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Effect of Firm Characteristics on Financial Performance amongListed Companies at Rwanda Stock Exchange, Rwanda

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Abstract: Listed firms in Rwanda are expected to perform well financially considering that they are few and the environment for business is conducive. Whilst, there is empirical evidence on firm characteristics and profits of firms on a global and regional perspective, it appears that there are few that have focused on listed companies in Rwanda. Therefore, the study seeks to establish effect of firm characteristics on financial performance among listed companies at the Rwanda Stock Exchange, Rwanda. The study was anchored on Markowitz's Modern Portfolio while the population was all listed entities in RwandaStock Exchange. The findings revealed that liquidity had a negative and significant effect on financial performance while capital adequacy had a positive and significant effect on financial performance. The study concluded that liquidity has a negative and significant effect on financial performance. Also capital adequacy is crucial as it shows the extent to which operations can be funded using internal sources of capital.The study recommends that listed entities should have adequate capital as this was found to be a major determinant of financial performance. Also, firms should keep low liquidity as it was found out that an increase in liquidity does not favour firm performance.

Keywords: Financial Performance, Firm Characteristics, Liquidity and Capital Adequacy

I. Introduction

In spite of financial performance being of paramount value to firms, there are no conventionally agreed factors that determine it both in research in and in practice. Global case shows that financial returns among firms are a function of various factors both from internal and external factors. For example, Mongolian firms' financial wellness is significantly influenced by liquidity and leverage (Batchimeg, 2017). Liquidity is an ability of a firm to honour debt obligations as required by contracts especially in the short term using the existing current assets. A firm that can honour debts in full is capable of sustaining its operations as it can access inputs in credit from supplies. According to Quang, *et al.,* (2019) among Vietnamese listed entities, performance is largely influenced by variables like capital adequacy and liquidity. Financial performance of profit making entities is vital in that it depicts the ability of business concerns in meeting the interests of various stakeholders. Financial performance is a measure of efficiency in resource utilisation (Batchimeg, 2017). Moreover, financial performance is used to evaluate the going concern for a profit based company.

An entity does not operate in a closed environment since it sources inputs from the environment and in turn provides output in form of goods and or services to the same environment. In addition, financial performance measurement presents the results of economic activities and how well those goals are achieved. Matar and Eneizan (2018) noted that among significant factors that influence financial returns of Jordanian firms include liquidity while firm size and leverage hampers performance. Firm size refers to capacity to undertake investments using its total assets. Literature from regional perspective indicates that there are several determinants of financial performance. Ikpesu (2019) views that firms that have good performance in Nigeria have been noted to have a clear strategy on controlling liquidity in appropriate levels. Firms are involved in production of goods and services in the best methods such that they can foster performance. Management of firms is responsible in making decisions pertaining operations and resources configurations in such a way that the outcome is favourable. Firms with apt management of internal and external factors

comprising capital adequacy, liquidity, size and leverage in Ethiopia are known to exhibit better performance (Abebe & Abera, 2019).

In Rwanda, how firms manage various risks operating within and outside the firms are likely to influence the firms' returns (Hitimana, Kule, & Mbabazize, 2016). This is because the business environment is rapidly changing making it important for firms to focus efforts on risk management. A research done by Mauwa (2017) indicated that capital structure, corporate governance and dividend policy affects performance of firms in Rwanda and moreover emphasized that a careful asset structure need to be maintained as liquidity improves profitability of entities.

1.1Statement of the Problem

Factors that can potentially influence success of business concerns are broadly categorised into two. Internal factors are matters that arise due to management decisions and thus firm specific (Bongoye, Banafa, & Kingi, 2016). On the contrary, external factors are not influenced by management choices and decisions. Firm characteristics are thus issues whose origin is related to management decisions in pursuit of firm stability. For example, in theory, liquidity is a firm characteristic that ensure debts are repaid as per contracts (Banerjee & Majumdar, 2018). However, too much of liquidity ties resources that would otherwise be used in income generating projects (Bhatt & Verghese, 2018).Whilst, there is empirical evidence on firm characteristics and profits of firms on a global and regional perspective, it appears that there are few that have focused on listed companies in Rwanda. This study has identified such factors that include liquidity, firm size, capital adequacy and leverage as these factors are considered vital (Banerjee & Majumdar, 2018).

