, conclusion and recommendations.

2 Chapter Two: Macroeconomic developments

2.1 Contribution of SMEs in Mozambique economic development

The business sector in Mozambique contributes about 68.6 percent of GDP of which 16.5 percent comes from small enterprises and 12 percent from medium enterprises. (Ministry of Industry and Commerce, 2007). Notwithstanding the low contribution to GDP, SMEs have a larger share comparing with large companies and contribute significantly to employment (Osano and Linguitone, 2016).

To leverage the contribution of SMEs, the Mozambican government decided to create the Institute for Promotion of Small and Medium Enterprises as a government entity responsible for the implementation of the strategy for the development of SMEs. The Institute works on implementation, consolidation and development of SMEs as well as on promoting excellence, ethics, care, efficiency, entrepreneurship, competitiveness and partnership (Kaufmann and Braun, 2016).

2.2 Profile of enterprises in Mozambique

Table 2.1 shows the structure of enterprises in Mozambique. The table indicates that Small and Medium Enterprises dominate the enterprise landscape in terms of number of companies, however, the number of employees and turnover is lower when compared with large enterprises..

Table 2.1 - Number of companies, employees and sales by category

Category	number of companies	number of employees	sales
Large	1,338	254,625	648,664,777
Medium	1,798	45,822	34,323,267
Small	39,890	162,492	163,406,211
Total	43,026	462,939	846,394,255

Source: National Institute of Statistics (2015)

Table 2.2 - Distribution of enterprises by economic activicties

Category	Agriculture and fisheries	Trade	Construction	Manufacturing, Electricity and water	Services
Large	53	395	182	246	462
Medium	56	717	181	257	589
Small	293	24,161	1,590	2,735	11,109
Total	**402**	**25,273**	**1,953**	**3,238**	**12,160**

Source: National Institute of Statistics (2015)

Table 2.2 shows the distrubuition of enterprises by economic activicties. It also shows that companies in trade and services sectors are largely SMEs.

Table 2.3 - Distribution of the enterprises by province

Category	Niassa	Cabo Delgado	Nampula	Zambézia	Tete	Manica	Sofala	Inhambane	Gaza	Maputo
Large	10	21	66	49	65	34	143	21	21	42
Medium	24	47	116	69	108	51	214	49	53	102
Small	1,239	1,772	2,423	3,254	1,589	1,425	4,482	2,177	3,156	5,333
Total	**1,273**	**1,840**	**2,605**	**3,372**	**1,762**	**1,510**	**4,839**	**2,247**	**3,230**	**5,477**

Source: National Institute of Statistics (2015).

Table 2.3 shows the distribution of entreprises across the country. The largest concentration of enterprises is in the capital city Maputo, with around 35 percent of the total.

The statistics above show that the business sector in Mozambique is mostly made up of SMEs, however, their contribution in terms of turnover is not significant (only 23 percent of total sales). To reverse the situation, a strategy for the development of SMEs was designed, which includes, improving the business environment, building technological and management capacity as well as developing strategic support for SMEs (Ministry of Industry and Commerce, 2007).

2.3 Chapter summary

The chapter shows statistics related to the business sector in Mozambique, outlining the contribution and profile of enterprises with the details on number of companies, number of employees and sales by category. The statistics also describe the distribution of enterprises by economic activities and province.

3 Chapter Three: Literature Review

3.1 Introduction

This chapter discusses literature related to the impact of bank loans on the performance of small and medium enterprises. The literature review is in two parts. The first part describes theories of business performance while the second part looks at similar studies conducted by other researchers on the impact of bank loans on the performance of SMEs.

3.2 Theoretical Literature Review

This section reviews business performance theories focusing on Pecking Order Theory, Static Trade-off Theory and Agency Cost Theory.

3.2.1 The Pecking Order Theory

The Pecking Order theory was developed by Stewaryt C. Myers (1984) and suggests that there is an order of preferences firms have regarding the available source of funding. The theory is based on the idea that firms prefer internal to external funds, thus, if external funds were available and required, firms would prefer debt as opposed to convertible bonds and equity (Myers, 1984). Frank and Goyal (2002) argue that the rationale for this preference is because outside investors would ask for a higher rate of return on equity and debt because of the risks it encompasses, making retained earnings a better source of funds for firms. Another reason given by Myers (1984) for this approach by managers of firms was that if they go for external funding, firms would be subjected to the discipline of capital markets.

A study conducted by Fortes, Barros and Nakamura (2013), on determinants of the Capital Structure on Small and Medium-Sized Brazilian Enterprises, concluded that SMEs tend to finance their financial needs with debt only after exhausting all internal resources, which is consistent with the pecking order theory. Findings by Watson and Wilson (2002) were also consistent with the pecking order theory. Watson and Wilson used Pooled Ordinary Least Squares method and concluded that SMEs prefer in the first place retained earnings over debt and the later preferred over new share issues to outsiders.

3.2.2 The static trade-off theory

The static trade-off theory is one of the contributions of the capital structure concept by Myers (1984) which examines the trade-off between the benefits of debt financing and debt-related cost. The theory challenges managers to decide between funding through debt or equity or vice versa by balancing the cost and benefits of each source of funds. The issue related to debt that managers must deal with is “how valuable the tax shields

are" and which cost of financial embarrassment is relevant in order to maximise the value of the firm.

Studies aiming to confirm the trade-off theory are divergent. For instance, Ramadan (2015) conducted a study in a Jordanian manufacturing company and concluded that firms follow partially the trade-off theory but the same approach was employed in Nigeria by Oladeji and Olokoyo (2015) and confirmed that Nigerian Petroleum Industry follows the traditional trade-off theory while in Tunisia Ghazouani (2013) concluded that profitability and capital structure of the Tunisian firms do follow the trade-off theory.

3.2.3 Agency cost theory

The agency cost theory is the contribution of Jensen and Meckling (1976). They examined the relationship between the principal and agent. The principal refers to shareholders and debt holders while the agent relates to managers acting on behalf of the principal. From these two intervenients arise the issue associated with the *separation of ownership and control*. The authors argue that there is always a conflict of interest between agent and principal in the perspective that the agent may not act in the best interest of the principal. It becomes more evident and risky for shareholders and firms when shareholders decide to contract a debt for investment opportunities with high-interest cost risk for shareholders while the benefits for the managers increase with low cost. Thus, the agency cost will incorporate monitoring expenditures by the principal, bounding expenditures by the agent and the residual loss.

Studies on the effect of agency costs on firm performance, for instance, Lachheb and Slim (2017), Hossein et al. (2013) and Wang (2010) confirm the relationship between agent cost and firm performance.

3.3 Empirical Literature Review

This section reviews studies carried out by other researchers on the impact of bank loans on the performance of small and medium enterprises.

A number of studies found a positive and significant impact of bank loans on the performance and growth of SMEs. Iloh and Chioke (2015) conducted a study on commercial bank credit availability to SMEs in Nigeria using the generalized least squares estimation technique to test the hypothesis and conclude that bank loans positively affect GDP and facilitate economic growth. Otugo et al. (2018) found similar results in a study on economic growth. Otugo et al. (2018) used ordinary least squares to estimate parameters and found that commercial bank loans contribute significantly to economic growth in Nigeria. A similar study conducted by Racheal and Uju (2018) on the role of commercial banks in financing SMEs also found that loans contribute significantly to the development of SMEs. Ombongi and Long (2018) investigated factors affecting the financial performance of SMEs in Kenya using

descriptive research and data analyzed through regression analysis. From this investigation, they found a direct relationship between SMEs performance and bank credit. Similarly, Manini et al. (2016) investigated the effects of sources of financing on the financial performance of SMEs and found that commercial bank loan financing has a positive effect on the financial performance of SMEs.

Riwayati (2017) analyzed the role of banks in improving SMEs and economic growth in Yogyakarta province, Indonesia and concluded that loans to SMEs have a significant impact on the economic growth of the district owing to the positive performance of SMEs. A study conducted in Zimbabwe by Dube (2013) on the impact of debt financing of SMEs concluded that enterprises that have received loans from banks improved their productivity, suggesting an improvement in performance.

