

Evidences and Determinants of Zombie Firms: Implication on Economic Growth

Felicia Anikpe NAIMO¹
Sunday Oseiweh OGBEIDE²

ABSTRACT

The study examined determinants of zombie firms using a sample of seventy five (75) listed non-financial firms in Nigeria. The correlation statistics, panel fully modified ordinary least squares (FMOLS) and panel ordinary least squares estimation methods were applied to analyze the data for the period 2012 to 2019. The study evidenced about 17.3% existence of zombie firms in the non-financial sector. Capital adequacy, interest coverage ratio, earnings before interest, and tax and firm age were found to be the key drivers of zombie phenomenon in the Nigeria clime. These drivers of zombie phenomena were also found to contribute adversely to the economic development of Nigeria, although the impact was not significant. The study concludes that the infiltration/prevalence of zombie firms causes a dragging effect on the economy of Nigeria. The study recommends that the regulatory authority should develop a framework with which firms with a zombie status can be monitored and managed in order to safe guide the interest of shareholders and the adverse implication on economic development. Firms whose performances are akin to zombie firms' status should be encouraged by regulatory authorities to embrace mergers and acquisition schemes to avoid loss of shareholders wealth and the dragging effect on the economy.

KEYWORDS: capital adequacy, economy, losses, negative equity, zombie firm

JEL CLASSIFICATION: M11, E12, G11

1. INTRODUCTION

The importance of the healthiness of firms in driving the goal of shareholders' wealth maximization cannot be over-emphasized in the light of the macroeconomic challenges that ravage the corporate world globally. A healthy firm is one which has excess income over its liability, maintains a desired level of liquidity, has the ability to service fixed interest charges obligations as they fall due, and becomes profitable in short and medium-term periods. Where a firm fails to satisfy these identified criteria, it may be sliding into a zombie status (Binh, Uyen & Thuan, 2020).

Firms with reported frequent under-performance, under-productivity, and negative profitability are best described as zombie firms, and they remain a key area which has continued to elicit the concern of policy makers, researchers, and other stakeholders globally (Bloom et al., 2010; Camacho-Miñano, Segovia-Vargas & Pascual-Ezama, 2015; Muñoz-Izquierdo, Segovia-Vargas & Pascual-Ezama, 2018).

Since over three decades now and based on several reported cases of bankruptcy and liquidation of notable companies such as Enron-(US), WorldCom, Parmalat-(Italy), Nortel-(Canada), Onetel (Australia), Lehman Brother and Merrill Lynch, American International Group (AIG),

¹ Department of Banking and Finance, Faculty of Management Sciences, University of Benin, Benin City, Edo State, Nigeria.

² Department of Accounting and Finance, Faculty of Humanities, Social and Management Sciences, Elizade University, Ilara-Mokin, Ondo State, Nigeria. Corresponding Author's E-mail: sunnyogbeide2017@gmail.com

Oceanic and Intercontinental banks (Nigeria) internationally and locally, a lot of economics and finance scholars appear to be focusing on these zombie firms and their determinants (Sekine, Kobayashi & Saita, 2003; Ahearne & Shinada, 2005; Peek & Rosengren, 2005; Caballero, Hoshi & Kashyap, 2008); Urionabarrenetxea, San-Jose & Retolaza, 2016; Imai, 2016; Urionabarrenetxea, Garcia-Merino, San-Jose & Retolaza, 2017; Adalet-McGowan, Andrews & Millot, 2017a; Goto & Wilbur, 2019).

According to Urionabarrenetxea et al. (2017) and Blažková and Dvouletý (2019), while occurrence of zombie firms is common in developed countries such as the U.S., UK., Japan among others, the researches on zombie firms are, however, evolving, and the evidence from developing climes is rare, thus inducing the need for empirical assessment. Andrews and Petroulakis (2019), posit that the research on zombie firms is not on the increase as it should be, implying that it is an under-researched area with great potential for researchers in developing countries. Luo, Li and Zhang (2015); Retolaza, San-Jose, Urionabarrenetxea and Garcia-Merino (2016), also stressed that scholars of international finance are spending little time researching on firms with negative equities and their spiral effects. This development and keen observation is frequently constituting a noticeable gap in researches on zombie firms generally. In the Nigeria clime for instance, the history of zombie firms is not known. How and when non-zombie firms become zombie firms; and the determinants of zombie firms yet to capture the attention of researchers, industry practitioners and policy makers in the context of Nigeria. Providing pertinent answers to these identified germane issues on the empirical front is the central focus of this study, with a view to contributing to the literature.

This study seeks to provide empirical evidence using listed non-financial firms in Nigeria premised on several motivated reasons. First, firms from the non-financial sector are of crucial economic and social significance (Zouaghi, Sánchez-García & Hirsch, 2017), having mutual interconnection with the larger economy (Saitone & Sexton, 2017). For example, the presence of zombie firms may have far-reaching negative effects on economic stability, manifesting in the form of unemployment, low productivity, and decline in economic performance. Flowing from the research gap, the specific objectives of the study are to find out the existence of zombies, examine the determinants of zombie firms, as well as the implication of zombie firms on the Nigerian economy. Apart from the introductory section of this study, section two deals with the literature review, section three is the methodology, section four is empirical analysis and discussion, while section five focuses on conclusion and recommendations.

1.2 Motivation for the study

This study is germane and spectacular in two manners to the myriad researches so far on dead walking corpse companies and the economy in emerging markets. First and foremost, the study is the first of its kind in Nigeria to the best of the knowledge of the researcher to empirically investigate the evidences and the determinants of zombie firms and its implication on an economy in the emerging market of Nigeria. While the threats caused by zombie firms to shareholders' wealth and stakeholders' expectations and the larger economy have been mainly examined in off- shore-countries such as Japan, the United Kingdom, Spain, and in few other Europe countries, it is worthy to note that at the moment, this frontier of knowledge, study or analysis is yet to be extended to developing climes such as Nigeria. This study, therefore, expands the boundary of knowledge in Nigeria by unravelling the existence of zombie firms and their determinants and implications. Moreover, it becomes one of the very pioneer studies on zombie firms specifically in the emerging market of Nigeria. The analysis and results achieved from this study have intriguing and potential connotations. Secondly, the outcome of

the study seeks to urge the government and key regulatory authorities in Nigeria to urgently develop effective action frameworks towards carrying out an assessment and appraisal of dead, walking corpse (zombie firms), given their attendant impacts on shareholders' wealth, stakeholders' expectations, and on the economy at large. This policy implication, if embraced by the concerned authorities will go a long way ameliorating the performance of listed firms, enhancing productivity and economic activities and promoting economic stability both in short-run and long-run, respectively.

