Determinants of Micro-Insurance Business Performance in Ethiopia

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Abstract

Successful performance of insurance industry provides impetus for other industries and development of an economy. Financial performance measurement is important to investors and management in determining the future success. Thus, the aim of study is investigating determinants of micro insurance business performance in Ethiopia. The data used in this study was panel data and collected from nine micro insurance provider institutions secondary data from 2009-2017. Besides, in-depth interview with officials of those institutions was conducted. The collected data was analyzed using Ordinary Least Square regression model. The result of study reveals that volume of capital and market share have significant and positive impact on return on asset performance. With regard to ownership structure, it affects positively return on asset. In contrast, reinsurance dependency, premium growth, underwriting risks and inflation have negatively affected financial performance of micro insurance business in Ethiopia.

1. Introduction

Insurance industry play vital role in the economy. Successful operation of insurance industry sets impetus for other industries and development of an economy. Micro insurance programs provide insurance services to the low-income population and small businesses in developing countries. Micro insurance is typically characterized as a financial arrangement to protect low-income people against specific perils in exchange for regular premium payments proportionate to the likelihood and cost of risk involved (Churchill, 2007).

Micro insurance is regarded by some as a risk management mechanism that the poor can use to compensate for lack of appropriate state-sponsored social protection programs and it promotes financial inclusion. Alternatively, it is viewed by others as an opportunity to provide financial services to the low-income market at a profit. Regardless of where the emphasis is placed, all micro insurance programs should aim to become financially viable since donor or government subsidies are only temporary or not available. Without subsidies, all programs are subject to the same economic and market forces as mainstream businesses, and this requires them to be managed professionally (Biener and Eling ,2011).

Solid financial performance is crucial to the success of micro insurance industry. In order to offer valuable products, micro insurance needs to build its roots on viable business models, either by developing market mechanisms or by involving long-term subsidies (Matul et.al, 2010). Despite its huge market potential, the viability of many micro-insurance schemes is still being questioned this is due to low premiums, high administrative costs and poor levels of insurance infrastructure in developing countries (Churchill, 2007; Cohen and Sebstad, 2005).

Regarding research studies conducted on this area was only one study by Olajumoke, (2013) in case of Nigeria and South Africa and the study identified factors affecting micro insurance business profitability.However, research was conducted with socio-economic context of Nigeria and South Africa. So, researchers fill this gap by investigating factors which affect financial performance of micro insurance business in Ethiopia.

Furthermore, the literature depicts that some prior researchers adopt a quantitative research approach only without considering its limitation and most of the studies focused

on specific micro insurance product so the researchers fill this gap by adopting mixed research approach which provides a better understanding about research problems than either approach alone and brings robustness to the research findings and by including all micro insurance products, though some of studies conducted in Ethiopia on conventional insurance used mixed approaches.

Despite the growing policy interest in micro insurance in Ethiopia little academic attention has been paid to this issue most of the studies focused on conventional insurance profitability, except one study conducted by Biniam(2015) which has methodological limitations, i.e its variable measurement was not clear and his focus was on sales performance of crop micro insurance only. Therefore, current studies tried to fill these gaps, i.e measures micro insurance business runner's institutions financial performance and try to look deeply from the specific micro insurance business perspective instead of conventional insurance.

2. Literature review

Under this section previous study conducted on micro insurance business performance is presented.

Olajumoke (2013) examined the factors that influence profitability of micro-life insurance firms in Nigeria and South Africa. The joint impact of cost efficiency, ownership structure, leverage and reinsurance together with other institutional factors, on the profitability of commercial micro-life insurance providers are investigated. The studies finding shows that cost efficiency which is positively associated with profitability is significant for the business success of micro-life insurers. Contrary to expectations, the interaction between reinsurance and leverage has negative impact on the profitability of micro-life insurance firms. Ownership structure has no statistically significant. On the other hand, the study finds that firm-specific effects such as the company size, product mix, length of time of operations in the market (age), and macro-economic factors such as the average annual interest rates, are significant drivers of the profitability of micro-life insurers.