Basit and Irvan (2017) investigated the impact of capital structure on firms' performance in Malaysia using multiple regression to analyse the relationship between ROA, ROE, earning per share (EPS) and debt to equity, total debt ratio and total equity ratio. The study established that total debt has a positive impact on ROE and an insignificant impact on ROA. The study further suggests that debt levels above the optimum capital structure will result in a negative impact on a firm's performance, thus the need to maintain an optimum debt level is vital for a firm's performance.

This conclusion corroborates findings by Vatavu (2015), who also examined the impact of capital structure and its determinants on the financial performance of Romanian companies using ROA as a measure of performance. The study concluded that Romanian companies register higher performance when they operate with limited borrowings.

Akeem et al. (2012) examined the effect of capital structure on firm´s performance in Nigeria. The study applied a multiple regression model to establish the relationship between ROA and ROE as dependent variables and measures of performance. The study included total debt to total asset ratio and total debt to equity ratio as independent variables and measures of capital structure. The results showed that capital structure was negatively associated with the performance of the selected firms. The study also shows a statistically significant relationship between total debt and firm performance.

Research findings that indicate a positive impact of bank loans on performance and growth of SMEs have been challenged by other studies with different conclusions. Oluitan (2014) studied the impact of commercial bank funding on SMEs in Nigeria and found no improvement in profitability of SMEs. Similarly, Atandi and Wabwoba (2013), investigated the effects of credit on micro and small enterprises performance in Kitale town, Kenya. Using descriptive statistics method of analysis, Atandi and Wabwoba (2013) found that credit to SMEs does not necessarily lead to an increase in assets, and does not guarantee an expansion of market share. A similar conclusion was made by Sibanda and Shava (2018) who studied the impact of SMEs access to finance and performance on exporting behaviour at the firm level in Zimbabwe. They

concluded that despite a positive impact on export behaviour of SMEs, access to finance has a negative impact on firm performance.

Nguyen et al. (2015) in their study on credit accessibility of SMEs in Vietnam found owner characteristics, educational level, gender and relationship with banks as the most important factors in determining access to credit. It was also found that firm size is one of the key factors to credit rationing (Andries et al. (2018). High-interest rates may be an impediment to Bank loan access by SMEs (Bawuah et al. 2014). A study conducted in Mexico from the supply side explained that lack of information, credit protection failures, informality and disruptions that commercial banks have experienced over time may contribute to credit rationing to SMEs (Pérez and Ontañon, 2013). However, according to the World Bank (2018), the probability of SMEs being credit constrained decreases as firm size increases especially in the least-developed regions. However, it is agreed that loans have an immediate effect on asset growth which leads to the enhanced performance of enterprises (Quas et al. 2018)

Research results on the impact of bank financing on the performance and development of SMEs are polarized. Some studies found positive relationships between bank loans and performance of SMEs, while others did not find evidence to support this assertion. The difference in methodology may be pointed out as one of the reasons for different findings. For example, Sibanda and Shava (2018) who found a negative impact of access to finance on SMEs performance, used revenue size, revenue growth, average return, growth in return and entity´s market share as a measure of performance. Atandi and Wabwoba (2013) who also found a negative impact of bank loans on SMEs performance used variables such as market share, stock level, asset held, and level of employment as a proxy of performance. On the other hand, the majority that found a positive impact of bank loans on SMEs performance used ROA as a measure of performance as for example Ombongi and Long (2018), Basit and Irvan (2017), Vatavu (2015), Akeem et al. (2012). Further, most of the relevant literature on this topic consider the total debt to compute relevant variables on financial performance such as debt and leverage. For the purpose of this study, only bank loans were considered as opposed to total debt to compute the mentioned variables as the study aims to evaluate the impact of bank loans.

3.4 Chapter Summary

The literature review discussed different theoretical and empirical perspectives. The focus was on the pecking order theory, static trade-off and agency cost theory. The empirical literature review from different countries revealed different findings on the impact of bank loans on SMEs performance. Some researchers found a positive and significant impact of bank loans on performance while others found a negative and significant impact.

4 Chapter Four: Research Design and Methodology

4.1 Introduction

This chapter describes the methodology used to conduct the research. It includes research design, variable descriptions and measurement, model specification and assumptions.

4.2 Research design

Secondary data is used in this study. The data was obtained from two sources. Data on net profit, bank loans, total financing, total assets, fixed assets and total sales were sourced from the Bank of Mozambique. Inflation data was obtained from the National Bureau of Statistics. The population of the study comprises all enterprises registered in the central balance sheet database of the Bank of Mozambique. From the population, 22 SMEs were selected on the basis of the Institute for Promotion of Small and Medium Enterprises in Mozambique definition of small and medium enterprises (i.e.enterprises with 5 to 99 employees and with between 1,200,000.00 to 29,900,000 metical annual turnover) and for data consistency in the period 2013 to 2017. The study employed the correlational research method to examine relationships among variables using panel data as suggested by Baltagi (2005).

4.2.1 Variables

Table 4.1 shows dependent and independent variables. The dependent variables include ROA and ROE. Both are largely used as a measure of performance for enterprises. For instance, Abebe and Abera (2019, as cited by Foo et al.) studied the determinants of financial performance in Ethiopia. Ulum (2015) examined the relationship between capital structure and corporate performance of public listed oil and gas companies in Malaysia while Salim and Yadav (2012) investigated the relationship between capital structure and firm performance in Malaysian listed companies. All of these studies used both ROA and ROE as a measure of performance. Similarily, Bhattarai (2016) examined the effect of capital structure on the performance of Nepalese manufacturing companies, Vavatu (2015) examined the impact of capital structure as well as its determinants on the financial performance of Romanian companies, Manawaduge et al. (2011) examined the impact of capital structure on firm performance in Sri Lankan firms. The mentioned studies applied ROA as a measure of performance.

Table 4.1 - Variable Definition

ABBREVIATION	VARIABLE NAME	DEFINITION
ROA	Return on Assets	Shows ability of firm to earn profit and return on assets investment as well as a good financial health indicator.
ROE	Return on Equity	Shows ability of a firm to earn profit and return on equity investment as well as a good financial health indicator.
BFIN	Bank financing	Bank long-term loans extended to SMEs.
TANG	Tangibility	Ratio of total fixed asset and total asset of a firm.
DEB	Debt ratio	Ratio of debt to total assets.
LEV	Leverage	Ratio of debt to equity.
SIZ	Size	Total assets.
GRW	Growth	Total sales of goods and services.

Source: Computed by author

The dependent variables include firm-specific and macroeconomic variables. Firm-specific are variables that firms have control over. These include bank financing, tangibility, debt ratio, leverage, size and growth. Macroeconomic variables are those that are not controlled by firms, such as inflation. Firm-specific variables are presented in terms of financial indicators and computed as ratios. They are included as explanatory variables because they affect enterprises' long-term financial goals and performance (Vatavu, 2015).

In this study, bank financing is measured as bank loan divided by total financing. For this ratio, we expect a positive relationship as bank loans are perceived to have a positive impact on the financial performance of SMEs (Abraham and Schmukler, 2017). Tangibility is defined as the ratio of total fixed assets and total assets of a firm. Expected results on financial performance are ambiguous. They can either be positive or negative. A negative could mean a larger share of tangible assets such as buildings that do not affect profitability directly (Lazar, 2016). Vatavu (2015) argues that the negative impact of tangibility on performance could be due to investment in fixed assets which reduce profit levels in the short term. Profitability in such investments is observed in the long term. Harc (2015) and Onofrei et al. (2015) view tangibility as good collateral for SMEs and thus has a positive impact because firms are able to attract

long-term debt with lower interest rates. Nevertheless, there is ambiguity in the impact of tangibility on performance. We expect a positive signal of tangibility on the performance of SMEs in Mozambique since commercial banks tend to consider collateral as one of the pre-requisites for a firm to access loans (Ministry of Commerce and Industry, 2007). With respect to debt ratio, different approaches are used to compute this ratio. Some researchers consider short term debt while others use long term debt. In this study, we use the ratio of long and short term debt to total assets to total assets. This approach was utilised by Baist and Irwan (2017); Bahattarai (2016); Lazar (2016); Akeem et al. (2014) and Manawaduge et al. (2011). We expect a negative effect of debt ratio in line with the theory that supports the idea that internal funds are preferred to external funds. Lazar (2016) and Vavatu (2015) research findings support this view.