2. LITERATURE REVIEW

2.1 Concept of Zombies Firms

The concept of a zombie firm was first raised by Kane (1980), in the advent of the America Savings & Loan crisis of the 1980s. He describes a zombie firm as a firm that is likely to be buried in its grave by its lenders except for the timely intervention of the government of the country through its monetary authority using bailout funds. Kane (1980) further emphasized that a company becomes zombie when it continuously sustains losses that cause the realistic value of its assets to be less than the value of its liabilities. A zombie firm is a bankrupt firm and it can only continue to operate because of its ability to meet up its various financial obligations through the instrumentality of the government's timely credit assistance.

Basically, firms with zombie status are those with clear evidence of inability to service fixed interest charges obligations as they fall due; and they are also firms that sustain losses and have negative equity for a consecutive number of years (Mohrman & Stuerke, 2014; Blažková & Dvouletý, 2018). In terms of peculiarity, zombie firms are those firms with unfavorable profit and negative equity value for a considerable period of time, despite the fact they still continue in business (Binh, et al. 2020). Due to their continuity in business operations regardless of obvious signs of consecutive losses, inability to pay interest charges, and negative equity value, they are commonly regarded as 'walking corpses'. Zombie firms are companies which are unable to pay back their borrowed funds for a defined period of time, maybe in a three to ten years consecutive period, and still continue operating. In the eyes of the general public and financial analysts, zombie firms are dead but walking corpses waiting to be buried in a corporate graveyard. Zombie firms are seen as distress companies and candidates in a state of liquidation. According to Papworth (2013); and Dvouletý (2019), zombie firms are firms which are heavily indebted; they are only able to generate adequate cash inflow to pay the interest charges on debts, but the principal amount of the debts still remain unpaid; their capacity to meet loan interest payments is largely a function of continuing reduced interest payments for a period of three consecutive years.

Overtly, zombie firms are akin to business firms in bankruptcy, financial distress, and with clear symptoms of negative equity (Urionabarrenetxea et al., 2016). Firms with an evidence-based zombie status will usually have spiral effects on the economy. For instance, firms that are unable to make profits, pay interest charges, and experience negative equity will naturally have difficulties in satisfying the need of various stakeholders such as the government, creditors, employees, and the general public in the environment where they operate. For instance, the government is interested in the profit before tax of a business firm for a period. In a situation where a firm makes consecutive losses, it cannot be able to pay company income tax (CIT) to the government. Revenues derived from company income tax by the government are commonly used to carry out capital expenditures such as the construction of roads, bridges, railways, building schools and healthcare centres. Capital expenditures are tools of expansionary fiscal

policy used by the government to influence the economic activities in a favorable direction in a country. Thus, the negative profitability (losses) of firms in zombie status could adversely affect the revenue to the government and, by implication, impact negatively on economic activities and performance in a country.

Firms with zombie status may hamper financial intermediation. Financial intermediation, which principally involves extending credit facility from the surplus unit to the deficit unit, could be affected if there is a likely occurrence of credit risk, viz-a-viz default in interest charges and loan repayment (Ogbeide, 2021). If a creditor, such as a bank, extends a loan to a business firm, it will be interested in the ability of such a business firm to pay the fixed interest charges as well as the principal sum of money borrowed. Creditors are also interested in the profitability of a business firm. This is because the profitability of a firm gives full assurance to creditors that such a firm is healthy to extend credits facility (loan) for the purpose of repayment. Default in interest charges and loan repayment perhaps due to liquidity and profitability crises, all things being equal, often affects the flow of funds from the surplus unit to the deficit units, thus hampering quick access to capital to undertake investment activities, production of goods, rendering of services, and consequently stunt economic growth. Where banks engage in financing firms in zombie status, they could be encouraging misallocation of credit, which may have a concomitant effect in the financial sector of that economy (Ahearne & Shinada, 2005).

Since zombie firms may not enjoy financial intermediation, investment and economic activities may be at low ebb, thus affecting the larger economy. Zombie firms are likely not able to pay salaries and wages to employees as is due because of negative profitability and equity. Employees are not willing to stay and work in a company that cannot guarantee their job security or salary payment all the time (Ogbeide, 2021). Zombie firms are likely to engage in downsizing, thus contributing to the rate of unemployment in an economy. Hence, Onaran (2011); Broz and Ridzak, (2017); Andrews and Petroulakis (2019) averred that zombie firms are major contributors to a weak economy. A major characteristic of zombie firms is their tendency to crowd out the growth of non-zombie firms in an economy. According to Issam, Peter, and Sebastian (2018), nations with a huge chunk of stocks of zombie firms are likely to experience significant drop in economic growth and investment dynamics than they would have experienced in the absence of sizeable shares of zombie firms.

2.2 Assessment of the Growth of Zombie Firms

Irrespective of the indicators that can be used to reveal zombie firms, the interesting thing is about the growing number of firms considered to be in a zombie status in the corporate world globally. Binh et al. (2020) asserted that the numbers of zombie firms have increased astronomically in the developed climes, unlike in the developing countries. For example, Binh et al. (2020) carried out a study to assess the number of zombie firms in the US, Europe, China, and Asia and reported that about 5300 firms were unable to carry out debt-servicing costs from operating profits for three consecutive years up to 2018. Binh et al. (2020) further stressed that Europe has the highest number of zombie firms with 1,439 followed by the US with 923 firms. They opined that the ratio of heavily indebted firms is common in the medical, pharmaceutical, non-ferrous metals, energy, and information technology industries. Binh et al. (2020) study also reported that in Asia, where debt has risen greatly over the past years, India was ranked the leader with 617 zombie firms in 2018, followed by China with 431 zombie firms, South Korea with 371 zombie firms and Taiwan with 327 zombie firms. In Japan, the number of firms in zombie status reached about 109 low, and the reason for this low figure is because most Japanese firms tend to have low debt profile (Binh et al. 2020). The number of zombie firms

has also increased in India, Indonesia, and South Korea. In India, zombie firms represent about 26% of the total quoted firms, 24% in Indonesia, and 18% in South Korea (Binh et al. 2020). In Nigeria, empirical evidence on the number and proportion of zombie firms appears to be lacking, thus prompting the need for this study.