Still there exist no consensus on what are the optimum levels on these selected factors and this indicates that there is a knowledge gap that needs to be filled. For instance, among Nepalese banks, liquidity does not improve profits as it has insignificant positive role on return on assets while capital ratio results to negative insignificant influence on return on assets (Bhatt & Verghese, 2018). Contradicting results are reported in a study done in Nigeria among banks in that liquidity positively and significantly influences return on assets of banks (Kajola, Sanyaolu, Alao, & Ojunrongbe, 2019).Listed firms in Rwanda are expected to perform well financially considering that they are few and the environment for business is conducive. The government of Rwanda has undertaken deliberate efforts to ensure that there is a favourable business environment for investor to set up business in Rwanda. Notwithstanding the guidelines issued on management of listed firms, the RSE market indicated a drop in Share Price Index to close at 119.32 in June 2017 which was a 16% drop from that recorded on June 2016. In addition, in the same year equity market capitalization declined by 2 % to stand at 2.745 trillion (Capital Markets Authority, 2018).

In Rwanda, the study that assessed factors influenced financial performance of firms listed locally and cross-border listed identified that both regulatory framework improved financial performance while awareness did not (Muheirwe, Memba, & Warren, 2015). Also, Mauwa (2017) focused on listed firms in Rwanda and results showed that financial performance is affected by dividend policy, capital structure and corporate governance. All these discrepancies in results of study should be investigated further. This current study endeavored to find out firm characteristics onfinancial performance of listed companies at the Rwanda Stock Exchange.

II. Review of related Literature

2.1 Theoretical review

2.2.1 Markowitz's Modern Portfolio Theory

The Modern Portfolio Theory (MPT) is applicable in a study that encompasses the assessment of risks (Esfahani, Sobhiyah, & Yousefi, 2016). The MTP theory originates from the work of Markowitz who sought to provide information on how to mitigate market risk. Accordingly therefore, this advocates for diversification as a key strategy towards risk mitigation. This theory defines a portfolio as a combination of assets. It is important to note that assets are those things with economic values are used to generate income (Kaiser & Arbi, 2015). Thus, in order to maximize returns and minimize risks, investors are advised to have assets in different sectors of the economy. In addition, it is important for assets to be for different terms in order to hedge for the market risk. Modern Portfolio is built on the assumption that risks and returns of different investments are known with certainty. Accordingly, therefore, it is possible to mix assets and select the best portfolio which carries the maximum returns (Righi & Borenstein, 2018).

MPT presents an interesting discourse in that it advises on strict consideration of risks and returns for assets. Conventionally higher returns tends are characterised by higher risks. For this reason, those investors that are risk averse may miss opportunities to make income due to risk avoidance (Byers, Groth, & Sakao, 2015). As a remedy to this, the theory presents a mechanism that picks proportions in sectors and whose mix has the potential of increasing returns.

The theory views that in as much as individual risks are a factor to consider, what matters is the overall returns in a certain overall risk exposure. In the discussion of this theory, returns are the prices assets tend to fetch in normal trading conditions while the risk is the deviation from such expectations (Esfahani, Sobhiyah, & Yousefi, 2016).

This theory has been used in this study because of two reasons. MPT shows that resources are subtle and have focal importance as they impact firm activities and levels of operations. To a large extent, a larger firm is able to enjoy economies of scale while a small firm may not access such benefits. Large firms can provide products at discounted prices thus creating a niche and this can increase market share. The current study interrogated role of firm size on firm results. Secondly, modern portfolio theory recognises that assets do not necessarily yield best results but combinations of assets do. Whilst larger firms are potentially more profitability, this can only be realised if resources are put into good configurations and use.

2.2 Empirical Review

2.2.1 Liquidity and Financial Performance of Firms

Most businesses usually have debts which must be serviced as they fall due which means that that the business must allocate funds to this call. Liquidity refers to ability to clear debts without troubles or harming operations of the firms (Pusch, 2017). In this respect, it is important that businesses maintain a good balance of current assets which can be converted into cash thus enabling them to pay debts. In most times debts arise due to purchase of items on credit. Also, loans must be paid in good time as they are stipulated in loan offers. For this reason, liquidity must be optimally set for businesses in order not to have too much or too little (Masdupi, Tasman, & Atri, 2018). Empirical evidence across the globe has yielded different results on how liquidity tends to impact on firm's financial performance.

In Nigeria, the study on liquidity and performance of Nigerian banks was done by (Tamunosiki, Baribef, & Obari, 2017). This study examined the influence of liquidity ratio on financial returns of banks from the year 1984 to 2014. It was revealed that liquidity ratio had positive effect on financial returns of commercial banks in Nigeria. However, the influence of bank liquidity on performance was found to be insignificant.Another study was undertaken by (Tamunosiki, Baribef, & Obari, 2017) with the intention of assessing the determinants of profits of banks in Nigeria. The study had adopted a composite research design where both panel and cross-sectional design were used. Internal factors that were assessed were capital adequacy, liquidity and management expertise and all these three factors were found to be significant and positive determinants of banks' profits.

