Macroeconomic Determinants of Corporate Failure in Tanzania: An Empirical Investigation

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Abstract
The corporate failures rate in Tanzania fluctuates greatly over time, and the characteristics of these fluctuations have not been investigated sufficiently. This paper examines the trends in corporate failures, with a particular focus on identifying the dynamic features of the series and associated macroeconomic variables movements using appropriate econometric techniques. This research investigates both the short-run and long-run dynamic linkages between corporate failures in Tanzania and selected macroeconomic variables by employing the Autoregressive Distributed Lag (ARDL) model. Time series Error Correction Model (ECM) estimates suggest that selected macroeconomic factors are related to corporate failures in the same direction both in the short run and the long run, and that quick adjustment to steady state path is being observed. The results also demonstrate that the selected macroeconomic variables exert differential impacts on corporate failures both in the short run and in the long run. The study reveals that corporate failure rates in Tanzania are significantly and positively associated with the exchange rate and interest rate, and inversely related to gross domestic product (GDP) growth both in the short run and long-run. In general, the results show expected and consistent relationships between shocks on selected macroeconomic variables and corporate failures.

Keywords: Error Correction Model (ECM), the Autoregressive Distributed Lag (ARDL), Corporate Failures, Macroeconomic Variables, Gross Domestic Product (GDP).

1. Introduction

The interesting question of why a corporation fails to compete and evolve over times becomes one of the most important issues in organizational studies as well as in strategic management. Due to different economic and financial policies undertaken in the country as well as the impact of global financial crisis, several corporations fail to survive and others find themselves to be passing through the trouble and difficult period. This paper intends to understand macroeconomic factors determining the corporate failure, especially when the turbulence moment is present caused either by internal or external shocks. The rationale for the study of this nature come up due to the fact that the government source of revenue is highly supported with this firm through corporate income tax and other tax paid to the state. Tax revenue as well as no-tax revenue are very useful in implementing and assessing the policy objectives for attaining sustainable human development and economic growth, including but not limited to expanding domestic financial resources, through saving and investment promotion programs that aimed at generating domestic revenue, creates employment opportunities, boost other economic sectors and support other development programmed for increasing people's welfare (Aiko, 2013). Thus corporate failures impede success of the business hence the government fails to collect expected domestic revenue, and fail to accomplish set development targets for country as a whole. Also the interest of the study of corporate failure can clearly be explained by the fact that large number of stakeholders are concerned with a firm's activity and with operation overtime, hence the failure of the corporation caused by macroeconomic shocks result in microeconomic consequences for multiple supporters of the corporations.

One way of understanding the practices that leads business success is by observing and analyzing the inverse of the best practices, that is, the behaviors associated with corporate failures (Liu, 2004). Many factors have been cited as reasons for failure may appear as factors affecting success of the corporation as well. The corporate failures rate in Tanzania fluctuates greatly over time, and the courses of these fluctuations need to be investigated sufficiently for sustainable growth and development of firms in the country. The major aim of this research paper is to determine whether the corporate failures in Tanzania are explained by the movement of macroeconomic variables in the short-run as well as in the long-run.

The study of this nature is important to both academicians in extending the frontier of knowledge and investment practitioners in running of corporations. The findings of the study is also of big help to portfolio managers in the private equity industry when assessing and evaluating the potential failure of firms and estimating the risk of default in a start–up type of business, while on the side of the state the study is useful for policy makers in identifying the relationship of macroeconomic variables fluctuations and the rate of corporate failures and propose effective policies and measures to conquer the problem and avoid any voluntary or involuntary liquidation.

2. Literature Review

2.1 Theoretical Framework

From literature point of view corporate failure may be defined in various ways; firstly as discontinuation of the business operation, secondly as the business does not earn an adequate return in order to cover it is costs, thirdly insolvency via the court petition. The first definition is a proxy of a corporate failure, as discontinuation suggests that resources have been shifted to more profitable opportunities, following a simple logic of opportunity cost. This is a very broad definition of failure, because discontinuation may be caused by non-economic motives such as acquisition, merger and even renaming of the corporation. The advantage of the second definition is the fact that it provides an economic criterion for failure. However, it is subjective because an adequate return is hard to define and people may have different implications.