2.3 Determinants of Zombie Firms

There are a number of key indicators which can be used to identify or gauge zombie firms through financial statement analysis (Binh et al., 2020). Hoshi (2006), Imai (2016), and Urionabarrenetxea et al. (2017) astutely emphasized several indicators which can be employed to identify zombies from financial statements. From the literature point of view, most factors precipitating zombie are in form of negative equity (assets), inability to pay interest charges, and losses in three to ten year period. Commonly, three to ten year periods are the thresholds for assessing a firm which has slide into a zombie status. Other likely causal factors of zombie firms include but are not restricted to government weak policy response and poor attitude of politicians in using effective policies to tackle recession in an economy towards averting harsh effects.

Zombie firms are companies which had sustained negative value of pledge assets (equity) and are still carrying out business transactions (Binh et al., 2020). In the view of Urionabarrenetxea et al. (2017), one of the best criteria to identify a zombie firm is its inability to make interest payment; and while this is a good norm, data may not readily be available to drive home a point by a researcher on the empirical front. In lieu of this, the authors proposed criteria which include a firm's inability to pay short term loans which can be ascertained in the financial statement or in the statement of financial position.

In furtherance of this, Papworth (2013) posits that monetary policy rate, contextually, interest rate could be a major factor responsible for some firms sliding into zombie phenomena. Papworth (2013) also notes that a firm's capital adequacy influences zombie phenomena among firms and in an economy. Firms that are not capitally adequate may struggle with productivity, may not be able to undertake viable investments, meet financial obligation, as they remain unprofitable; and this in turn affects them from accessing financial resources from financial institutions. It therefore implies that the occurrence of zombie firms engenders credit risk of banks, thus negatively affecting financial intermediation and, consequently, the larger economy. Zombie firms are born through business cycle and in specific via the policies that enhance it (Papworth, 2013). At a political level, there may be reluctance in government's efforts towards boosting aggregate demand through credit expansion, and in particular through lowering interest rates that seeks to encourage investment in projects that would revamp the economy in a slowed down period (Papworth, 2013).

The poor policy response of the government especially during an economic recession has the potential of causing firms to snowball into zombie status. Papworth (2013), notes that government policies which fail to necessitate economic booms and busts help create zombie firms. Again, the attitudes of politicians towards responding to policies aimed at tackling recessions also help to influence zombie phenomena or firms. And to guard against the negative spiral effects of zombie phenomena during recession, both politicians and affected banks feel reluctant to expose the zombie firms for what they are (Papworth, 2013).

Most essentially, there are certain germane reasons, while government can be blamed for occurrence of zombie phenomena among firms and in the larger economy. For example, interest

rates charges by commercial banks against individual and corporate customers are commonly set by the apex bank, the Central bank. Since the Central bank is an agency of the government, the interest rate it charges commercial banks, indirectly is a function of the government decision. When the government guarantees the bailout of commercial banks which have been affected due to interest and loan repayment default, it can be said to be indirectly and politically influencing zombie phenomena among firms and in the economy (Qu, 2019). A good example was the government effort to bail out some financial institutions premised on the single reason that banks cannot be permitted to be bankrupt in the UK in the 2008/2009 global financial crisis. In fact, the government was ready then to take a drastic step to bail those affected banks if they get into trouble in the UK. Similarly, the government may want to regulate the banking sector and then choose to specify the capital adequacy requirement, just as it occurred in the banking sector of Nigeria during the 2005/2006 recapitalization. During the 2005/2006 bank recapitalization, the government mandated all banks to maintain a minimum capital base of twenty-five billion naira (N25, 000,000) irrespective of the size of their loan-giving capacity. Perhaps, the prime aim was to ensure the banks are resilient, and have enough buffer to absorb any losses. Albeit, the drawback of this government policy thrust is that it could make the commercial banks very reluctant at foreclosing on corporate debtors, thus promoting zombie firm occurrence.

Government is not the only causal factor in zombie phenomena in a country. Financial institutions are also guilty of creating and preserving zombie firms in recession (Papworth, 2013). Banks are the willing agents of government policy. In a boom period, banks are keen to expand their loan books as much as possible, and tend to ignore the risk that they will eventually be exposed to losses. Once the recession sets in, banks often face great pressure not to liquidate firms. From a business perspective, having a debtor that can pay their interest is not a terrible thing, but on the one hand, the bank still has an income; on the other, it never has to actually mark down the loss on its loan book (Papworth, 2013). Frequent rolling of the loan over which in financial circles is referred to “forbearance” however engenders occurrence of zombie firms (Papworth, 2013; Adalet-McGowan, Andrews & Millot, 2017a).

A firm can be in a zombie status if it is not able to make impressive profits (that is, it makes losses) for consecutive periods. Albeit, this view has also received sharp criticism from scholars on the ground that profits can be window-dressed. Similarly, zombie companies can arise if they have negative equities. Hoshi (2006) examined a sample of sixty three firms listed in Japan in the period 1997-2001 and concluded that zombie firms tend to have low profit, high debt to total assets ratio, and high dependence on banks. Hoshi (2006) accentuated that when the size of the business in regard to capital size, and labor size is small, the business has a higher chance of sliding into a zombie status, but when the size of the firm is large enough, it is less likely to become a pure zombie.

2.4 Resurrecting Zombie Firms

Bringing firms back from zombie status requires a great deal of technicality, managerial wizardry, and effective turnaround strategies. The majority of companies in zombie status have the capacity to become profitable if the turnaround professional managers are effective in their day-to-day management and the firms so choose to properly engage in an efficient corporate restructuring (Papworth, 2013). Hence, Papworth (2013) averred that most current researches on zombie firm turnaround strategies encompass crisis stabilization, new leadership, stakeholder management, strategic focus, critical process improvements, organizational change, and financial restructuring.

The stabilization of a firm in an attempt to resurrect zombie firms requires restoring the confidence of key stakeholders in the business environment. This may be achieved by effectively communicating with stakeholders such as banks and existing shareholders on when competence to pay back loan and dividend is possible. A zombie firm can be resurrected through strategic focus which primarily involves redefining the business, engaging in divestment, promoting growth through mergers and acquisition, and possibly via outsourcing. Additionally, the managers of a zombie firm can resurrect such a firm by carrying out financial restructuring. Basically, the aim of financial restructuring is to restore the firm to become solvent in terms of being able to have favorable cash flow, rearrange the capital structure towards ensuring adequate funds either from new sources or retained earnings.