Leverage is the ratio of debt to equity. To obtain the ratio in this study, bank loans were divided by equity. Abebe and Abera (2019); Basit and Irwan (2017) and Tiwari and Parray (2014) indicate that this ratio is widely used to evaluate firms' performance. Myres (1984) cites the pecking order theory as showing a negative relationship between leverage and firm´s performance. Thus, we expect a negative relationship between leverage and SMEs performance. The same results were found by Abebe and Abera (2019) and Lazar (2016).

Total assets are used as a proxy for firm size. This method was employed by Abebe and Abera (2019); Isik (2017) and Hatem (2014). A positive relationship is expected since assets are the main collateral that SMEs use to access external funds, especially bank loans (Abraham and Schmukler, 2017). To measure growth, total sales of goods and services were included. A similar approach was used by Isk and Tasgin (2017); Bhattarai (2016) and Yoo and Kim (2015). A positive contribution to the performance of SMEs is expected. Firms with considerable growth portray positive signals to the market about their future performance (Manawaduge et al. 2011). Growth may also lead to economies of scale, which enhance firms' profitability (Selvam et al. 2016).

Inflation is a macroeconomic variable, which may affect the performance of SMEs. Abebe and Abera (2019) and Vavatu (2015) analysed the effect of inflation on firms and showed a negative relationship with SMEs performance due to volatility. Ayuba and Zubairu (2015) in their study on the impact of banking sector credit on the growth of SMEs, found a negative relation between inflation and firm´s performance. Likewise, we expect a negative impact of inflation on the performance of SMEs in Mozambique.

Variables in the model were tested for multicollinearity. Results showed that inflation and GDP growth rates are highly correlated. To solve this problem, GDP growth rates were removed from the model based on having higher P-value, indicating that GDP is insignificant.

Equally lending interest rate is excluded from the model based on economic intuition that it is correlated with inflation.

Table 4.2 - Operational definition of variables

Variables		Notion in model	Measurement	Variable descripion in regression model
Dependent variables	Return on asset	ROA	$\frac{Net\ income}{Total\ assets}$	Net income to asset
	Return on equity	ROE	$\frac{Net\ income}{Total\ assets}$	Net income to asset
Explanatory variables	Bank financing	BFIN	$\frac{bank\ loan}{Total\ financing}$	bank loan to total financing
	Tangibility	TANG	$\frac{Fixed\ asset}{Total\ asset}$	Fixed asset to total asset
	Debt ration	DEB	$\frac{bank\ loan}{Total\ asset}$	bank loan to total asset
	Leverage	LEV	$\frac{bank\ loan}{Equity}$	bank loan to total asset
	Size	SIZ	Ln total asset	Natural logarithm of total asset
	Growth	GRW	Ln total sale	Natural logarithm of total sale
	Inflation	INF	Inflation rate	price variation

Source: Computed by author

Following the standard practice suggested by Ehrman et al. (2001), characteristics of enterprises are all normalised to average across all enterprises in the sample and their sum is zero so that the interaction terms are equally zero. The normalisation formulas applied to the explanatory variables are as follows:

$BFIN_{it}=(\text{bank loan}_{it}/\text{total financing}_{it}) - (\Sigma_{t=1}^{T}((\text{bank loan}_{it}/\text{total financing}_{it})/N_t)/T$ (a)

$TANG_{it}=(\text{fixed assets}_{it}/\text{total assets}_{it}) - (\Sigma_{t=1}^{T}((\text{fixed assets}_{it}/\text{total assets}_{it})/N_t)/T$ (b)

$DEB_{it}=(\text{bank loan}_{it}/\text{total assets}_{it}) - (\Sigma_{t=1}^{T}((\text{bank loan}_{it}/\text{total assets}_{it})/N_t)/T$ (c)

$LEV_{it}=(\text{bank loan}_{it}/\text{equity}_{it}) - (\Sigma_{t=1}^{T}((\text{bank loan}_{it}/\text{equity}_{it})/N_t)/T$ (d)

$SIZ_{it}=\log(\text{total assets}_{it}) - \Sigma_{t=1}^{T}\log(\text{total assest}_{it})/N_t$ (e)

$GRW_{it}=\log(\text{total sales}_{it}) - \Sigma_{t=1}^{T}\log(\text{total sales}_{it})/N_t$
(f)

Where:

N represents sample size/cross-sections included; and

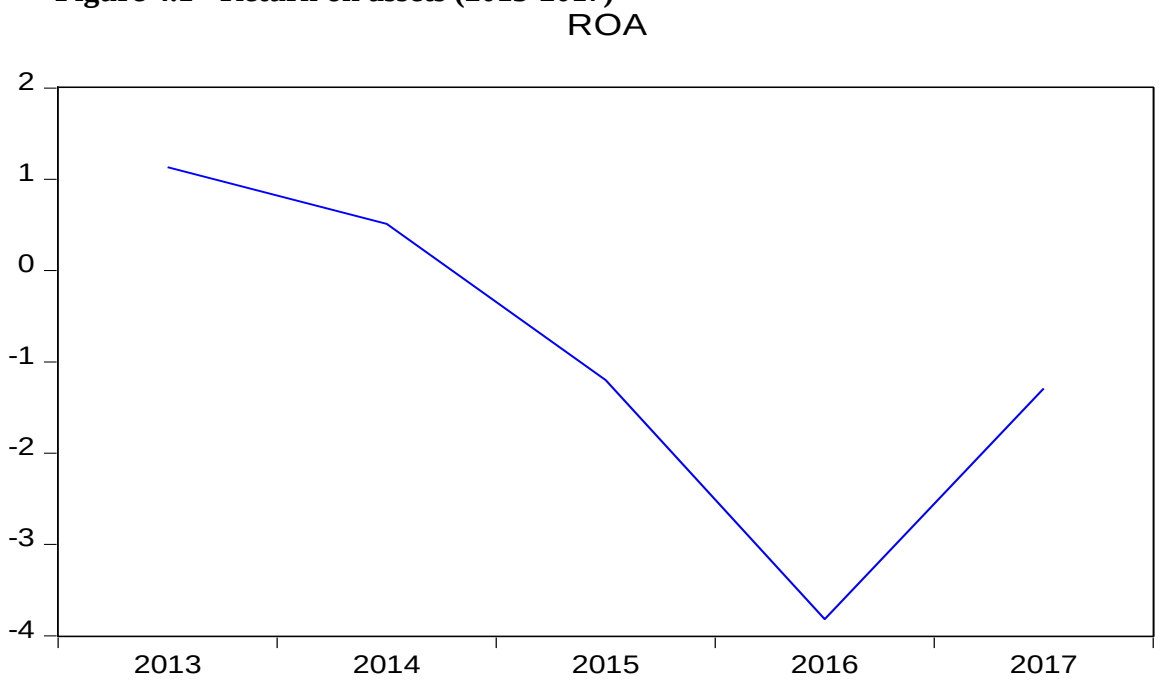
T represents number of periods included

4.3 Data description

This section presents the description and trend of the variables considered in the study, namely the ROA, ROE, bank financing (BFIN), tangibility (TANG), debt ratio (DEB), Leverage (LEV), Size (SIZ) and Growth (GRW).