The failure rate of corporations is mainly determined by three factors; first firm risk, that is, the effectiveness of the management and adequacy of its capital structure. New and young corporations are more likely to fail than old and experienced corporations (Altman, 1993). Small corporations are more prone to go bankrupt because their accessibility to the credit markets is more limited than that of large companies due to credit worth net (Bernanke and Gertler, 1995). Second factor is industry risk, that is, a shock to a specific industry, such as its exposure to export reform, import reform, tariff reform, custom and excise duties among others, and third is macroeconomic risk, that is, risk deriving from macroeconomic shocks or monetary factors. As it has been mention before, the aim of this paper is to explain the rate of corporate failure due to fluctuations in macroeconomic variables such as exchange rate, interest rate and GDP growth. A corporation usually fails because of a combination of different factors. For instance, a corporation has liabilities in foreign currency for inputs acquired and the local currency depreciates, it is unable to cover its liabilities and might go bankrupt. In this case, two factors determine this corporation to fail, a corporate factor - decision of the manager to take a loan in foreign currency and macroeconomic factor, local currency depreciation against foreign currency.

Studies conducted by different scholars in determining the role of macroeconomic variables in the failure of corporations aim at building models predicting the failure of an individual corporation in different sectors. The value of investigating corporate failures derives from their effect on the economy as a whole in aggregation. The most important effect is that corporate failure could indicate the fragility and instability of the business sector and have far-reaching macroeconomic consequences at the end of the day. Liquidation of a corporation is an extreme form of credit impairment. Corporate failures may affect capital in the banking sector; if realized losses on the corporation loan book are unanticipated, bank capital is eroded, thereby weakening the banking system of the country. Therefore, it is important for banks, regulators, and the authorities to understanding the factors that determine corporate failures in Tanzania

2.2 Empirical Evidence

Economics and finance researchers have shown consistent effort to investigate and document the causes of corporate failures, through out over the past five decades. Initial studies relating to corporate failure tend to concentrate on analyzing firm ratios in order to discriminate failed firms from non-failed firms in business operations. Beaver (1966) started off the discussion by performing a univariate analysis on 30 selected firms' financial ratios, and cash flow to total debt ratio was found to be the best single ratio predictor for corporate failures.

Since that time, other scholars refined the econometric techniques used thus resulted in the multi-discriminant analysis which involve compressing a multivariate signal to yield a lower dimensional signal amenable to classification (Altman, 1968, 1980; Taffler, 1983, 1984; Letza *et al.,* 2003), logit regression techniques (Ohlson, 1980; Mohamed *et al.,* 2001; Charitou *et al.,* 2004), and multi-logit models (Keasey and Short, 1990; Jones and Hensher, 2007). In addition to improving the statistical methods and techniques, other research works have extended this area of study to the definitions of bankruptcy and cover a variety of explanatory variables (Gilbert *et al.,* 1990; Poston *et al.,* 1994). Abdullah and Ahmad's (2005) study was concerned with the comparison of the logistic regression analysis and multi-discriminant analysis by using Malaysian corporate failure as a sample, and they found that logistic regression techniques were superior to multi-discriminant analysis.

In order to find out the causes of corporate failure, scholars have also incorporated non-financial variables such as number of directors, management behaviors, and age of corporation (Keasey and Watson, 1986; Lakshan and Wijekoon, 2012; Hwa-Hsien and Chloe, 2014), qualified opinion of the financial books auditors (Hopwood *et al.,* 1989; Flagg *et al.,* 1991) and measures of fund flows (Gentry *et al.,* 1987; Sharma and Iselin, 2003; Shyam and Rajesh, 2013; Unegbu and Adefila, 2013; Kosmas and Antonios, 2014; Shamsudin and Kamaluddin, 2015; OzIbrahim *et al.,* 2017). Similar studies have been carried out by Shamsher *et al*., (2001); Zulkarnain *et al.,* (2001); Mohamed *et al.,* (2001); and Abdullah and Ahmad (2005) in Southeast Asia. Shamsher and colleagues (2001) found that the leverage of the companies showed a gradual increased, while liquidity, profitability and cash flows of the failed firms showed a gradual deterioration, while. Stepwise multi-discriminant analysis has also been used to investigate empirically determinants of corporate failure. The findings show that the model accurately and significantly classified 91.1 percent and 89.3 percent of the failed and non-failed companies respectively (Zulkarnain *et al.,* 2001). Abdullah and Ahmad's (2005) study was concerned with the comparison of the logistic regression analysis and multi-discriminant analysis by using Malaysian corporate failure as a sample, and they found that logistic regression techniques were superior to multi-discriminant analysis.