2.5 Empirical Review

While occurrence of zombie firms is common in developed countries such as the US, the UK, Japan among others, the researches on zombie firms are however evolving, and the evidence from developing climes is rare (Urionabarrenetxea et al., 2017; Blažková & Dvouletý, 2019). Urionabarrenetxea et al., (2018) investigated the existence of zombie firms using a Spanish sample from 2010 to 2014. The finding shows that zombie firms are common in Spain and contribute to crippling the economy of the country.

Issam et al. (2018) examined zombie firms from the period 2010 and 2013 across nineteen European nations, using firm-level data for over 1,000,000 firms, with special consideration of 3 main alternative measure of zombie firms for the purpose of robustness. The outcome of the research indicates that zombie firms were on the rise in Europe based on 2013 as compared to 2010. The result also points out that zombie firms were high in Greece and Spain and minimal in Czech Republic and Slovakia, respectively. The analysis also clearly differentiated between the size and age of the companies. The result indicates that larger and very old companies were more likely to be in a zombie status compared to very small and younger companies. However, companies that were quite young, with at least 3 years of age, using incorporation age as a benchmark were deliberately omitted from the selected sample size.

The study by Hoshi (2006) shows that roll-over of debt by financial institutions engenders likelihood of a gloomy economy, thus affecting productivity of companies. The study by Adalet-McGowan et al. (2017a) chose firms regarded as zombie through the employment of interest coverage and incorporation age of ten years. They concluded that number of interest coverage and years of incorporation matter for new firms towards assessing zombie firm status. Decker, Haltiwanger, and Jarmin Miranda (2016) examined the phenomenon of zombie firms in nine countries over the period 2003-2013. In the study, they concluded that zombie firms lead to a drag on the economy, with declining productivity and greater financial insolvency.

Barros, Caires, and Pereira (2017) examined the phenomenon of firms with negative equities in Portuguese. They reported the existence of zombie firms in that country. The study by Adalet-McGowan and Andrews (2017a) established the existence of zombie firms and concluded that such firms in zombie status are capable of causing a dragging effect on an economy of a country. Adalet-McGowan, Andrews and Millot (2017b) explores variation in terms of zombie firms in different countries and their potential links with two inter-related sources of labor productivity weakness in the context of survival of and capital misallocation in OECD countries. Their stand was that zombie firms are drivers of capital misallocation in the financial sector.

Andrews, Criscuolo and Gal (2016) and Adalet-McGowan et al. (2017b) conclude that in addition, zombie firms are characterized by capital misallocation and stalling technological diffusion. Evidence suggests that the zombie firm problem in Europe is also connected to banking sector weakness and bank forbearance. According to the submission of the findings, reviving productivity growth, will, require policies to diversify the source of corporate financing and bank lending towards market-based and equity financing. These gains are, accordingly, partly realized via the restructuring of weak firms, which in turn spurs the reallocation of capital to more productive firms. The findings, according to the authors, carry strong policy implications, in light of the fact that there is much scope to reform insolvency regimes in many OECD countries and given evidence that rising capital misallocation and the increasing survival of low productivity firms have contributed to the productivity slowdown.

Caballero et al. (2008) and Adalet-McGowan et al. (2017a), find that higher share of zombie companies have potentially weighing-down effect on aggregate productivity. Blažková and Dvouletý (2020) examine a sample of inefficient and uncompetitive companies operating in Czech Republic between 2003 and 2015, measuring zombie firms as firms with negative equity for three consecutive years. Their findings reveal that zombie firms are smaller companies mainly located in metropolitan areas and are most likely middle-aged companies with low profitability and having significant negative impact on sustainable economic growth.

From the empirical reports above, it is obvious that none of the prior studies concentrated on listed firms in Sub-Sahara Africa countries such as Nigeria. This constitutes a research gap that this study seeks to address, by employing data from listed firms to investigate the existence of zombie firms in Nigeria and the implication on the economy.

3. METHODOLOGY

This study examines the existence and determinants of zombie firms in the economy of Nigeria using the descriptive, correlation, and causal-research designs, respectively. The study population consists of 109 listed non- financial firms in Nigeria. Seventy-five (75) listed non-financial firms were selected using the simple random sampling technique in the period 2012 to 2019. The descriptive correlation statistics and generalized method of moment (GMM) were applied to analyze the data. The robustness tests were also carried out using STATA 16 version software. The models used in the study are underpinned to the study of Andrews and Petroulakis (2019) and Binh et al. (2020), which identified factors of zombie firms across 11 Europe countries and in Vietnam, respectively. The models are, however, modified and adapted to suit the specific objective of this study. The model is stated in its stochastic form as follows:

$$Zombie_{it} = \beta_0 + \beta_1Zombie_{it-1} + \beta_2Incov_{it} + \beta_3Ebit_{it} + \beta_4Capadq_{it} + \beta_4 \sum control\ variable_{it} + \varepsilon_{it} \dots \dots \dots (1)$$

$$GDPCG_{it} = \beta_0 + \beta_1Zombie_{it-1} + \beta_2Incov_{it} + \beta_3Ebit_{it} + \beta_3Capadq_{it} + \varepsilon_{it} \dots \dots \dots (2)$$

where, $Zombie_{it}$ = Negative equity, constant losses and inability to pay interest charges on loan of i firm in t period;

$GDPCG$ represents gross domestic product per capita growth in time t ; $Inco_{it}$ = Interest coverage ratio of i firm in t period; $Ebit_{it}$ = Earnings before interest and tax of i firm in t period; $Capadq_{it}$ = capital adequacy of i firm in t period;

Σ Control variables_{it} = consisting of firm size; and firm age respectively; i = Individual firm in the sample size; t = Period the study covers; ε = Error term acting as a surrogate in the models and β_0 = Intercept.

Table 1 relates to the procedure used to measure the variables in the models one and two. Sources where the measurements of the variables were gotten are also indicated in the table for clarification.