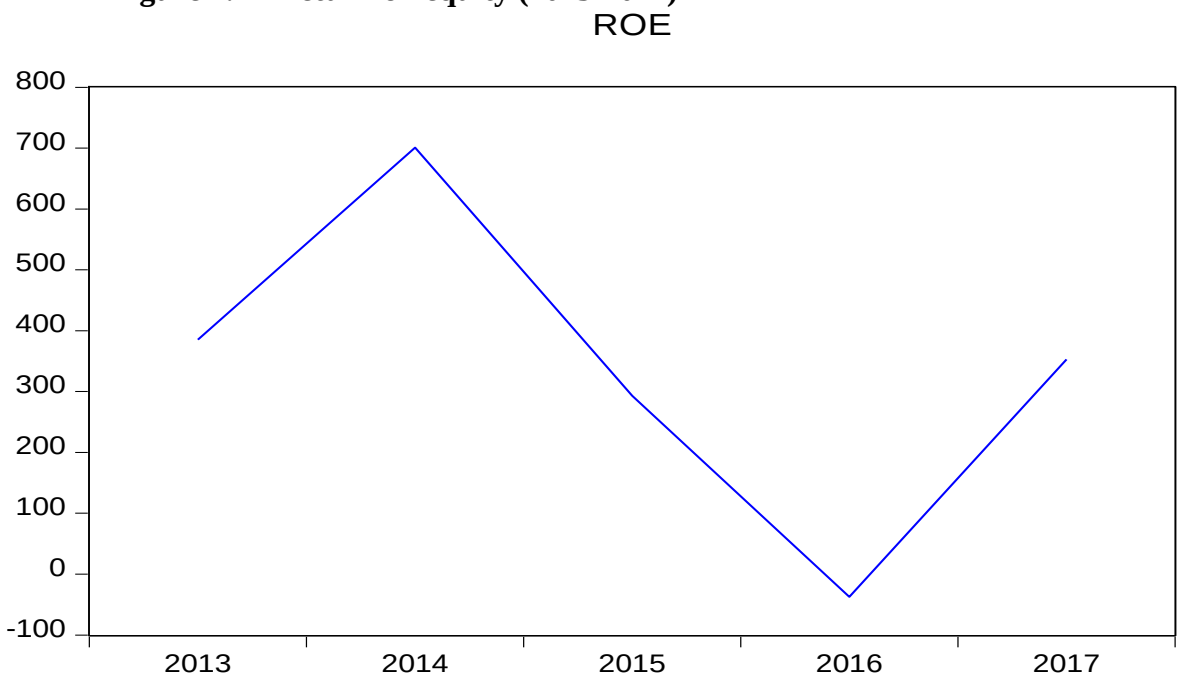
ROA and ROE observed a similar trend over the past five years (2013-2017). There is notable deterioration switching from a positive to negative signal (see figure 4.1 and 4.2). Report from the National Statistics Institute (2018) indicates that GDP growth in Mozambique decreased from 6.6 percent in 2015 to 3.8 percent in 2016 and 3.7 percent in 2017. This low performance of the whole economy may be due to the low performance of SMEs.

Figure 4.1 - Return on assets (2013-2017)



Source: Computed by author

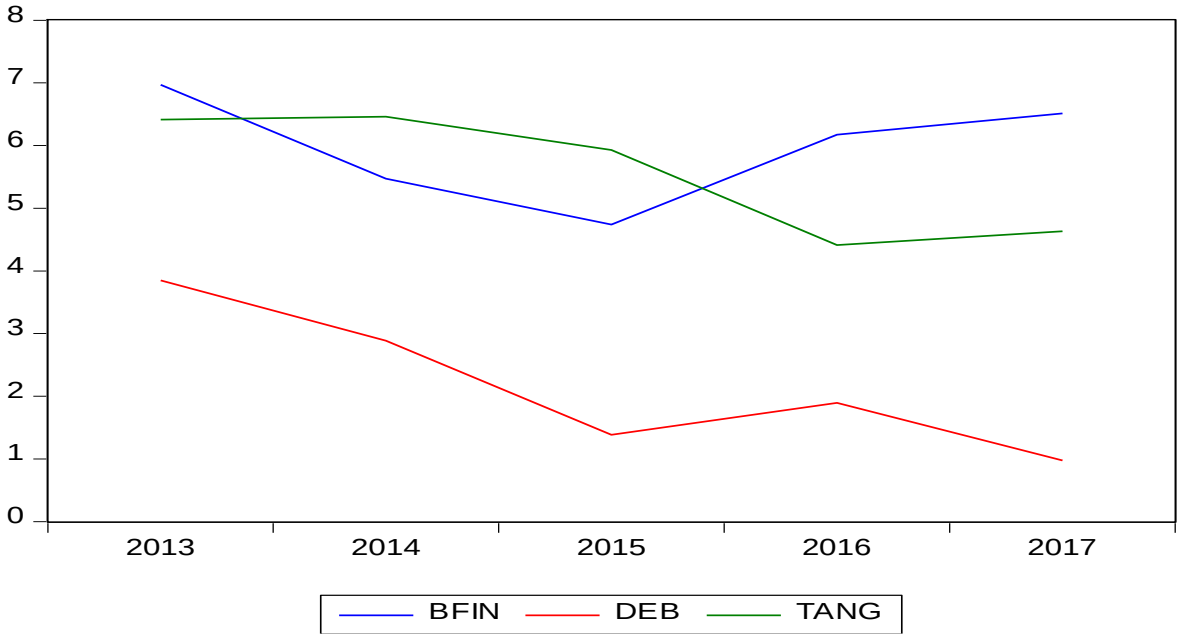
Figure 4.2 - Return on equity (2013-2017)



Source: Computed by author

A trend similar to ROA and ROE is observed in bank financing (BFIN), debt ratio (DEB) and tangibility (TANG) presented in figure 4.3 They decreased during the study period, however, BFIN picked up after 2015 and TANG seemed to stabilise. Figure 4.4 below seems to suggest an inverse relationship between Inflation on one hand and ROA, BFIN, DEB and TANG on the other hand.

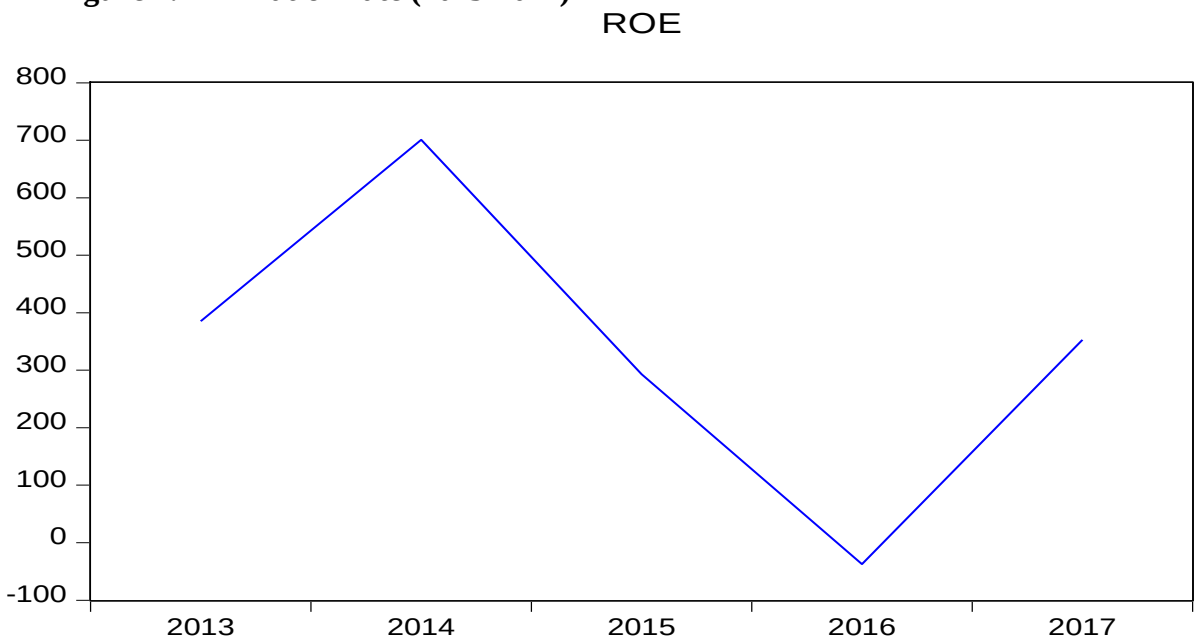
Figure 4.3 - Bank financing, debt ratio and tangibility



Source: Computed by author

Inflation rate, which is used as a macroeconomic variable in the regression soared during the period 2014 to 2016. The years 2015 and 2016 were characterised by high inflation reflecting sluggish economic performance which started in 2015 (see figure 5.3).