Atieno (2014) investigated the effect of micro insurance on financial performance of insurance companies in Kenya on 10 firms underwriting micro medical and property businesses for the period 2009 to 2013.In this study researcher used analytical survey and correlation research design. The study's finding shows that there were micro insurance

variables influencing the financial performance of insurance companies in Kenya, namely; micro-insurance premiums, claims and cost.

Factors Affecting Micro Insurance Business Performance in Ethiopia

Even though, there is no exact empirical evidence on micro insurance business performance, there are some studies that has been done and reviewed on conventional/traditional insurance business. Some of them are, Sambasivam and Abate (2013) examined the effects of firm specific factors (age of company, size of company, volume of capital, leverage ratio, liquidity ratio, growth and tangibility of assets) on operating performance (using ROA) of insurance companies in Ethiopia on nine of the listed insurance companies for nine years (2003- 2011). Their finding shows that growth, size, and volume of capital are positively affects the operating performance of insurance companies. In contrast, liquidity and leverage are negatively but significantly related with profitability.

Suheyli (2015) studied the determinants of insurance companies' profitability in Ethiopia using mixed research approach. He has used Panel data covering eleven-year period from 2004 – 2014 for nine insurance companies. Besides, in-depth interview was used. In his finding, he pointed out underwriting risk, technical provision and solvency have statistically significant and negative impact on insurance business operating performance. He also noted that reinsurance dependence has negative effect, though it is statistically insignificant. On the other hand, he found that liquidity, company size and premium growth have a positive and statistically significant impact on operating performance. On the same study, economic growth rate or GDP has significant influence on profitability whereas inflation has insignificant influence.

Biniam (2015) examined factors affecting sales performance of crop insurance at Ethiopian Insurance Corporation. Primary data were collected using interview from the top management of the corporation and using questionnaires from 204 respondents consisting of the corporation's management staff and commercial farmers who were chosen using a combination of census, stratified and simple random methods. His studies result revealed that awareness, accessibility & prompt service, professionalism, premium and scope of cover have significant impact on sales performance of crop insurance.

Teklit and Kaur (2017) investigated factors that affect operational performance of

insurance companies in Ethiopia using panel data covering 10 years period from 2005-06 to 2014-15 were analyzed for seventeen (17) insurance companies. Their finding shows that size of insurance, capital adequacy, liquidity and growth rate of GDP were the major factors that significantly affect the operational performance of insurance companies. On the other hand, leverage ratio, loss ratio, market share and inflation rate were found to have insignificant effect.

3. Materials and Methods

The data used in this study was panel data and collected from nine micro insurance provider institutions secondary data from 2009-2017. Besides, in-depth interview with officials of those institutions was conducted. The collected data was analyzed using Ordinary Least Square regression model.

To investigate determinants of micro insurance business performance in Ethiopia the study used panel data procedures since the sample contains data across insurance companies and micro finance institution and over time.Further,Baltagi (1995) stated that using panel data provide many advantages such as (i) controlling for individual heterogeneity, (ii) giving more informative data, more variability, less collinearity among the variables, more degrees of freedom and more efficiency, and (iii) eliminating biases resulting from aggregation over firms or individuals. As noted in Brook (2008) the general form of the panel data model can be specified as follows:

$$r_{it} = \alpha_i + X_{it}\beta + Z_t\gamma + \varepsilon_{it}$$

Where r_{it} is the return on asset for micro insurance providers i in period t, X_{it} is a vector of micro insurance providers specific variables, α_i is firm-specific fixed effects capturing the impact of unobservable (omitted) effects, Z_t is a vector of time-specific variables (industry and macroeconomic variables) and ε_{it} is the statistical disturbance term. The subscripts i and t denote the cross-sectional and time-series dimension respectively. Also α is taken to be constant over time t and specific to the individual cross-sectional unit i.

4. Results and Discussion

In this study the diagnostic tests were carried out to ensure that the data fits the basic assumptions of classical linear regression model or not. All tests are shown the model

satisfied the basic assumptions of CLRM. Hence, the employed model was not sensitive to the problems of violation of the CLRM assumption.