Table 1. Measurement of the Variables

S/N	Variables	Type of Variables	Measurements	References
1.	Zombie	Dependent variable	(i) Consecutive Losses (ii) Negative Equity	Binh et al.(2020)
2.	Zombie	Independent Variable	A dummy variable equal to one (1) if the firm is in a zombie status and zero (0) otherwise. Restricted only to firms in the sample.	Imai (2016)
3.	EBIT	Independent Variable	Earnings before interest and tax	Barroso,& Pérez-Calero. (2011)
4.	INCOV	Independent Variable	Interest coverage ratio measured as earnings before interest and tax divided by interest expenses	Ogbeide (2021)
5.	CAPADQ	Independent Variable	Total capital, measured as equity divided by total assets	Issam et al. (2018)
6	Firm Size	Control Variable	Using the total Assets of the firms	Broz & Ridzak (2017)
7	Firm Age	Control variables	Using incorporation age	Ogbeide & Okpamen (2015)
8	GDPCG	Independent Variable	Inflation-deflated GDP	Manasseh, Asogwa, Agu & Aneke (2014)

Source: Authors' Compilation, 2021

4. EMPIRICAL ANALYSIS

In this subsection, the analysis of zombie firms is carried out on the basis of two criteria, namely, zombie firm on the premise of negative equity and on the basis of constant losses (See appendix 1). Assessment of the result in appendix 1 shows that out of the seventy-five listed non-financial firms sampled in this study, about thirteen (13) firms slid into zombie status between 2012 and 2019 on the basis of consecutive losses. These firms are DAAR Communications Plc; Ekocorp Plc; Ellah Lakes Plc; FTN Cocoa Processor; Morrisson Industries; Multiverse Plc; Nigerian Northern Flour Plc; Omatek Plc; Premier Paints Plc; R.T. Briscoe Plc; Thomas Wyatt Plc; Tourist Company of Nigeria Plc; and UPDC Property Plc, respectively. Also, firms that became zombie using negative equity as a criteria were Omatek Plc; Premier Paints Plc; R.T. Briscoe Plc; Thomas Wyatt Plc; and Tourist Company of Nigeria Plc. Therefore, the size of the zombie sample firms across the population of study stands at 17.3% (i.e, 13/75*100). The record indicates that there is about 17% evidence of zombie firms in the emerging market of Nigeria. The figure is slightly below the proportion of zombie firms reported by Binh et al. (2020) in India with about 26%, Indonesia and South Korea with about 24% and 18%, respectively. The proportion of zombie firms of about 17% as found in this study to be peculiar to firms in the non-financial sector of Nigeria is, however, a bit higher than the

research finding of Barros, Caires and Pereira (2017) which reported about 12.5% zombie firms in the Portuguese non-tradable sectors of construction and services between 2008 and 2015. This study thus contribute to literature in the context of Nigeria, being the first research to the best of our knowledge to report on the proportion of zombie firms in the non-financial sector among countries in the Sub-Saharan Africa region.

Table 2. Pearson Correlation Matrix

	ZOMBIE	CAPADQ	EBIT	INCOV	FSIZE	FMAGE
ZOMBIE	1					
CAPADQ	0.146202 1.346430 (0.1818)	1				
EBIT	0.716603* 9.360204 (0.0000)	0.043960	1			
INCOV	0.045062 0.410949 (0.6822)	0.183684	0.142045	1		
FSIZE	-0.283474* -2.693041 (0.0086)	0.271720	0.024428	0.197936	1	
FMAGE	0.026165 0.238460 (0.8121)	-0.494690	-0.044002	-0.263157	-0.409258	1

Source: Authors' Computation from STATA 16 Version

Table 2 depicts the correlation between determinants of zombie firms and zombie firm status in Nigeria. The result indicates absence of multi-collinearity between zombie firm status and the explanatory variables and the control variable also. The correlation between zombie and capital adequacy is weak and positive ($r=0.146$), with a t-statistics and probability of 1.346430 and 0.1818 respectively, which is not statistically significant. This weak and positive relationship suggests that adequacy of capital really has no connection with the possibility of the firms sliding into zombie status, all things being equal. The relationship between zombie firm and both earnings before interests and tax (EBIT) and interest coverage (INCOV) ratio is positive ($r=0.717$; $r=0.045$). However, EBIT has a significant relationship with zombie firm at 1% level of significance while INCOV is not significant (Prob.= 0000; 0.6822). This reveals that EBIT plays a key role in determining zombie status. Firm size (FSIZE) has a weak and negative correlation with zombie firm ($r=-0.283$), and this correlation is at a 1% significance level (Prob.= 0.0086). Firm age has a weak and positive association with zombie firms ($r=0.026$), which is not statistically significant as the probability is 0.8121. On the overall, the analysis portrays that earnings before interest and tax affects the ability of the firm to meet up with interests charges, depicted as interest coverage ratio (INCOV). That is, the nexus between EBIT and INCOV is positive, portending that a firm which makes little earnings before interest and tax may suffer the inability to undertake interest charges payment obligations to creditors as at when due and vice versa. Consequently, this may lead such firms to be tagged as dead walking corpse (i.e., zombie status firm). The findings are in tandem with the research outcome of Hoshi (2006); and Papworth (2013); Adalet-McGowan et al. (2017a); OECD (2017). The association between firm age and zombie status firm is positive ($r=0.029$). It is a pointer that firm age contribute adversely to the evolvement of zombie firms in the emerging market of Nigeria. In a nutshell, the analysis shows that capital adequacy, earnings before interest charges,

interest coverage ratio, firm size, and firm age are directly and indirectly drivers of zombie phenomena in the emerging market of Nigeria.

Table 3. Regression Output

	(1)
Zombie (-1)	0.32*** [0.00]
Capadq	-132*** [0.00]
Ebit	1.08*** [0.00]
Incov	-924*** [0.00]
Fmage	105** [0.80]
FSIZE	582* [0.00]
Observations	65
Instrument rank	12
J-Statistics	6.124
Probability	[0.05]

Source: Authors' Computation from STATA 16 Version.

Table 3 describes the variables in the model. Probability values are in parenthesis at different significance level with ** $p < 0.1$ and *** $p < 0.01$. The result of the panel generalised method of moment (GMM) in table 3 indicates that the coefficient of the lag value of zombie firm (0.326) is positive and statistically significant at 95% level. It suggests that a period lag of consecutive inability to pay interest charges and losses drives the occurrence of zombie phenomena in Nigeria. The research finding is in tandem with Mohrman and Stuerke (2014); Blažková and Dvouletý (2018); Binh, et al. (2020). The coefficient of capital adequacy is negative (-132) and is statistically significant at 95% level. It suggests that capital adequacy has the propensity to contribute to the possibility of firms sliding into zombie status as the increase in capital adequacy over time will cause the tendency of a firm sliding into zombie status to be reduced by approximately 13248.62. The finding agrees with the research outcome of Adalet-McGowan, Andrews and Millot (2017a); Imai (2016); and Urionabarrenetxea et al. (2018) but disagrees with Blažková and Dvouletý (2020). The coefficient of interest coverage ratio is negative (-924) and is statistically significant at 95% level. The finding agrees with the study by Banerjee and Hofmann (2018). Earnings before interest and tax is positive (1.087) and is statistically significant at 95% level. The finding confirms the result of Blažková, and Dvouletý (2020) in Czech Republic between 2003 and 2015. The coefficients of firm size and firm age were positive (582) and 105) respectively. While firm size was significant at 95% level, firm age was not statistically significant. The finding aligns with research output of Adalet-McGowan, Andrews, and Millot (2017a) where it was reported that firms with huge assets and within the ages of 5 or more years of age were susceptible to zombie phenomena. However, the author emphasized that the criterion of age is still essential in distinguishing zombie companies from non- zombie companies, seeing that it was positive.