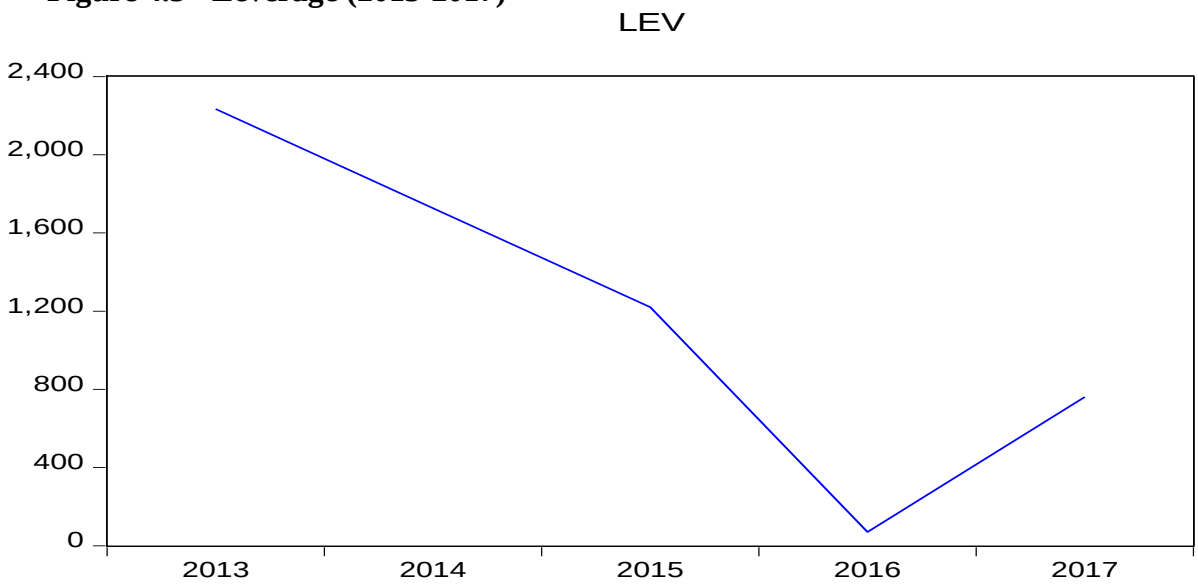
Figure 4.4 - Inflation rate (2013-2017)



Source: Computed by author

Leverage (LEV) is measured as the ratio of debt to equity. Similarly, LEV decreased over the study period and reached the lowest level in 2016 (See figure 4.5). This pattern is similar to ROA and ROE, showing a positive relationship with them.

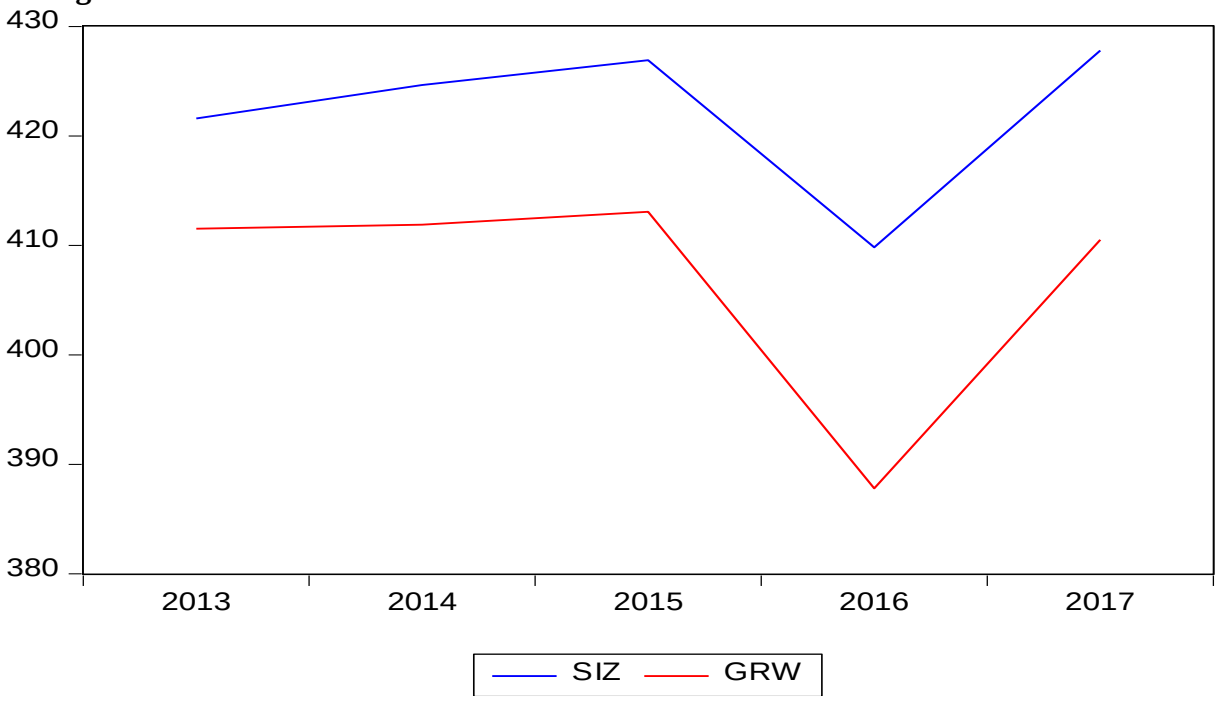
Figure 4.5 - Leverage (2013-2017)



Source: Computed by author

Size and growth presented in figure 4.6 show similar patterns with a significant decrease in 2016, reflecting economic slowdown in 2016. Size and growth indicate a positive relationship with ROA and ROE.

Figure 4.6 - Size and Growth



Source: Computed by author

4.4 Empirical model

The general form of the regression model is presented in equation 1:

$$Y_{it} = \alpha + \beta i X_{it} + u_{it} \quad (1)$$

Where i stands for the i^{th} cross-sectional unit and t for the t^{th} time-period; α is a constant term; βi is estimated coefficient; X_{it} are the vector of explanatory variables and u_{it} is the combined cross-section and time-series error component.

On the basis of general regression equation, a multiple regression model is specified and estimated to examine the relationship between the dependent variables, ROA and ROE with seven explanatory variables; Bank financing (BFIN), Debt ratio (DEB), Tangibility (TANG), Size (SIZ), Growth (GRW), Leverage (LEV) and inflation (INF). The model is specified below:

$$ROA_{it}=\alpha+\beta_1 BFIN_{it}+\beta_2 TANG_{it}+\beta_3 DEB_{it}+\beta_4 LEV_{it}+\beta_5 SIZ_{it}+\beta_6 GRW_{it}+\beta_7 INF_{it}+u_{it} \quad (2)$$

$$ROE_{it}=\alpha+\beta_1 BFIN_{it}+\beta_2 TANG_{it}+\beta_3 DEB_{it}+\beta_4 LEV_{it}+\beta_5 SIZ_{it}+\beta_6 GRW_{it}+\beta_7 INF_{it}+u_{it} \quad (3)$$

Where:

i represents firm

t represents year

α is constant

βi are coefficient where i=1,2,3,4,5,6,7 which represent the proportionate change in dependent variable due to independent variables;

4.5 Model assumptions

The study employed a panel data model. This is appropriate for this study as opposed to other relevant methods such as time-series data model because as suggested by Baltagi (2005), the panel data model is useful when the same firm is surveyed over time. Further, focus on a specific set of firms by Baltagi (2005), suggests that fixed effects allow restrictions on inference to the behaviour of the selected set of firms. For the case of this study, the inference is conditional only to SMEs and not to all types of companies operating in Mozambique.

To estimate the relationship between bank loans and performance of SMEs, the study considered two approaches of the panel data model, the Fixed Effects Model (FE) and Random Effects Model (RE). To select the appropriate model for this study, the Hausman specification test was performed as proposed by Baltagi (2005). The null hypothesis is that random effects are appropriate. Table 4.3 shows the results of the Hausman test. From the test, the null hypothesis is rejected and the fixed effects model is accepted as the appropriate model since the P-value is 0.0349 which is less than five percent.

Table 4.3 - Correlated Random Effects – Hausman test

Correlated Random Effects - Hausman Test
Equation: Untitled
Test cross-section random effects

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	15.083412	7	0.0349

Cross-section random effects test comparisons:

Variable	Fixed	Random	Var(Diff.)	Prob.
BFIN	0.356032	0.240695	0.010735	0.2656
TANG	0.680486	0.161144	0.049162	0.0192
DEB	-0.858316	-0.760201	0.020842	0.4967
LEV	0.000077	0.000121	0.000000	0.8007
SIZ	0.307640	0.043372	0.006714	0.0013
GRW	-0.007962	-0.027656	0.000604	0.4228
INF	-0.008687	-0.010063	0.000001	0.0738

Source: Computed by author

4.6 Limitations of the study

Data availability is one of the major constraints when it comes to studying SMEs in Mozambique. This limits the number of the cross-section and observations and consequently restricts the robustness of the regression model.