The Empirical models used in the study in order to identify the factors that can affect Ethiopian micro insurance providers business performance provided as follows.

$$ROA = \beta_0 + \beta_1 FS - \beta_2 Lvr +/- \beta_3 Lqd - \beta_4 PG - \beta_5 RD + \beta_6 S - \beta_7 TP - B_8 UR + B_9 VC + B_{10} MS + B_{11} OS + B_{12} GDP - B_{13} IR + \mu \dots (1)$$

Table1 Regression Results for factors affecting micro insurance business performance (ROA)

Dependent Variable: ROA
Sample: 2009 2017
Included observations: 81

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.036711	0.015979	-2.297502	0.0247
FS	-0.001045	0.001033	-1.011490	0.3154
GDP	0.055355	0.088585	0.624882	0.5342
IR	-0.020234	0.008079	-2.504662	0.0157**
LQD	0.000378	0.003194	0.118285	0.9062
LVR	0.004504	0.001018	4.422618	0.0000***
MS	0.013114	0.004837	2.711430	0.0085***
OS	0.010139	0.003591	2.823341	0.0063***
PG	-0.003848	0.001418	-2.713886	0.0084***
RD	-0.019937	0.004311	-4.624091	0.0000***
S	2.44E-05	3.14E-05	0.775347	0.4409
TP	-0.008067	0.015053	-0.535887	0.5938
UR	-0.013061	0.004568	-2.859077	0.0057***
VC	0.071663	0.013930	5.144374	0.0000***
R-squared	0.570025	Prob(F-statistic)		0.000000
Adjusted R-squared	0.556598	Durbin-Watson stat		2.019509
F-statistic	6.832551			

*** and **, denote significant at 1% and 5% significance levels respectively*
Source: Financial statements of micro insurance providers, NBE reports and own computation

The estimation result of random effect panel regression model is presented in table 1 indicates that R-squared and the Adjusted-R squared statistics of the ROA model was 57% and 55.66% respectively, the result indicates that the changes in the independent variables

explain 55.66% of the changes in dependent variables. That is company size,leverage,liquidity,premium growth,reinsurance dependence,solvency,and technical provision,underwriting risk, volume of capital, market share,ownership structure, gross domestic product and inflationcollectively explain 55.66% of the changes in return on asset. The remaining 44.34% of changes of return on asset was explained by other variables which are not included in the model. Thus, these variables collectively are good explanatory variables of the return on asset of micro insurance industry in Ethiopia as the data is panel data. The regression F-statistic and the p-value of zero attached to the test statistic reveal that the null hypothesis that all of the coefficients are jointly zero should be rejected. Thus, it implies that the independent variables in the model were able to explain variations in the dependent variable.

In this study model one return on asset (ROA) was used as dependent variable to measure the financial performance of micro insurance. Besides, in this model regression we found that leverage, volume of capital, market share, and ownership structure, have statistically significant at 1% and positively affects the financial performance of micro insurance business. Whereas, premium growth, reinsurance dependence and underwriting risk are negatively significant at 1%, as well inflation is significant at 5%.However, company size, liquidity, solvency, and technical provision, and gross domestic product were not statistically significant to affect the financial performance of the micro insurance providers.

In-depth interview results

In depth interviews were conducted with nine micro insurance providers' micro insurance department managers. The interview questions were structured and focused on the identification of factors affecting Ethiopian micro insurance providers in general.

According to an in-depth interview there are various factors that affect Ethiopian micro insurance providers' performance. Among those, they mentioned their firm size, solvency, volume of capital, economic growth, market share improvement have better contribution for their financial performance increment. On the contrary, the majority of them mentioned premium growth, reinsurance dependence, technical provision, underwriting risk, and Inflation Rate adversely affects their financial performance of micro insurance business. Furthermore, they mentioned technical skill gaps of professional, dependency on foreign

professionals, regulatory bodies negligence, financial illiteracy, donors reliance, immediate return expectation from shareholders, lack of due concern from the companies unlike conventional insurance, poor interest from re-insurer and fragmented effort from the industry are mentioned as a main obstacles for their micro insurance business performance in the industry.

