CASH FLOW AND PROFIT IMPACT ON CAPITAL ACCOUNT LIBERALIZATION-INVESTMENT GROWTH NEXUS IN NIGERIA: AN AGGREGATED FIRM CASE

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Abstract. The article examines the firm's investment growth effect following capital liberalization and financial constraints. It employs firm-level aggregated data of 80 firms for the period of 2006 to 2016. Employing the differenced dynamic panel regression technique, the analysis has revealed among others that investment growth appears to be significantly determined by cash flow (internal), thereby indicating the presence of profound financial constraint among firms in all industries. Second, the capital account liberalization appears to drive investment more through the indirect channel (capital/credit availability channel proxied by cash flow). Third, capital account liberalization-investment growth nexus appears to be less sensitive and significant with high profitability. This could be attributed to "profit flight" or repatriation of profit by foreign investors who may not necessarily prefer ploughing back of profit, which has implication for further expansion of investment among firms. This suggests that the level of capital openness is still low; hence, there is a need for further liberalization of the capital account with some mandate of profit ploughing back.

Keywords*: Capital Account Liberalization (capital movement), Cashflows, Firms, Investment, Profit.*

JEL Classification: P49, F21, H32, P45

INTRODUCTION

Capital Account Liberalization (CAL) is a policy that allows capital to move freely across borders without any form of restriction. It is a situation that encourages market forces to determine the movement of capital from one country to another with little or no form of government intervention. From the firm-level perspective, CAL is simply the opening of the domestic stock market to foreigners, as well as eliminating restrictions that have prevented the ease for local investors to invest abroad. This situation may encourage re-shuffling of capital to capital-poor nations where returns to capital are expected to be very high and where there is the potential to utilize the capital optimally from the capital-rich economies, which have low expected returns. Thus, domestic savings and investment may not be correlated as postulated by Feldstein & Horioka (1980). This therefore suggests the need for capital openness in capital-deficit nations, such as Nigeria. Some advocates of liberalization have enumerated some benefits that are accrued from liberalization to

include: bridging of the savings-investment gap, reduction of the level of financial constraints of some firms, increasing the volume of capital inflows, allowing economic agents to smoothen out their consumption, boosting domestic investment augmentation, as well as foreign direct and portfolio investments (Stiglitz, 1994; Obstfeld, 1998; Stulz, 1999; Mishkin, 2001; Gemech, 2003; Obadan, 2006; Bankole, 2007). In the same light, opposers of openness have also enumerated some possible hills that can emanate from liberalization: an increase in market fragmentation, declining welfare due to placement of capital in unproductive sectors, macroeconomic instability and problems of monetary policy management (Borensztein, Gregorio & Lee, 1998). In spite of the above likely flaws, Nigeria has continued to embark on massive capital liberalization and reforms.

In spite of the capital openness reforms and the significant inflows of capital into the Nigeria economy since the inception of Structural Adjustment Programme (SAP) and Nigerian Investment and Promotion Commission (NIPC), the growth rate of investment in the country both at the industry or aggregate and individual firm-level has remained low (Central Bank of Nigeria (CBN) bulletin, 2005; 2015; Firms Annual Reports from 2006 to 2016; Security and Exchange Commission (SEC) Annual Fact Books from 2006 to 2016). This seems not to support the neoclassical theory, which predicts that financial opening will enhance inflows of capital which will help to ease financial constraints and then translate to boosting of investment and economic growth in the long run. This aberration has prompted several researches in this regard; however, results of most studies on the impact of CAL on investment growth in extant literature have appeared to be weak due to the following reasons: first, most of such studies are macro-based with scanty focus from the micro-perspective even though investment happens to be related to a firm, which is a micro component of the nation. Also, most of such studies are cross-country based which lumped samples of developing and developed economies with difference capital openness regimes together. They also make use of aggregated data, and generalization is made from such results which may not be applicable in some of the developing countries in the sample. Second, some of the studies in this area of discourse have focussed on the direct link, thereby ignoring the indirect link or some transmission mechanisms like cash flows, profit, and others through which CAL can pass to enhance investment in the economies (Morisset, 1993; Mody & Murshid, 2005; Alfaro et al., 2006; Adegbite & Adetiloye, 2013, Bankole & Ayinde, 2014; and Saki et al., 2016). Third, most of such works concentrate more on permanent growth effect of CAL with no recourse to temporal growth effect which theoretical literature tends to give credence to (Henry, 2000). Fourth, the issue of how CAL is measured has also inhibited most of the earlier studies and their outcomes. Some authors tend to treat all firms or the nations as homogenous, thereby employing the use of dummy variable or date of openness to capture CAL due to poor knowledge of the concept of CAL. Such studies ignore the possibility that some firms may not benefit from the capital openness and the fact that there is heterogeneity among individual firms (Eichengreen, 2001).