The absence of qualitative data about SMEs limited the analysis of SMEs. Therefore, it was not possible to access other factors that may impact the performance of SMEs in Mozambique.

4.7 Chapter Summary

The research design and methodology of this study comprise secondary data of SMEs listed on central balance sheet database of the Central Bank of Mozambique. Panel data using the fixed effects model was employed to analyse the relationship between the dependent and independent variables.

5 Chapter Five: Results and discussion

5.1 Introduction

This chapter describes the variables used in the model and presents the findings from the regression model.

5.2 Descriptive statistics

As illustrated in table 5.1, the average of ROA and ROE for small and medium enterprises was -0.041 MZM and 15.411 MZM respectively over the past five years (2013-2017). The mean of -0.041 MZM means that SMEs that are not profitable. A significant standard deviation and high dispersion between the minimum and maximum values reveals that the performance of the SMEs is significantly diverse over time and across SMEs. The mean equal to 15.411 MZM indicates that most profitable SMEs from the sample companies earn 15.411 MZM of net income from a single one MZM equity investment. The high standard deviation and high dispersion between the minimum and maximum suggest different patterns among the firms.

The selected SMEs show low usage of bank loans (BFIN), with a mean of 0.271 MZM. The high standard deviation of 0.333 and a minimum of zero MZM reveals that some have access to loans and others do not have. Tangibility (TANG) at 25 percent indicates a lower usage of fixed assets as collateral by SMEs to access bank loans.

The Debt ratio (DEB) mean of 0.099 shows that only a small portion of total assets of the SMEs is financed by debt. This indicates that SMEs use internal funds to acquire their assets.

The variables, size (SIZ) and growth (GRW) are relatively low with means of 0.9 percent and and zero percent respectively meaning that in terms of total assets and turnover the SMEs need some improvement.

Figure 5.1 - Descriptive statistics

Variables	Mean	Std. Dev.	Maximum	Minimum
ROA	-0.041	0.373	0.450	-3.151
ROE	15.411	55.930	366.036	-46.478
BFIN	0.271	0.332	1.000	0.000
TANG	0.253	0.254	0.864	0.002
DEB	0.099	0.142	0.645	0.000
LEV	0.667	227.598	1443.052	-54.198
SIZ	0.009	1.322	3.335	-2.605
GRW	1.52E-15	1.576	4.288	-5.812
INF	9.068	7.893	23.672	1.934

Source: Computed by author

5.3 Stationarity

The panel unit root test for the data used in the model was performed using the methods suggested by Baltagi (2005), namely:

- Levin, Lin and Chu test (LLC)

Null hypothesis: Panel data has unit root.
Alternative hypothesis: Panel data has no unit root.

- Im, Pesaran and Shin test (IPS)

Null hypothesis: Panel data has unit root.
Alternative hypothesis: Panel data has no unit root.

- ADF-Fisher Chi-square test

Null hypothesis: Panel data has unit root.
Alternative hypothesis: Panel data has no unit root.

- PP-Fisher Chi-square test

Null hypothesis: Panel data has unit root.
Alternative hypothesis: Panel data has no unit root.

The results, presented in Appendix 2, show that for the dependent variable ROA, data is non-stationary when a test is performed at level, however, when data was transformed to the first difference, it became stationary as the p-values for LLC, IPS, ADF-Fisher Chi-square and PP-Fisher Chi-square test are less than five percent, then, we reject the null hypothesis that data has a unit root.

Data on dependent variable ROE is stationary at level, as the p-values for LLC, IPS, ADF-Fisher Chi-square and PP-Fisher Chi-square test are less than five percent, thus, we reject the null hypothesis of that data has a unit root.

The unit root test results for bank financing (BFIN) at level suggest non-stationary data as the majority of the methods present a p-value higher than five percent meaning that we cannot reject the null hypothesis that data has a unit root. However, when the test is performed at first the difference the majority of the methods (LLC and PP-Fisher Chi-square) present a p-value less than five percent suggesting that data has no unit root, thus, is stationary at first the difference.

The results of unit root test for Tangibility (TANG), Leverage (LEV) and Growth (GRW) revealed that data for all the variables is stationary at the level as the p-value for all methods is less than five percent, meaning that we reject the null hypothesis that data has a unit root. Similarly, the unit test root at level for debt ratio revealed that at level only 50 percent of the methods suggests that there is no unit root. However, when the test is performed at first difference, all the methods presented a p-value less than

five percent, which means that we reject the null hypothesis that suggests that data has a unit root.

The SMEs size also suggests a rejection of null hypothesis of having a unit root when the test is performed with data transformed into first difference.

5.4 Regression Analysis

Two multiple regression models were estimated to assess the impact of bank loans on the performance of SMEs as shown in equation 2 and equation 3. ROA and ROE were used as dependent variables and measure of performance. Seven variables, namely bank financing (BFIN), tangibility (TANG), debt ratio (DEB), leverage (LEV), size (SIZ), growth (GRW) and inflation (INF) were used as explanatory variables. The fitness of the model shown in table 5.1 and 5.2 is less than five percent (Prob > F = 0.0000) meaning that all the variables jointly significantly affect the dependent variable. Additionally, the R-squared of 67.8 percent and 68.3 percent for ROA and ROE respectively indicate that the explanatory variables explain 67.8 percent of the changes in ROA and 68.3 percent of the changes in ROE.

Table 5.1 - Regression analysis for ROA

Dependent Variable: ROA
Method: Panel Least Squares
Date: 07/18/19 Time: 18:50
Sample: 2013 2017
Periods included: 5
Cross-sections included: 22
Total panel (balanced) observations: 110

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.042935	0.036998	1.160455	0.2493
BFIN	0.356032	0.163518	2.177321	0.0324**
TANG	0.680486	0.280065	2.429741	0.0173*
DEB	-0.858316	0.285746	-3.003773	0.0035*
LEV	7.73E-05	0.000256	0.301632	0.7637
SIZ	0.307640	0.091372	3.366891	0.0012*
GRW	-0.007962	0.037418	-0.212776	0.8320
INF	-0.008687	0.003175	-2.736172	0.0076*

Effects Specification
Cross-section fixed (dummy variables)

Root MSE	0.210941	R-squared	0.678057
Mean dependent var	-0.040710	Adjusted R-squared	0.566768

S.D. dependent var	0.373469	S.E. of regression	0.245819
Akaike info criterion	0.252797	Sum squared resid	4.894578
Schwarz criterion	0.964742	Log likelihood	15.09614
Hannan-Quinn criter.	0.541566	F-statistic	6.092763
Durbin-Watson stat	2.031023	Prob(F-statistic)	0.000000

Source: Computed by author

Note: * significant at 1% ; ** significant at 5%

$ROA_{it}=0.043+0.356BFIN_{it}+0.681TANG_{it} -0.858DEB_{i\ t}+ 0.00LEV_{it} +0.307SIZ_{it}– 0.007GRW_{it}-0.008INF_{it} + u_{it}$

Table 5.2 - Regression analysis for ROE

Dependent Variable: ROE
Method: Panel Least Squares
Date: 11/26/19 Time: 17:05
Sample: 2013 2017
Periods included: 5
Cross-sections included: 22
Total panel (balanced) observations: 110

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	22.94916	5.497617	4.174383	0.0001*
BFIN	25.20903	24.29725	1.037526	0.3026
TANG	64.31548	41.61499	1.545488	0.1261
DEB	-24.89504	42.45907	-0.586330	0.5593
LEV	0.114010	0.038076	2.994290	0.0036*
SIZ	12.71585	13.57704	0.936570	0.3518
GRW	10.62751	5.559920	1.911450	0.0595***
INF	-0.794730	0.471732	-1.684705	0.0959***

Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.683053	Mean dependent var	15.41090
Adjusted R-squared	0.573492	S.D. dependent var	55.92962
S.E. of regression	36.52630	Akaike info criterion	10.25518
Sum squared resid	108067.8	Schwarz criterion	10.96713
Log likelihood	-535.0351	Hannan-Quinn criter.	10.54395
F-statistic	6.234414	Durbin-Watson stat	2.784963
Prob(F-statistic)	0.000000		

Source: Computed by author

Note: * significant at 1% ; *** significante at 10%

$ROE_{it}=0.000 + 0.303BFIN_{it} + 0.126TANG_{it}0.559DEB_{it} + 0.004LEV_{it}+ 0.352SIZ_{it}+ 0.059GRW_{it}- 0.095INF_{it} + u_{it}$

The panel fixed effect estimation regression presented in table 5.1 and 5.2 shows the significance of each independent variable in explaining variations in the dependent variables ROA and ROE.