Firm Size

H_1: predicted firm size has positive impact on the performance of micro insurance business in Ethiopia. It was measured using logarithm of total assets of micro insurance providers. Although researchers have expected positive significant impact on return on asset, it was statistically insignificant. This implies, its effect is not major factors statistically, though it was stated as one factor by in-depth interview logic of having better capacity for dealing with adverse market fluctuations, relatively easily recruit capable employees and they have economies of scale in terms of the labor cost. Though, it is consistent with positive relationship, like Sambasivam and Abate, 2013;Olajumoke, 2013;Suheyli, 2015; and Teklit and Kaur, 2017, but it is not statistically significant.

Leverage

H_2: estimated micro insurance providers leverage has negative impact on the performance of micro insurance business in Ethiopia. It was measured by using the ratio of debt to equity. The result of the study shown that leverage has negative and statistically significant at 1% significance level (p-value = 0.0000). Its coefficient result implies that if leverage increased by 1% ,ROAincrease by 0.45%. This positive relationship implies; the firms have used their leverage on more productive business that enhances their micro insurance business performance. Thefinding is consistent with previous studies of Sambasivam and Abate (2013), and Olajumoke (2013) for SI model's finding.

Liquidity

H_3: forecasted micro insurance providers liquidity has significant impact on micro insurance business performance in Ethiopia. It is measured using the firm's quick Assets (i.e cash and cash equivalent) to Current Liabilities. Although, its sign is as expected, but it is not statisticallysignificant.

Premium Growth

H_4: estimatedPremium growth has significant impact on micro insurance business performance in Ethiopia. Premium growth was measured using the percentage increase in gross written premiums (GWP). Premium growth shows the rate of market penetration. As predicted it has significant negative impact on ROA.This entails if premium growth increased by 1%, ROA decrease by 0.4% . The negative coefficient indicates that an increase in premium growth implies the insurers has either increased their policy holder number or their premium charge, the latter may be the cause for their negative impact on their ROA, that impaired their financial performance, unlike their normal operation by neglecting profitable investment portfolios selection. This fact is further strengthened by in-depth interview result. The result of this study is in line with previous studies of Atieno (2014) and Biniam (2015).

Reinsurance Dependence

Insurance companies reinsure a certain amount of the risk underwritten in order to reduce bankruptcy risk in the case of high losses. Although reinsurance improves the stability of the insurance company through risk dispersion, achievement of solvency requirements, risk profile equilibration and growth of the underwriting capacity, it involves a certain cost. In this study, H_5: predicted reinsurance dependence has negative impact on performance of micro insurance business in Ethiopia. It is computed as ratio of gross written premiums ceded in reinsurance to total premium. As expected, reinsurance dependence has significant negative impact on profitabilityi.e P-value(0.000). The result signifies if reinsurance dependence increased by 1%, ROA decrease by 0.2%. This negative impact is depicted on reducing micro insurance business financial performance. Moreover, it is supported by in-depth interview results. The finding is similar with Olajumoke (2013).

Solvency and GDP

H_6& H_{12}: estimated solvency ratio and GDP have positive impact on performance of micro insurance business in Ethiopia. The expected sign of the regression sign is similar for the model, but it is not statically significant, despite the financial stability and economic growth has positive contribution practically as the result of in-depth interview shown.

Technical Provision

When provisions are set at a lower level than actually required then this could leads the company's financial position in a better light than it actually is. This could result in inappropriate underwriting decisions being made. H_7: predicted technical provision has negative impact on micro insurance business performance in Ethiopia. It is measured by Safety Ratio (claims outstanding to equity ratio). Its regression coefficient result is negative as expected for the models but it is not statistically significant.

Underwriting Risk

H_8: estimated underwriting risk has negative impact on performance of micro insurance business in Ethiopia. The underwriting risk emphasizes the efficiency of the insurers' underwriting activity and it is measured through the claims incurred divided by annual premium earned. The expected result shows, underwriting risk negatively affects ROA with p-value of 0. 0057. This shows that as underwriting risk increase, the premiums collected will not be sufficient to cover the cost of coverage for normal operation. This is further reflected by the coefficient result that as underwriting risk increase 1time, ROA decrease 0.013 times, like in-depth interview result. The finding is consistent with result of Atieno (2014) and Suheyli (2015).