In South Africa, a study was done on liquidity and bank performance by Marozva, (2017). This study was an empirical review and used secondary data that was collected from a sample of the lenders from 1998 to 2014.The study used ordinary least square (OLS) and Autoregressive Distributed Lags in data analysis. It was revealed that revealed that in the long run the contribution of liquidity was negative especially where liquidity was measured vis a vis the asset liability and net interest margin.

2.2.2 Capital Adequacy and Financial Performance of Firms

Capital refers the resources that are required to start a business and keep it running and maintain it in a profitable position. As such, companies with higher capital adequacy are more likely to undertake more investments and therefore earn more income. However, it is important that the resources are invested in income earning projects otherwise the capital may not earn any income for firms. Capital adequacy has been examined across the globe by various researchers who have found contradicting information.Anwar and Muhammad*et al.,* (2017) undertook a study on credit risk and capital adequacy on profits of listed firms. Results of regression analysis indicated that non-performing loans generates a negative influence on profits of banks. On the other hand, capital adequacy has positive effect on profits of banks that were sampled.

Gizaw, Kebede and Selvaraj (2015) carried out a study in Ethiopia to find out the executions of commercial institutions in relation to the risk of credit. The researchers found out that credit risk measures have a great significance on the executions of commercial banks. Further capital adequacy impairs ROE but improves ROA.A detailed analysis of banks performance in the Middle East and North Africa countries (Baugatef & Mgadmi, 2016) where the study particularly was based on twenty four banks where panel regression was followed in data analysis. Among the internal aspects that were assessed included equity ownership and risk profiling of the customers. The data was from 2004 to 2012 and it was revealed that regulatory stipulations such as those of minimum capital indeed had a positive correlation on performance

of the lenders. It is for this reason that the study concluded that equity is an important determinant of share performance. The study noted that more capital was a good strategy as it cushioned the banks against the market risks.

In West Africa, Chechet and Olayiwola (2014) evaluated the effect of debts and capital combination on financial standings of those firms that were listed in Nigeria. From the target population, a sample of 70 firms was drawn and data analysis followed panel regression. The time variable was ten years up to 2009. The study reported and made a conclusion that share capital significantly and in a positive influenced on bank's profits. Therefore, it is hypothesized that;

H_01: Liquidity has no significant effect on financial performance of listed companies at the Rwanda Stock Exchange.

H_02: Capital adequacy has no significant effect on financial performance of listed companies at the Rwanda Stock Exchange.

III. Methodology

The study adopted panel data approach for a period of 10 years from year 2010 to 2019.The population of the study was listed firmsat Rwanda Stock Exchange.Inferential statistics was used to draw inferences from the data.Multiple linear regression analysis was applied in the study to test the formulated hypotheses and expressed as;

$$Y_{it} = \beta_{0it} + \beta_1 X_{1it} + \beta_2 X_{2it} + \varepsilon$$

Where,

Y_t= Financial Performance
X_1= Liquidity at time t
X_2= Capital adequacy at time t
β_0= Constant
β_1-β_2 = Coefficient of estimates
ε = Error tem
t = Period
i = Individual Firm

3.2 Diagnostic Tests

Panel data estimation method was done using STATA software. Several diagnostic tests were done on observations for variables in order to establish panel estimation was fit. These tests were as discussed in this area;

3.2.1 Multicollinearity

Multicollinearity is existence of high correlations among explanatory factors. Regression analysis assumes absence of multicollinearity. This study used variance inflation factor in testing for multicollinearity. A data set that does not have high correlations often has VIF values of less than 10.

3.2.2 Normality

Normality refers to symmetrical skewness of data observations around the mean. Normality is often used to showcase whether there are extreme observations from the mean. In this study, skewness and kurtosis were used to establish whether the data set had normal distribution. Skewness of between 10 and -10 and kurtosis between -3 and +3 showing that the variables did not significantly deviate from normality.

3.2.3 Serial Correlation

Serial correlation is a phenomenon that exists where observations for variables are correlated with observations for that same variable due to time. Existence of serial correlation indicates that observations for a variable are not random but rather lagged version of them in respect to time. In this study autocorrelation was measured using Wooldridge test of autocorrelation. The p-value for Wooldridge test was 0.017 this p-value was less than 0.05 then the null hypothesis was rejected.

3.2.4 Heteroskedasticity

Heteroskedasticity exist where residuals are non-constant and this as they are related with past period stochastic errors. Heteroskedasticity results to wrong estimates and model significance is significantly impaired. This study tested

heteroskedasticity using Modified Wald test. In case the p-value for modified Wald test is less than 0.05, null hypothesis for data not being homoscedastic is rejected.

3.3 Hausman Model Specification Test

There are two models that are associated with panel data analysis. The first one is random effect model. Random effect model is used where individual effects of items in the data are observed. This means that in RE, the assumption is that there are time variant individual effects which can be unobserved.