Most of the studies discussed above concentrated on cross-sectional analysis; which means they did not take into account the actual changes in the variables of interest in the studies over time (Liu, 2004). Furthermore, the construction of these models centered on microeconomic framework, therefore they disregard the important general macroeconomic conditions in which the corporations are operating, and that this may significantly influence the firms' financial position and this particular study take that into account.

From the literature many studies have incorporated different macroeconomic variables such as interest rate (Desai and Montes, 1982; Hudson, 1986; Turner *et al.,* 1992; Liu and Wilson, 2002; Liu, 2004; Abdullah and Ahmad, 2005), profit (Hudson, 1986; Turner *et al.,* 1992; Cuthbertson and Hudson, 1996; Charitou *et al.,* 2004), income gearing (Cuthbertson and Hudson, 1996; Yu Lin and McClean, 2001), growth of money stock (Desai and Montes, 1982; Salman *et al.,* 2011), inflation (Wadhwani, 1986; Liu, 2009), exchange rate (Goudie and Meeks, 1991; Žiković, 2016), and legislation (Liu and Wilson, 2002; Dewaelheyns and Van Hulle , 2008; Campbell *et al.,* 2012). Although these studies utilized static and dynamic models to investigate the determinants of corporate failures, they are basically restricted to the description of the short-run relationships among the variables of interest. It follows therefore; it is quite difficult to separately interpret the short-run and long-run corporate failures behaviors in relations to macroeconomic shocks (Liu, 2004).

In order to overcome the limitations and shortcomings of restricted description of the short-run relationships among the variables, Liu (2004) examined the long-run relationship between macroeconomic variables and corporate failures in the equilibrium while incorporating short-run dynamics. The main objectives of the researcher were to explore the determinants of UK corporate failures and also to select the potential policy variable, which can then be adopted by the relevant policymakers to minimize the outcome of corporate failures. Generally, the econometric results show that corporate failure rates are statistically significant responsive to the changes in the inflation rates, nominal interest rates, real credit and corporate birth rates over the selected sample period.

3. Data and Methodology
3.1 Data
This study employ secondary data obtained from published sources, second hand source of information. The variables selected in the study based on the availability and reliability of data in which four explanatory variables (GDP growth, Interest rate, Exchange rate and a dummy variable to take into account the impact of global financial crisis) are being included. The data obtained from Ministry of Finance and Planning, National Bureau of Statistics (NBS) and International Financial Statistics Data Stream published by International Monetary Fund (IMF). In this study specific consideration is on those corporations which are voluntary liquidated in

Tanzania. Voluntary liquidation is going along with economic factors as most corporations their debt are not in dispute. Secondary data obtained is of the time series nature in which the given variables are being measure over a period of 1982 to 2015.

3.2 Econometric Model

A multiple linear regression model is used to analyze the impact of exogenous variables towards endogenous variable in order to determine the long-run effects of selected macroeconomic variables on corporate failure. The hypothesis of this study is to test whether the corporate failure in Tanzania could be explained by the movement of macroeconomic variables that consist of GDP growth, Exchange Rate and Interest Rate. The model explores the relationship of some of macroeconomic variables, with the rate of corporate failure as:-

$$CF_t = \mu o + \mu_1 EXR - \mu_2 RGDP - \mu_3 INTR + \mu_4 Dummy + \varepsilon_t$$

Where (CF) is corporate failure rate, (RGDP) is GDP growth rate, (INTR) is the interest rate, (EXR) is the exchange rate and a Dummy variable measured as 1 during a global financial crisis year and 0 otherwise, to represent unstable condition period during the crisis. The intercept is μ_o and $\mu_1, \mu_2, \mu_3, \mu_4$ are the Coefficients of the regressors and ε is an error term.

3.3 Estimation Technique

The ARDL bound test is being employed for cointegration analysis since it can be applied regardless of whether the regressors are purely I(0), purely I(1), or mutually cointegrated. Moreover, the order of cointegration of the underlying regressors is not required to be ascertained before to testing the existence of a level relationship between two variables (Pesaran *et al.,* 2001). Moreover, the bounds testing procedure used in this study is robust for a small sample study (Pattichis, 1999; Mah, 2000; Tang and Nair, 2002; Ahmad *et al.,* 2008) and is quite possible even when the exogenous variables are endogenous (Alam and Quazi, 2003; Nkoro and Uko, 2016). The ARDL cointegration test assumed that only one long-run relationship exists between the dependent variable and the exogenous variables. Following Pesaran and colleague (2001), the ARDL model can be presented as below:

$$\phi(L, p) y_t = \sum_{t=1}^{k} \beta_i(L, q_i) x_{it} + \delta w_t + \mu_t$$

Where;

$$\phi(L, p) = 1 - \phi_2 L^2 - .... - \phi_P L^P$$

$$\beta_i(L, q_i) = 1 - \beta_{i1} L - \beta_{i2} L^2 .... - \beta_{iq} L^{qi}, i = 1, 2, ..., k.$$