Volume of Capital

The financial strength of an insurer is crucial to survive in the long run by sustaining its financial performance . H_9: Forecasted volume of capital has positive impact on performance of micro insurance business in Ethiopia. As expected the result of regression result show that volume of capital has significant positive impact on financial performance(p-value of 0.0000).The coefficient result shows that, as the volume of capital increase by 1%, it implies ROA increase by 7.16%.As per the interview result also shown familiar conclusion, as the capital increase their financial performance increase. The finding of this study is inline with Sambasivam and Abate (2013) and Teklit and Kaur (2017).

Market Share

H_{10}: estimated market share has positive impact on performance of micro insurance business in Ethiopia. It is measured by the ratio of an insurer's total premiums to total premiums of the industry as a whole. The higher the percentage of the ratio, the greater is

the market share and thereby better profitability. In this study, the result shows that it is consistent as expected, i.e it has positive impact on ROAat 1% significance level.The coefficient result implies, as market share increase by 1%, ROA increase by 1.31% . This implies that when the micro insurance providers have more market share, they have better probability in sustaining their financial performance. This is further strengthened byinterview results.Unlike the finding of Teklit and Kaur (2017), in this study market share has significant impact on profitability.

Ownership Structure

Ownership structure can be an effective control of agency problems and information asymmetries in insurance markets as it can moderate the incentive conflicts inherent in the relationship between owners, managers and policyholders (Mayers& Smith, 1982, 1994). H_{11}: Forecasted publicly owned firm has significant impact than privately owned firm on performance of micro insurance business in Ethiopia.The result of ROA model is as expected; it is positively affects financial performance at 1% significance level. The result implies, as micro insurance providers owned more by public, ROA increases by 1.01%. This study's finding is more consistent with Mester's (1989) finding which states the profitability-effect of ownership structure by arguing that agency costs can be relatively more acute in closely-held stock (privately-owned) firms rather than widely-held (publicly traded) firms.

Inflation

Inflation certainly plays a role in insurance and has adverse impact on many aspects of insurance operations, such as claims, expenses and technical provisions (Daykin, Pentikäinen&Pesonen, 1994).H_{13}: estimated inflation has negative impact on performance of micro insurance business in Ethiopia. The result of inflation impact on ROA model shows consistently as expected.The result of inflation impact on ROA implies as inflation increase by 1%, ROA decreases by 2.02%. Hence, inflation impairs various aspect of insurance operations, increasing premium amount (in the long run which affects its market penetration) claims, expenses and technical provisions. The regression result on this variable also identical with the finding of interview. The finding is in line with Daykin, Pentikäinen&Pesonen, (1994).

5. Conclusions

A development of an insurance industry has great impact on the national growth in a number of different ways such as reducing the risk businesses, stimulating access to credit, facilitating investments in higher-risk higher-return activities and stimulating development of debt and equity markets. As a result,a well-developed insurance industry may thereby improve the general efficiency of the economy by creating liquidity, lowering transaction costs and enhancing the genera social well-being of a nation. The objective of this study was to investigate determinants of micro insurance business performance of 9 micro insurance providers in Ethiopian Commercial covering the period of 2009-2017. Mixed research approach was used and the primary data was collected using in-depth interview to capture qualitative aspects, whereas secondary data was collected from audited financial statement of micro insurance provider'sinstitutions and NBE annual report. The collected data was analyzed by using panel random effect regression model and by using e-views 9 software. The finding of the study shows that volume of capital and market share have statistically significant and positively affects ROA.With regard to ownership structure, it affects positivelyreturn on asset. On the contrary, premium growth, reinsurance dependency and underwriting risks have affected negatively ROA.Whereas, inflation affected negatively the financial performance of micro insurance providers.

Generally, the finding of this study were consistent with theory of modern portfolio theory and black swan theory for financial performance model's finding by maximizing expected portfolio returns for a given amount of portfolio risk, or equivalently reduce risk for a given level of return by prudently choosing the shares of different assets.

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