Fixed effect model is used where there are time invariant aspects in the data set. Moreover, in fixed effect, individual effects are considered to be correlated with the output variable. Another distinguishing feature is that random effects model is pegged on assumptions of normality while fixed effects is not as it allows individual effects in the data set. Random effects model is used where p-value of Hausman statistic is greater than 0.05 whilefixed effects model is used where p-value of Hausman statistic is less than 0.05

IV. Findings

4.1 Correlation Statistics

Correlation analysis was done to establish the strength of relationship between the study variables. The findings in table 1 revealed that liquidity correlated negatively with financial performance at -0.0115. Lastly there was a positive correlation between capital adequacy and financial performance at 0.5756.

Table 1: Correlations Matrix

Variables	Financial Performance	Liquidity	Capital Adequacy
Financial Performance	1.0000		
Liquidity	-0.0115	1.0000	
Capital Adequacy	0.5756	0.3933	1.0000

Source: Field data (2021).

4.2 Hausman Model Specification Test

To test the appropriate model to use Hausman test was done and the results on table 2 revealed The P-value for the Hausman test was 0.156 and implying that the preferred model is random effect. Random effects model is used where p-value of Hausman statistic is greater than 0.05.

Table 2: Hausman specification test

	Coef.
Chi-square test value	6.646
P-value	0.156

Source: (Field data, 2021)

4.3 Regression Analysis

The statistical findings in table 3 revealed that there is presence of the association between the study variables (R^2 = 0.452) implying that the combined prediction of liquidity and capital adequacy accounted for approximately 45.2% of the total variation on financial performance of listed firms in Rwanda stock exchange. The model was fit in predicting the contribution between the study variables which was statistically significant at 0.05 level of confidence (Chi-square = 58.317, $p<0.05$).

The first hypothesis stated that liquidity has no significant effect on financial performance of listed companies at the Rwanda Stock Exchange. The study findings exhibited that liquidityhad a negative influence which was statistically significant (β = -0.051, $p<0.05$) on financial performance of listed companies at the Rwanda Stock Exchange. This therefore implies that a unit change in liquidityreducesfinancial performanceby -0.051units.

The second hypothesis stated that capital adequacy has no significant effect on financial performance of listed companies at the Rwanda Stock Exchange. Results showed that there was a positive and significant effect on capitaland

financial performance of listed companies(β = 0.284; p<0.05). This implies that a unit change in capital increasesfinancial performance by 0.434units.

Table 3: Regression Results

Financial Performance	Coef.	St.Err	t-value	p-value	Sig.
Liquidity	-0.051	0.001	-2.52	0.012	**
Capital Adequacy	0.434	0.057	7.58	0.000	***
_cons	-0.471	0.271	-1.74	0.082	*

Mean dependent var	0.047	SD dependent var	0.144
Overall r-squared	0.452	Number of obs	76
Chi-square	58.317	Prob> chi2	0.000
R-squared within	0.468	R-squared between	0.353

*** p<0.01, ** p<0.05, * p<0.1

Source: Field data (2021)

V. Conclusion and Recommendations

This study investigated effect of firm characteristics on financial performance among listed companies at the Rwanda Stock Exchange, Rwanda.The study concluded that liquidity has a negative and significant effect on financial performance. Liquidity depicts that a firm is not using assets in the best ways possible. This is because, an increase in liquidity means that there is an opportunity cost that is incurred. Assets earn income when invested for longer periods since there is often a premium in returns. Therefore an increase in liquidity is harmful even though it depicts the ability of firms to repay obligations as and when they fall due.

Secondly the study concluded that capital adequacy was found to have positive and significant effect of firm performance. Moreover, capital adequacy was found to be a major determinant of firm performance. Capital adequacy is crucial as it shows the extent to which operations can be funded using internal sources of capital. Notably, internal sources of capital are cheaper as they do not attract interest and therefor do not have bankruptcy costs. Firms with higher capital adequacy ratio are able to survive financial downturns. Thus, capital adequacy ensures that firms can manage risks in the best ways and this can improve financial returns.

The study makes a number of recommendations in reference to the results. Listed entities should have adequate capital as this was found to be a major determinant of firm performance. This can be done by raising more capital through issuance of share capital. Secondly, firms should keep low liquidity as it was found out that an increase in liquidity does not favour firm performance. Instead of keeping too much current assets, firms should invest in interest earning opportunities in order to increase revenue and enhance firm performance.

Suggestions for Further Studies

It is suggested that another study be done for non-listed entities in order to have more results and add on what is documented on firm performance in Rwanda. Another study can be done on these factors using primary data in order to compare the results. More research would enhance policy making on firm characteristics and firm performance in Rwanda.

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