L is a lag operator $Ly_t = y_{t-1,}$ and w_t is a $sx1$ vector of deterministic variables, such as the intercept term, seasonal dummies, time trends or exogenous variables with fixed lags. All possible values of p = 0, 1, 2… m; $i = 1, 2, 3…k$ with a total of $(m+1)^{k+1}$. ARDL models can be

estimated by using the Ordinary Least Square (OLS). The long-run coefficients for the response of Y_t to a unit change in X_{it} are estimated by:

$$\phi_i = \frac{\hat{\beta}_i(1, q_i)}{\hat{\phi}(1, \hat{p})} = \frac{\hat{\beta}_{io} + \beta_{i1} + \ldots + \hat{\beta}_{i\hat{q}}}{1 - \hat{\phi}_1 - \hat{\phi}_2 \ldots \ldots - \hat{\phi}_{\hat{p}}}, \ i = 1, 2 \ldots k.$$

Where $\hat{p}$ and $\hat{q}_i$, $i = 1, 2\ldots$ k are the estimated values of p and q_i, $i = 1, 2, \ldots,$k. The related unrestricted error correction model is given by:

$$\Delta y_t = -\phi(1, \hat{p})EC_{t-1} + \sum_{i=1}^{k}\beta_{i0}\Delta x_{it} + \delta'\Delta w_t - \sum_{j=1}^{\hat{p}-1}\phi *_j \Delta y_{t-j} - \sum_{i=1}^{k} \sum^{q\hat{i}-1}\beta *_{ij} \Delta x_{i,t-j} + \mu_t$$

Where;

$$EC_t = y_t - \sum_{i=1}^{k}\hat{\theta}_i x_{it} - \hat{\psi}' w_t$$

Basically, the bound test developed by Pesaran and colleagues (2001) is the Wald test (F-statistic version of the bound testing approaches) for the lagged level variables in the right-hand side of unrestricted error correction models. This implies that the null hypothesis of no-cointegrating relation (Ho: $\delta_1 = \delta_2 = \delta_3 = \ldots = \delta_n = 0$) is being test by performing a joint significance test on the lagged level variables. The asymptotic distribution of the F-statistic is non-standard under the null hypothesis of no cointegrating relation between the analyzed variables, regardless of whether the exogenous variables are purely I(0) or I(1).

If the statistic from the Wald test falls outside the critical bounds value, under the conventionally used level of statistical significance such as 1 percent, 5 percent and 10 percent, a conclusive inference can be made without considering the order of integration of the exogenous variables. The null hypothesis of no cointegrating relation can be rejected, if the F-statistic exceeds the upper critical bound. The null hypothesis of no-cointegration cannot be rejected, if the F-statistic falls below the lower critical bound. A conclusive inference cannot be made in the case of the F-statistic falling between the upper and lower bounds. The order of integration I(d) for the exogenous variables must be known before any useful conclusion can be drawn (Pesaran *et al.,* 2001).

3.4 The Error Correction Modeling (ECM)
The second stage of ARDL approach is to estimate the coefficients of the long- run cointegration relationship and the corresponding Error Correction Model (ECM). The process of computing ECM involves inclusion of lagged residuals from auto regression model into a new model, with all the involved variables taken into the first difference. The specification of unrestricted error correction version of the ARDL is presented by;

$$\Delta(CF)_t = \alpha_0 + \sum_{i=1}^{n} \beta_1 \Delta(CF)_{t-i} + \sum_{i=1}^{n} \beta_2 \Delta(EXR)_{t-i} + \sum_{i=1}^{n} \beta_3 \Delta(RGDP)_{t-i} +$$

$$\sum_{i=1}^{n} \beta_4 \Delta(INTR)_{t-i} + \delta_1(CF)_{t-1} + \delta_2(EXR)_{t-1} + \delta_3(RGDP)_{t-1} +$$

$$\delta_4 + (INTR)_{t-1} + \alpha_1 Dummy + \varepsilon_{t-1}$$

The lagged error correction term (ε_{t-1}) derived from the Error Correction Model (ECM) is an important element in the dynamic of cointegrated system as it allows for adjustment back to the long-term equilibrium relationship given a deviation in the previous year.