By inference, a firm may be capitally adequate and yet is not able to meet up with payment of interest charges obligations or regularly sustain losses perhaps due to managerial inefficiency, macro-economic instability, and occurrence of systematic risk, such as the outbreak of COVID-19. Earnings before interest and tax (EBIT) are not always constant from year to year in a firm. The fluctuation in EBIT in a firm is often adduced primarily to the economic situation in a country. For example, during the coronavirus (COVID – 19) pandemic outbreak in the year 2020, a lot of firms irrespective of the sectors they belonged to, experienced major fluctuations in earnings before interest and tax. In recognition of the harsh effect of the pandemic effect, most firms that took loan facility to finance operation were allowed to suspend interest payment based on the directive of the Apex bank – the Central Bank of Nigeria (Ogbeide, 2021).

Table 4. Regression Output

	(1)
Gdpcg(-1)	0.62*** [0.00]
Zombie	-3.47** [0.90]
Capadq	0.05*** [0.01]
Ebit	3.66** [0.56]
Incov	0.03** [0.12]
FSIZE	324* [0.03]
Observations	65
Instrument rank	12
J-Statistics	10.59
Probability	[0.05]

Source: Authors' Computation from STATA 16 Version

Table 4 presents the variables of the second model. Probability values are in parenthesis at different significance level with ** $p < 0.1$ and *** $p < 0.01$. The result of the panel time series in table 4 indicates that one period lag of gross domestic product capita growth is positive and significant at 95% level. The J-statistic of 10.596 is significant at 95% level. The implication of the analysis is that zombie firms and the determinants viz-a-viz capital adequacy, earnings before interest and tax, interest coverage ratio are yet to collectively constitute significant effect on the economy of Nigeria in the reference period. The coefficient value of zombie firm (-3.470) is negative and not significant on the economy of Nigeria. The non-significance of zombie firms on the economy of Nigeria is not unconnected with the fewer number of firms ascertained to experience zombie phenomena in the reference period. The coefficient value of capital adequacy (0.051), earnings before interest and tax (3.660), as well as interest coverage ratio (0.033) all exerted a positive impact on the economy and were non-significant in the reference period except for capital adequacy, which was significant at 95% level. By inference, the implication is that zombie firms and the determinants of zombie phenomena lead to an adverse effect on the economy of Nigeria, although this effect is not significant. Zombie firms and the determinants could adversely affect financial intermediation and, by implication, economic performance in a country in several ways. For example, financial intermediation

could be affected if there is a likely occurrence of credit risk, with regard to default in interest charges and loan repayment (Ogbeide, 2021). Default in interest charges and loan repayment perhaps due to liquidity and profitability crises, all things being equal, often affects the flow of funds from the surplus unit to the deficit units, thus hampering quick access to capital to undertake investment activities, production of goods, rendering of services, and consequently stunts economic growth.

More so, where banks engage in financing firms in zombie status, it could encourage misallocation of credit, which may have a concomitant effect in the financial sector and the larger economy. The finding is in tandem with Ahearne and Shinada (2005). Moreover, firms with evidence-based zombie status may have spiral effects on an economy they are unable to make profits, pay interest charges and experience negative equity will naturally have difficulties in satisfying the need of various stakeholders such as the government. In a situation where a firm makes consecutive losses, it will not be able to pay the company income tax to the government. Thus, the negative profitability of firms in zombie status could adversely affect the revenue to the government, and by implication impacts negatively on economic activities and performance in a country. The research finding is in consonance with that of Issam et al. (2018), where they emphasized that nations with a huge chunk of stocks of zombie firms are likely to experience significant drop in economic growth and investment dynamics than they would have experienced in the absence of sizeable shares of zombie firms. The finding aligns with Papworth (2013) where the author noted that interest rate and capital adequacy influence zombie phenomena with adverse effect on an economy.

5. CONCLUSION AND RECOMMENDATIONS

This study has investigated the evidence and determinants of zombie firms and the implications on the economy of Nigeria. The findings of the study evidenced existence of thirteen (13) zombie firms from the seventy-five (75) sampled firms from the non-financial sector of Nigeria. The study found capital adequacy, interest coverage ratio, earnings before interest and tax, firm size, and firm age as key drivers of zombie phenomena in the emerging market of Nigeria in the reference period. These drivers of zombie phenomena were also found to contribute adversely to the economy of Nigeria, although the impact was not significant. The study concludes that the infiltration/prevalence of zombie firms causes a dragging effect on the economy of Nigeria. Stemming from the research findings, the study puts up the following recommendations/suggestions:

1. The regulatory authority should evolve a framework with which firms in zombie status can be monitored and managed in order to safeguard the interest of shareholders, other stakeholders, and the general economy.
2. Firms whose performances are akin to zombie firms' status are encouraged to embrace mergers and acquisition schemes in order to avoid loss of shareholders wealth and dragging effect on the economy.
3. Board of directors and managers of companies should regularly engage in a systematic expense management, undertake a critical analysis of capital structure needs to avoid the consequences of high leverage, viz-a-viz huge interest payment, excess of debts over equity, liquidity and profitability crisis capable of snowballing the business into a zombie status.
4. Future researchers are encouraged to examine and report evidence of zombie phenomena across firms in other sectors in the emerging market of Nigeria and other countries in the Sub-Saharan Africa region.

5. This study also tasks future researchers to employ other quantitative and qualitative drivers of zombie firms and the economy with a view to deepening the research on zombie phenomena in the global intellectual space.

ACKNOWLEDGEMENT

We express our profound gratitude to our families for the time allowed us in the course of undertaking this research. We also thank the several authors whose articles were instrumental in assisting us gain adequate insights into the subject matter. Our sincere appreciation goes to our colleagues in the institutions whose criticisms and suggestions led to the excellent outcome of this study.