Bank financing impact on ROA was positive at five percent of significance level as presented in table 5.1. The coefficient of BFIN suggests that a one percent change in bank loans results in a 0.36 percentage points change in ROA. Similarily the impact on ROE is positive but statistically insignificant.

DEB had a negative impact on ROA at one percent significance level. The DEB coefficient suggests that a one percent change in DEB results in a negative 0.86 percent change in ROA. Similar results were found by Vavatu (2015) who argued that unsustainable debt levels may adversely affect financial performance. On the other end, the impact on ROE was positive but statistically insignificant.

Tangibility (TANG) had a positive relationship with ROA at one percent significance level. The coefficient shows that a one percent change in TANG produces a positive change of 0.68 percentage points in ROA. Similarily the impact on ROE was positive but statistically insignificant.

The firm size had a positive effect on ROA at one percent significance level. The coefficient indicates that a one percent change in size would result in 0.31 percent change in ROA. This confirms the important role that SMEs assets plays in accessing financing. The higher the assets, the higher the chances of an SME accessing a loan (Rahman, 2017). Similarly, the impact on ROE was positive but statistically insignificant.

Leverage (LEV) had a positive impact on ROE at one percent significant level. The coefficient indicate that a one percent change in LEV produces a positive change of 0.11 percentage points in ROE. Similarly, the impact on ROA was positive but statistically insignificant.

Growth (GRW) measured by natural logarithm of sales had a positive impact on ROE at 10 percent significant level. The coefficient indicates that a one percent change in GRW produces a positive change of 0.11 percentange points in ROE. However the impact on ROA was negative but statistically not significant.

The macroeconomic factor measured by inflation had a negative and significant effect on performance at one(1) percent and 10 percent significant level respectively. The negative coefficient of inflation implies that a one percent change in inflation produces a negative change of 0.8 percentange points and a 0.79 percentage points in ROA and ROE, respectively.

From the results above, we may conclude that bank financing, tangibility, debt, size and inflation are determinants of ROA and leverage growth and inflation are determinants of ROA. It means that the model is more responsive for ROA than to ROE when measuring performance.

5.5 Discussion

The regression results presented in table 5.1 and 5.2 are based on panel data using the fixed-effects model as a method of analysis. The findings suggest that bank financing contributes positively to the performance of SMEs in Mozambique measured by ROA. Therefore, we cannot reject the null hypothesis that bank loans have a positive impact on performance. These findings confirm prior expectations and are consistent with findings by Esther et al. (2018); Riwayati (2017); Dankwa and Adoley (2014) and Dube (2013). Riwayati (2017) further argues that the impact of bank loans is more effective in SMEs than in other private sector entities.

Findings from this study indicate that tangibility has a positive impact on the performance of SMEs measured by ROA. The results confirm a prior expectation and suggest that SMEs make good use of their fixed assets as pointed out by the pecking order theory. Firms with higher tangibility are more likely to access external financing at lower cost, making them more profitable. Empirical studies by Bilbas (2017); Gabrijelcic et al. (2016) and Pouraghajan et al. (2012) also found a positive relationship between tangibility and performance. However, studies by Lazar (2016); Vavatu (2015) and Manawaduge et al. (2011) found negative impact of tangibility on ROA.

These study findings reveal that SMEs debt ratio affects performance measured by ROA negatively. These findings confirm the expectations of the study and are consistent with previous studies by Mitra and Adhikary (2017); Vavatu (2015) and Kebewar and Noaman (2013) who found a negative impact of debt ratio on performance. Basit and Irvan (2017), argue that debt levels above the optimum may be one of the reasons for a negative impact on a firm´s performance. In light of this, managers should find an optimum debt level that increase a firm´s performance.

Regression results show that leverage affects performance positively when measured by ROE. The findings are at variance with the pecking order theory which suggests a negative impact of leverage on firm´s performance based on the idea that firms prefer internal financing to external financing. Equally, the results from this study are inconsistent to prior studies by Abebe and Abera (2019); Basit and Irwan (2017) and Rahman (2017) who found a negative impact of leverage on firm performance.

SMEs size has a positive impact on performance measured by ROA. The results are in line with our expectations. The findings corroborate with those found by Abebe and Abera (2019); Hatem (2014) and Ahmad et al. (2012). However, other similar studies such as Lazar (2016) and Onofrei et al.(2015) found a negative impact of SMEs size on performance. Mitra and Adhikary (2017) found that the impact of SMEs size on performance was not statistically significant. Those who find a positive effect of firm´s size on performance, support their findings based on the trade-off theory, which postulates that large firms are stronger thus, have more access to funds and new technology.

SMEs growth has a positive impact on SMEs performance measured by ROE. The results are in line with our expectations and corroborate with the agency theory which considers that firms with high growth will have low agency cost and therefore perform better.The results confirm the findings of the previous studies by Isk and Tasgin (2017); Lazar (2016); Bhattarai (2016) and Ahmad et al. (2012) whose results revealed that firm growth has a positive impact on firm performance.

Inflation shows a negative impact on SMEs performance measured by both ROA and ROE. The findings are consistent with a prior expectations and corroborate with findings by Abebe and Abera (2019) and Vavatu (2015).

5.6 Chapter summary

The findings show that bank financing, tangibility, debt ratio and SMEs size have a positive a significant impact on ROA. Similiarly, leverage and SMEs growth have significant impact on ROE. Inflation seems to have a significant impact on both ROA and ROE.

6 Chapter Six: Conclusion and recommendation

6.1 Introduction

This chapter concludes the empirical study on the impact of bank loans on the performance of SMEs. It is structured as follows conclusion, recommendations, limitation of the study and areas for future study.

6.2 Conclusions

The study investigated the impact of bank loans on the performance of SMEs in Mozambique over the period 2013–2017 using a sample of 22 SMEs. The investigation was carried out under the framework of the multiple regression model and fixed-effects model. Return on asset (ROA) and Return on equity (ROE) were used as a measure of performance. The performance was assessed by controlling the effect of bank financing, tangibility, debt ratio, leverage, size, growth and inflation as independent variables.

The study concludes that bank financing, tangibility, debt, size and inflation affect the performance of selected Mozambican SMEs when measured by ROA, leverage growth and inflation affect the performance of the same sample when measured by ROE. These findings are in line with results from studies and theories that found loans to SMEs to promote development and consequently their performance. The negative impact of debt on ROA confirms the trade-off theory which states that high risk of interest rates that firms express particularly in periods of crises, financial distress or bankruptcy may have a negative impact in firm´s performance.

Leverage and growth showed a positive and significant impact on ROE and statistically insignificant impact on ROA of SMEs in Mozambique. The positive and significant impact on ROE confirms the findings of the previous studies and the statistically insignificant impact on ROA may be attributed to the high impact of internal funds compared to external funds and insignificant growth in sales.

The study concludes that not only internal factors impact the performance of SMEs but also macroeconomic environment does. Inflation was found to have a negative and significant impact on the performance of SMEs measured by ROA as well as ROE. This finding suggests that the behaviour of the price index in Mozambique over the past five years impacted negatively the performance of SMEs.

Bank financing and ROA revealed a similar trend over the five years (2013-2017). Additionally, the regression results show a positive coefficient and statistically significant p-value for bank financing in relation to ROA. These findings suggest that bank loans positively affect SMEs performance in Mozambique. However, SMEs financing is still one of the main obstacles that prevent Mozambican SMEs to perform as expected and therefore contribute to the economic development through job creation and GDP increase. The revealed positive impact of bank financing on SMEs performance suggest a need for special attention and targeted policies to this industry.

6.3 Recommendation

From the findings, the study established that bank financing positively influence the financial performance of SMEs in Mozambique. However, more should be done by the Mozambican government to reform the financial sector in order to increase the number of SMEs that have access to bank loans, for example by establishing special credit lines targeting SMEs with sustainable interest rates, either through commercial banks as well as through the establishment of investment banks.