4. Results and Discussions

The general *Mackinnon p – value* obtained is 0.1570 and the value of t-statistic of about -2.98 exceeds the critical bound of -2.89 (Dickey fuller test) at 5 percent significant level (See Table 1) this suggest that the problem of unit root is not existed in the regression model. In other words the null hypothesis of no cointegration can be rejected. Since the model passed the unit root test; these results ensure there exist a long-run relationship between selected macroeconomic variables and corporate failures in Tanzania.

Table 2 provides the estimates of the ARDL long-run coefficient for the model. The spurious regression problem does not exist in the regression model, since the endogenous and exogenous variables are cointegrated. Gross Domestic Product (RGDP) found to be statistically significant at 5% level, while Exchange Rate (EXR) found to be statistical significance at 1% significant level, and Interest rate (INTR) found to be insignificant at any statistical level of significance. Furthermore, results also revealed that the global financial crisis makes a significant contribution to the corporate failure rates in Tanzania as depicted by introduced dummy variable. The endogenous variable corporate failure (CF) and exogenous variables (macroeconomic determinants) are presented with logical signs as predicted in the formulated model. The regression for the underlying ARDL equation fits very well and passes the diagnostic tests against the serial correlation, non-normality errors and functional form misspecification of the model. The result implies that any movement in the GPD growth and the exchange rate are found to be cointegrated or co-moving with the changes in corporate failure rates. From theoretical view point, higher cost of borrowing may lower the degree of profitability of the corporation and thus put it under financial pressure which consequently may increase the possibility of the corporation going into bankruptcy. However, this study found interest rate to be statistically insignificant in determining the rate of corporate failure in Tanzania.

The estimated results of Error Correction Model (ECM) are presented in Table 3. The technique is more effective since it include the lagged residuals from ARDL model in ECM model. The ECM implies that the first difference of the endogenous variable depends on the first differences of the other exogenous and lagged endogenous variables and the error term differ from zero, the model is adjusted to equilibrium after second lag. The Granger Representation theorem explains that if the exogenous variables are cointegrated their relation can be presented as an ECM (Engle and Granger, 1987). This model results obtained from running various lags difference with aim

of minimizing the error term. After running the ECM, variables were found to be significant at different level of statistical significance (see Table 3).

Based on the findings of this study, it has been revealed that there is statistically significant relationship between the selected macroeconomic variables and corporate failures in Tanzania. The results reveal a negative statistically significant relationship between GDP growth and corporate failure. The inverse relationship between GDP growth and corporate failures can be explained as follows; the increasing GDP indicates the higher profitability of the firms in the economy from macro point of view, while from micro point of view higher per capita GDP implies high demand by households. Consequently this will lower corporate failures rate. Furthermore, exchange rate and corporate failure rate found to be significantly positive related. One of the explanations for this observed behavior is the fact that some of the inputs used by corporation are being imported from abroad. Following the increase of exchange rate, costs of imports as well as costs of production will tend to increase which consequently result into voluntary or involuntary liquidation of firms. The currencies of the emerging market economies are so volatile and depreciate time after time with foreign exchange rates which impact negatively on business success unless Marshall-Lerner condition is fulfilled. Capital flows play extra role of expanding investment opportunities during times of domestic crisis. Accessing and intermediation to global financial markets reduces financing costs, converge interest rate across the country and provide diversification of portfolio with reducing risk premium. Government can limit flow of capital markets by imposing a number of explicit and implicit taxes on capital flows; some scholars defend such taxes on capital inflows as a means of supporting a country's exchange rate policy.

The coefficient of the intercept found to be statistical significant at 1 percent significance level with a positive sign. This means that corporate failure rate in Tanzania is increasing time wise (ceteris paribus). This natural increasing behavior of corporate failure rate is mostly common in emerging market economies; the problem critically exits in such countries which their per capital income is low like Tanzania. However the magnitude of this problem depends on countries specific regulation and policy in different sectors which could be the main cause for corporate failure. By inclusion of other factors which are not covered by this paper such regulation, inflation, age of the firm, management behavior, Political risk and the like, and a constant term might have negative influence on corporate failure over time.