REFERENCES

- Adalet-McGowan, M., & Andrews, D. (2016). Insolvency regimes and productivity growth: A framework for analysis. *OECD Economics Department Working Papers*, No. 1309.
- Adalet-McGowan, M., & Andrews, D. (2017). Design of Insolvency regimes across countries. *OECD Economics Department Working Papers*.
- Adalet-McGowan, M., Andrews, D., & Millot, V. (2017a). The walking dead: Zombie firms and productivity performance of OECD countries. *OECD Economics Working Papers*.
- Adalet-McGowan, M., Andrews, D., & Millot (2017b). Insolvency regimes, Zombie firms and capital reallocation. *OECD Economics Department Working Papers*, No. 1399.
- Ahearne, A. G., & Shinada, N. (2005). Zombie firms and economic stagnation in Japan. *International Economics and Economic Policy*, 2(4), 363-381.
- Andrew, D., & Petroulakis, F. (2019). Breaking the shackles: zombie firms, weak banks and depressed restructuring in Europe. *OECD working papers* 75775.
- Andrews, D., Criscuolo, C., & Gal, P. (2016). The global productivity slowdown, technology divergence and public policy: A firm level perspective. *OECD Productivity Working Papers*, No. 5.
- Banerjee, R., & Hofmann, B. (2018). The rise of zombie firms: causes and consequences. *BIS Quarterly Review*, 67-68.
- Barros, G.O., Caires, F.B., & Pereira, D.X. (2017). Zombie companies in Portugal- the non-tradable sectors of construction and services. *GEE Papers*, 88, 1-19.
- Bingh, T.Q., Uyen, P.T.M., & Thuan, N.T. (2020). Zombie companies in Vietnam: the empirical insights and experiences from Asian and European companies. *Academy of Accounting and Financial Studies Journal*, 24(1), 1-9.
- Blažková, I., & Dvouletý, O. (2018). The causes of firm performance variation in the Czech food processing industry in the context of the outlier effect. *Management Research Review*, 41(8), 968-986.
- Blažková, I., & Dvouletý, O. (2019). Investigating the differences in entrepreneurial success through the firm-specific factors: Microeconomic evidence from the Czech food industry. *Journal of Entrepreneurship in Emerging Economies*, 11(2), 154-176.
- Blažková, I., & Dvouletý, O. (2020). Zombies: Who are they and how do firms become zombies? *Journal of Small Business Management*, 1-27.
- Bloom, N., Mahajan, A., McKenzie, D., and Roberts, J. (2010). Why do firms in developing countries have low productivity? *American Economic Review*, 100(2), 619-623.
- Broz, T., & Ridzak, T. (2017). Lending activity and credit supply in Croatia during the crisis. *Journal of Policy Modeling*, 39(6), 1102-1116.
- Caballero, R. J., & Hammour, M. L. (2000). Creative destruction and development: Institutions, crises, and restructuring. *Annual World Bank Conference on Development Economics*, 213-241

- Caballero, R., Hoshi, T., & Kashyap, A.K. (2008). Zombie lending and depressed restructuring in Japan. *American Economic Review*, 98(5), 1943-1977.
- Camacho-Miñano, M. M., Segovia-Vargas, M. J., & Pascual-Ezama, D. (2015). Which characteristics predict the survival of insolvent firms? An SME reorganization prediction model. *Journal of Small Business Management*, 53(2), 340-354.
- Decker, R., Haltiwanger, J., Jarmin, R., & Miranda, J. (2016). Changing business dynamism: volatility of shocks vs. responsiveness to shocks. Mimeo.
- Dvoutely, O. (2019). Development of entrepreneurial activity in the Czech Republic over the years 2005–2017. *Journal of Open Innovation: Technology, Market, and Complexity*, 5(3), 38.
- Goto, Y., & Wilbur, S. (2019). Unfinished business: Zombie firms among SME in Japan's lost decades. *Japan & the World Economy*, 49, 105–112.
- Hoshi, T. (2006). Economics of the living dead. *The Japanese Economic Review*, 57(1), 30-49
- Ibadin, P. O. & Oladipupo, A. O. (2015). Indirect taxes and economic growth in Nigeria. *EKON. MISAO I PRAKSA DBK. GOD XXIV(2)*, 345-364.
- Imai, K. (2016). A panel study of zombie SMEs in Japan: Identification, borrowing and investment behavior. *Journal of the Japanese and International Economies*, 39, 91-107.
- Issam, H., Peter, H., & Sebastian, S. (2018). Fear the walking dead? Incidence and effects of zombie firms in Europe. European mission technical report, Italy.
- Kane, E. J. (1980). Dangers of capital forbearance: The case of the FSLIC and “Zombie” S&Ls. *Contemporary Economic Policy*, 5(1), 77–83.
- Luo, Q., Li, H., & Zhang, B. (2015). Financing constraints and the cost of equity: Evidence on the moral hazard of the controlling shareholder. *International Review of Economics and Finance*, 36, 99-106.
- Manasseh, C.O., Asogwa, F.O., Agu, D.O., & Aneke, G.C. (2014). Economic Growth in Nigeria: Evidence from the Appraisal of Financial Sector Reforms and its Causal Effects. *IOSR Journal of Humanities and Social Science (IOSR-JHSS)*, 19(5), 01-10.
- Mohrman, M. B., & Stuerke, P. S. (2014). Shareowners' equity at Campbell Soup: How can equity be negative? *Accounting Education*, 23(4), 386–405.
- Muñoz-Izquierdo, N., Segovia-Vargas, M. J., & Pascual-Ezama, D. (2018). Explaining the causes of business failure using audit report disclosures. *Journal of Business Research*, 3(2), 11-24.
- OECD (2017). Zombie firms and economic adverse effects. *OECD Working Paper*, 7.
- Ogbeide, S. O., & Okpamen, P. (2015). Corporate borrowing and firms' growth in Nigeria: Empirical Evidence. *Journal of Business & Value Creation*, 4 (1), 80-97.
- Ogbeide, S.O. (2021). *Basic financial management*. Benin City: GIEGIE Nigeria Innovations.
- Onaran, Y. (2011). *Zombie banks: How broken banks and debtor nations are crippling the global economy*. New York: Bloomberg Press, Kindle Edition.
- Papworth, T. (2013). *The trading dead: The zombie firms plaguing Britain's economy, and what to do about them*. England: Adam Smith research trust.
- Peek, J., & Rosengren, E. S. (2005). Unnatural selection: Perverse incentives and the misallocation of credit in Japan. *American Economic Review*, 95(4), 1144-116.
- Qu, Q. (2019). Zombie firms and political influence on bank lending in China. Department of Economics, Columbia University.
- Retolaza, J. L., San-Jose, L., Urionabarrenetxea, S., & Garcia-Merino, D. (2016). Linking the moral hazard and leverage in companies. *Journal of Applied Ethics*, 7, 143-166.
- Saitone, T. L., & Sexton, R. J. (2017). Agri-food supply chain: Evolution and performance with conflicting consumer and societal demands. *European Review of Agricultural Economics*, 44(4), 634–657