The negative impact of debt ratio on ROA suggests that small and medium enterprises should adopt good practices on capital structure by identifying the good fit between internal and external funds that maximise the performance of the enterprises. Additionally, managers are challenged to maintain an optimal debt level which may increase SMEs performance.

Tangibility is statistically significant on ROA therefore, it is recommended that SMEs use fixed assets as collateral to access external financing. Equally, SMEs should intensify their efforts to increase their sales so as to grow their business requisite for enhancing their financial performance.

6.4 Areas for future study

The regression models present R-squared of 67.8 percent for ROA and 68.3 percent, suggesting the existence of other variables that were not included in the model and may affect firms' performance. Thus, future research might include additional variables that may impact a firm's performance. Future studies may consider administrating a questionnaire to collect more qualitative data to unravel other important factors. We recommend that a similar study be conducted covering all enterprises operating in Mozambique given that such a study has never been conducted.

7 References

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8 Appendices

Appendix 1: Correlation matrix

	ROA	ROE	BFIN	TANG	DEB	LEV	SIZ	GRW	INF
ROA	1	0.12390	0,05801	0,07840	-0,32527	0,05065	-0,03446	-0,19946	-0,19812
ROE	0.12390	1	-0.06221	-0.00703	0.06466	0.49018	0.02669	0.13976	-0.17549
BFIN	0,05801	-0.06221	1	-0,17239	0,31864	0,03501	0,20091	0,20532	-0,00427
TANG	0,07840	-0.00703	-0,17239	1	-0,08830	-0,02141	0,20920	0,06500	-0,08451
DEB	-0,32527	0.06466	0,31864	-0,08830	1	0,25194	0,11816	0,22101	-0,11323
LEV	0,05065	0.49018	0,03501	-0,02141	0,25194	1	0,02381	0,07519	-0,09357
SIZ	-0,03446	0.02669	0,20091	0,20920	0,11816	0,02381	1	0,40292	-0,00603
GRW	-0,19946	0.13976	0,20532	0,06500	0,22101	0,07519	0,40292	1	0,37735
INF	-0,19812	-0.17549	-0,00427	-0,08451	-0,11323	-0,09357	-0,00603	0,37735	1

Appendix 2: Unit root test

Unit Root test for ROA

Panel unit root test: Summary
Series: D(ROA)
Date: 12/04/19 Time: 20:02
Sample: 2013 2017
Exogenous variables: Individual effects
Automatic selection of maximum lags
Automatic lag length selection based on SIC: 0
Newey-West automatic bandwidth selection and Bartlett kernel
Balanced observations for each test

Method	Statistic	Prob.**	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-10.8823	0.0000	22	66
Null: Unit root (assumes individual unit root process)				
ADF - Fisher Chi-square	72.9251	0.0040	22	66
PP - Fisher Chi-square	87.4458	0.0001	22	66

** Probabilities for Fisher tests are computed using an asymptotic Chi -square distribution. All other tests assume asymptotic normality.

Unit Root test for ROE

Panel unit root test: Summary
Series: ROE
Date: 12/05/19 Time: 10:24
Sample: 2013 2017
Exogenous variables: Individual effects
Automatic selection of maximum lags
Automatic lag length selection based on SIC: 0
Newey-West automatic bandwidth selection and Bartlett kernel
Balanced observations for each test

Method	Statistic	Prob.**	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-25.7166	0.0000	22	88
Null: Unit root (assumes individual unit root process)				
Im, Pesaran and Shin W-stat	-7.72146	0.0000	22	88
ADF - Fisher Chi-square	97.1007	0.0000	22	88
PP - Fisher Chi-square	98.4165	0.0000	22	88

** Probabilities for Fisher tests are computed using an asymptotic Chi -square distribution. All other tests assume asymptotic normality.

Unit Root test for BFIN

Panel unit root test: Summary
Series: D(BFIN)
Date: 12/04/19 Time: 20:43
Sample: 2013 2017
Exogenous variables: Individual effects
Automatic selection of maximum lags
Automatic lag length selection based on SIC: 0
Newey-West automatic bandwidth selection and Bartlett kernel
Balanced observations for each test

Method	Statistic	Prob.**	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-8.52052	0.0000	16	48
Null: Unit root (assumes individual unit root process)				
ADF - Fisher Chi-square	45.0905	0.0623	16	48
PP - Fisher Chi-square	50.1739	0.0214	16	48

** Probabilities for Fisher tests are computed using an asymptotic Chi -square distribution. All other tests assume asymptotic normality.

Unit Root test for TANG

Panel unit root test: Summary
Series: TANG
Date: 12/05/19 Time: 09:36
Sample: 2013 2017
Exogenous variables: Individual effects
Automatic selection of maximum lags
Automatic lag length selection based on SIC: 0
Newey-West automatic bandwidth selection and Bartlett kernel
Balanced observations for each test

Method	Statistic	Prob.**	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-8.07618	0.0000	22	88
Null: Unit root (assumes individual unit root process)				
Im, Pesaran and Shin W-stat	-2.40818	0.0080	22	88
ADF - Fisher Chi-square	61.1784	0.0441	22	88
PP - Fisher Chi-square	72.8611	0.0040	22	88

** Probabilities for Fisher tests are computed using an asymptotic Chi -square distribution. All other tests assume asymptotic normality.

Unit Root test for DEB

Panel unit root test: Summary
Series: D(DEB)
Date: 12/05/19 Time: 09:21
Sample: 2013 2017
Exogenous variables: Individual effects
Automatic selection of maximum lags
Automatic lag length selection based on SIC: 0
Newey-West automatic bandwidth selection and Bartlett kernel
Balanced observations for each test

Method	Statistic	Prob.**	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-34.5204	0.0000	17	51
Null: Unit root (assumes individual unit root process)				
ADF - Fisher Chi-square	54.0959	0.0157	17	51
PP - Fisher Chi-square	59.3701	0.0045	17	51

** Probabilities for Fisher tests are computed using an asymptotic Chi -square distribution. All other tests assume asymptotic normality.

Unit Root test for LEV

Panel unit root test: Summary
Series: LEV
Date: 12/05/19 Time: 09:26
Sample: 2013 2017
Exogenous variables: Individual effects
Automatic selection of maximum lags
Automatic lag length selection based on SIC: 0
Newey-West automatic bandwidth selection and Bartlett kernel
Balanced observations for each test

Method	Statistic	Prob.**	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-38.3469	0.0000	18	72
Null: Unit root (assumes individual unit root process)				
Im, Pesaran and Shin W-stat	-5.86057	0.0000	17	68
ADF - Fisher Chi-square	51.6815	0.0266	17	68
PP - Fisher Chi-square	60.4494	0.0035	17	68

** Probabilities for Fisher tests are computed using an asymptotic Chi -square distribution. All other tests assume asymptotic normality.

Unit Root test for SIZ

Panel unit root test: Summary
Series: D(SIZ)
Date: 12/05/19 Time: 09:42
Sample: 2013 2017
Exogenous variables: Individual effects
Automatic selection of maximum lags
Automatic lag length selection based on SIC: 0
Newey-West automatic bandwidth selection and Bartlett kernel
Balanced observations for each test

Method	Statistic	Prob.**	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	3.07776	0.9990	22	66
Null: Unit root (assumes individual unit root process)				
ADF - Fisher Chi-square	60.0838	0.0536	22	66
PP - Fisher Chi-square	73.4565	0.0035	22	66

** Probabilities for Fisher tests are computed using an asymptotic Chi -square distribution. All other tests assume asymptotic normality.

Unit Root test for SIZ

Panel unit root test: Summary
Series: GRW
Date: 12/05/19 Time: 09:33
Sample: 2013 2017
Exogenous variables: Individual effects
Automatic selection of maximum lags
Automatic lag length selection based on SIC: 0
Newey-West automatic bandwidth selection and Bartlett kernel
Balanced observations for each test

Method	Statistic	Prob.**	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-9.26333	0.0000	22	88
Null: Unit root (assumes individual unit root process)				
Im, Pesaran and Shin W-stat	-3.01366	0.0013	22	88
ADF - Fisher Chi-square	65.6209	0.0189	22	88
PP - Fisher Chi-square	83.8649	0.0003	22	88

** Probabilities for Fisher tests are computed using an asymptotic Chi -square distribution. All other tests assume asymptotic normality.