 Meanwhile the study found interest rate to be one among effective factor in Error Correction Model; there is strong evidence which show that there is long-run relationship between corporate failure and interest rate (see Table 3). The interest rate was found to be statistical significant at 10% (second lag). Based on the literature most of the study reveals that increase in interest rate causes the increase in corporate failure rate, mostly due corporate failure to acquire loans

resulting from higher cost of borrowing which affect corporate's profitability (Kosmas and Antonios, 2014).

Once a cointegration relationship amongst the variables established, the study estimated an error-correction model (ECM) so as to determine the speed of adjustment of short-run dynamics behavior to the long-run equilibrium of corporate failure. The greater the coefficient of the error-correcting term, signify that the model is adjusting faster from the short-run distortions to the long-run equilibrium. The error correction term estimated at -0.646 is statistically significant and has the correct sign, making certain that the long-run equilibrium is attainable. Thus, $1 - t\,ECT$ coefficient of -0.646 suggests that corporate failure rate is adjusting rapidly to the changes in the exogenous variables before reaching its equilibrium (see Table 3).

5. Concluding Remarks

Initial studies relating to corporate failure tend to concentrate on analyzing firm ratios in order to discriminate failed firms from non-failed firms in business operations. Moreover, most of those studies tend to investigate this behavior from the micro point of view. This paper studies the determinant of corporate failures for the case of Tanzania from the macro standpoint. In this study, a robust and recent time series cointegration ARDL method to determine the long-run dynamic linkages between the macroeconomics variables and the corporate failures has been employed. The results Mackinnon p-value reveal long-run relationship between macroeconomic variables of interest with the corporate failure in Tanzania. This research investigated both the short-run and long-run dynamics linkages between corporate failure and selected macroeconomics variables by employing the Autoregressive Distributed Lag (ARDL) and Error Correction Model (ECM). Regression results suggest that GDP growth, exchange rate and interest rate are related to firm failures in the same direction both in the short-run and the long-run and that adjustment to steady state path is quit quickly. A regression model is also estimated with a dummy variable included to decipher the corporate failure rate taking into account the global financial crisis. The findings obtained from this study have important implications for the efficient conduct of monetary policy management with regard to the survival of the corporations in financially distressed and financially driven business cycles. Acting as one of the monetary policy's mechanisms, interest rate and exchange rate are being used by the Central Bank to control the fluctuation in the economy. Central monetary authority (say BOT) is responsible for setting the base of the interest rate, in which commercial banks and other financial intermediaries use to lend to their customers since any movement in interest rate by commercial banks and financial institutions is associated with corporate failure, it is suggested that the central monetary authority should take that into account in making policy decisions. Based on observed relationship between macroeconomic variables of GDP growth, interest rate, exchange rate and corporate failure, this should help investors and policy makers in reducing rate of corporate failure, hence these incomes and employment generating corporations will be sustainable.

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APPENDICES

Table 1: Error Correction result for Unit Root

Dickey-Fuller test for unit root			Number of observation = 31	
	Test Statistic	1% Critical Value	5% Critical Value	10 % Critical value
Z(t)	-2.384	-3.709	-2.983	-2.623
Mackinnon approximate p-value for z(t) = 0.1570				

Table 2: ARDL Estimation of Parameters

Dependent Variable Corporate Failure Rates			
Independent Variables	Coefficients	Standard Error	T-Statistics
$RGDP_t$	-0.4952	0.2182	-2.27**
EXR_t	0.2727	0.0611	4.46*
$INTR_t$	0.1519	0.1032	1.47
$DUMMY_t$	0.0751	0.2282	2.59**
INTERCEPT	11.7447	3.2211	3.65*

Note: **, *Statistically significant at 5% and 1% respectively.

Table 3: Results of Error Correction Model (ECM)

Dependent Variable Corporate Failure Rates			
Independent Variables	Coefficients	P Value	T-Statistics
$\Delta RGDP_t$	-0.2863	0.0997	-2.8730**
$\Delta RGDP_{t-1}$	0.1760	1.7380	0.7920
ΔEXR_t	0.7984	0.0206	3.9410*
ΔEXR_{t-1}	0.1344	3.6830	0.3840
$\Delta INTR_t$	1.1688	0.0934	1.7617**
$\Delta INTR_{t-1}$	0.7312	0.0507	2.3310**
$\Delta DUMMY_t$	-2.9677	0.0127	-3.4170*
INTERCEPT	-0.8318	0.0556	-2.9170**
ECM(-1)	-0.6460	0.0132	-4.890*

Note: **, *Statistically significant at 10% and 5% respectively.