- Sekine, T., Kobayashi, K., & Saita, Y. (2003). Forbearance lending: The case of Japanese firms. *Monetary and Economic Studies*, 21(2), 69–92.
- Urionabarrenetxea, S., Garcia-Merino, J. D., San-Jose, L., & Retolaza, J. L. (2017). Living with zombie companies: Do we know where the threat lies? *European Management Journal*, 36(3), 408–420.
- Urionabarrenetxea, S., Garcia-Merino, J.D., San-Jose, L., & Retolaza, J.L. (2018). Living with zombie companies: Do we know where the threat lies? *European Management Journal*, 36, 408-420.
- Urionabarrenetxea, S., San-Jose, L., & Retolaza, J. L. (2016). Negative equity companies in Europe: Theory and evidence. *Business: Theory and Practice*, 17, 307.
- Zouaghi, F., Sánchez-García, M., & Hirsch, S. (2017). What drives firm profitability? A multilevel approach to the Spanish agri-food sector. *Spanish Journal of Agricultural Research*, 15(3), 1-15.

Appendix 1
Descriptive Reporting of Zombie Firms in the Non-Financial Sector of Nigeria

Fiscal Year	Companies	Zombie by Consecutive Loss	Zombie by Negative Equity
2012	Daar communications	0	0
2013	Daar communications	1	0
2014	Daar communications	0	0
2015	Daar communications	1	0
2016	Daar communications	1	0
2017	Daar communications	1	0
2018	Daar communications	1	0
2019	Daar communications	1	0
2012	Ekocorp	0	0
2013	Ekocorp	0	0
2014	Ekocorp	0	0
2015	Ekocorp	0	0
2016	Ekocorp	0	0
2017	Ekocorp	1	0
2018	Ekocorp	1	0
2019	Ekocorp	1	0
2012	Ellah Lakes	1	0
2013	Ellah Lakes	1	0
2014	Ellah Lakes	1	0
2015	Ellah Lakes	1	0
2016	Ellah Lakes	1	0
2017	Ellah Lakes	1	0
2018	Ellah Lakes	1	0
2019	Ellah Lakes	1	0
2012	Ftn Cocoa Processors	1	0
2013	Ftn Cocoa Processors	1	0
2014	Ftn Cocoa Processors	1	0
2015	Ftn Cocoa Processors	1	0
2016	Ftn Cocoa Processors	1	0

Fiscal Year	Companies	Zombie by Consecutive Loss	Zombie by Negative Equity
2017	Ftn Cocoa Processors	1	0
2018	Ftn Cocoa Processors	1	0
2019	Ftn Cocoa Processors	1	1
2012	Morison Industries	0	0
2013	Morison Industries	1	0
2014	Morison Industries	1	0
2015	Morison Industries	1	0
2016	Morison Industries	1	0
2017	Morison Industries	1	1
2018	Morison Industries	1	0
2019	Morison Industries	1	0
2012	OMATEK	0	0
2013	OMATEK	0	0
2014	OMATEK	0	0
2015	OMATEK	0	0
2016	OMATEK	0	0
2017	OMATEK	1	0
2018	OMATEK	1	0
2019	OMATEK	1	0
2012	Multiverse	0	0
2013	Multiverse	1	0
2014	Multiverse	1	0
2015	Multiverse	1	0
2016	Multiverse	1	0
2017	Multiverse	1	0
2018	Multiverse	1	0
2019	Multiverse	1	0
2012	Nigerian Northen Flour Mill	0	0
2013	Nigerian Northen Flour Mill	0	0
2014	Nigerian Northen Flour Mill	0	0
2015	Nigerian Northen Flour Mill	1	0
2016	Nigerian Northen Flour Mill	1	0
2017	Nigerian Northen Flour Mill	1	0
2018	Nigerian Northen Flour Mill	1	0
2019	Nigerian Northen Flour Mill	1	0
2012	Premier Paints	1	0
2013	Premier Paints	1	1
2014	Premier Paints	0	1
2015	Premier Paints	1	1
2016	Premier Paints	1	1
2017	Premier Paints	1	1
2018	Premier Paints	1	1
2019	Premier Paints	1	1
2012	R.T Briscoe Nig	1	0

Fiscal Year	Companies	Zombie by Consecutive Loss	Zombie by Negative Equity
2013	R.T Briscoe Nig	0	0
2014	R.T Briscoe Nig	1	0
2015	R.T Briscoe Nig	1	1
2016	R.T Briscoe Nig	1	1
2017	R.T Briscoe Nig	1	1
2018	R.T Briscoe Nig	1	1
2019	R.T Briscoe Nig	1	1
2012	Thomas Wyatt	1	0
2013	Thomas Wyatt	0	1
2014	Thomas Wyatt	1	1
2015	Thomas Wyatt	1	1
2016	Thomas Wyatt	1	1
2017	Thomas Wyatt	1	1
2018	Thomas Wyatt	1	1
2019	Thomas Wyatt	1	1
2012	Tourist Company Of Nigeria	1	0
2013	Tourist Company Of Nigeria	1	0
2014	Tourist Company Of Nigeria	1	0
2015	Tourist Company Of Nigeria	1	1
2016	Tourist Company Of Nigeria	1	1
2017	Tourist Company Of Nigeria	1	1
2018	Tourist Company Of Nigeria	1	0
2019	Tourist Company Of Nigeria	1	0
2012	UPDC Property	0	0
2013	UPDC Property	0	0
2014	UPDC Property	0	0
2015	UPDC Property	1	0
2016	UPDC Property	1	0
2017	UPDC Property	1	0
2018	UPDC Property	1	0
2019	UPDC Property	1	0

Source: Authors' Content Analysis from the Annual Financial Statements of the Firms