As a result of the aforementioned shortcomings in previous studies, no consensus has been reached, and the suggestion by recent economists has encouraged a shift from the macro to micro (firm-level) analyses in this discourse

with the intension to providing a more acceptable result. There is also the assertion that investment decisions and choice issues are to be better handled at the micro or firm-level rather than at the macro perspective (Eichengreen, 2001; Henry, 2007; Chang, 2012). This study contributes to this growing literature by examining empirically the direct impact of CAL on investment growth in Nigeria with focus on the aggregated firm-level data and some indirect channels (cash flow and profit) through which CAL-investment relationship can be enhanced further. From the later route, there is a growing literature. However, to the best of my knowledge, there have been scanty or no effort in these directions particularly within the context of Nigeria, the use of firm-based measure as a proxy for CAL, the use of non-financial firm, data as well as examining it from both the direct and indirect channels.

The paper is organised as follows. The literature review is provided in Section 2. Sections 3 and 4 present the theoretical framework / model specification and empirical analysis / discussion, respectively. Section 5 covers the conclusion, summary of findings and recommendations.

1. LITERATURE REVIEW

From the direct angle, there appears to be no consensus in this line of discourse, which examines the investment growth of firms in the face of CAL and financial constraint following the capital/credit channel. While some studies have recorded that capital account liberalization impacts investment (domestic and foreign direct investment (FDI)) both in developed, developing and even emerging countries irrespective of whether it is examined from the macro or firm-level perspectives. (Desai, Foley & James, 2003; Shrestha & Chowdhury, 2005; Asiedu & Gyimah-Brempong, 2008; Deepak, Mody & Murshid, 2001; Sarode, 2012; Galindo, Sciantarelli & Weiss, 2001; Beck & Levine, 2002; Chari & Henry, 2003; Alfaro & Charlton, 2006; Fry, 1980; Fry, 1982). Some studies out of the aforementioned and other few have also stated that this impact may not be hinged on some non-liberalization factors, such as the advancement of the labour force in question, the available infrastructures (Deepak, Mody & Murshid, 2001); and whether the country under study has strong financial institutions, stock market, as well as political institutions (Brafua & Biekpe, 2011; Noy & Vu, 2007; Chinn & Ito, 2008; and Mouna & Mondher, 2014). In the same vein, Akinbola, Alaka, Kowo and Adeyemo (2020) found internalization of business to be a positive and significant booster of firms in the areas of their productivity, asset and capital growth, as well as growth in their market share.

On the contrary, some studies have shown that free movement of capital encourages capital flight, i.e., a situation that does not support investment growth in countries (Lewis, 1992; Bascom, 1994; Montiel & Reinhart, 1999; Asiedu & Lien, 2004; Boamah et al., 2005; Alfaro, Kalemi-Ozcan & Volosovych, 2006; Aizenman & Noy, 2003; Mody & Murshid, 2005; Morisset, 1993; Lee, 2003; Adegbite & Adetiloye, 2013; Bankole & Ayinde, 2014; and Yang et al., 2019). Consequently, Safari (2020) found internationalisation to be positive and significant in boosting SME growth in Kenya. In addition, Nwafor, Odey & Effiong

(2017) found domestic savings to be insensitive to financial liberalization in Nigeria for the period under study. Apart from some flaws of CAL as itemized earlier, Omodero (2019) in her study found that accumulation of external debt which was one of the upshots of liberalization imposed an adverse effect on capital investment in Nigeria. From the mixed outcome angle, private investments appeared to react differently to financial or capital openness in the short run and the long run. For instance, the study of Saki, Boachie, and Nmurana (2016) investigated how financial development impacted private investment in Ghana with the ARDL bounds testing approach for the period of 1970 to 2014. They found that in the long run, financial development through reforms and policies did not drive private investment whereas, in the short run, it might be a key driver. It therefore shows that what matters is beyond financial liberalization but the measure of financial development employed.

Following the inconsistences in the direct empirics and theories, other studies have concluded that the impact of investment / economic growth due to capital openness may stem from the indirect route and not necessarily from direct transmission from CAL to investment growth. They are of the opinion that CAL can go through some indirect channels like cost of equity capital, high stock liquidity, changes in expected future earnings (profitability), access to foreign currency, and strong corporate governance to impact investment of firm. Looking at the capital/credit availability channel, Laeven (2001), one of the pioneer authors in the area of CAL financial constraint and how it impacts investment, noted that investment is largely constrained by cash flow, and that financial liberalization tempers down this constraint, especially for small firms which are more constrained than the larger ones prior to liberalization. Some empirical analyses have supported the fact that non-tradable firms benefit more from capital account opening than tradable firms since firms in the tradable sector can generate external finance through export even in the face of capital restrictions, as such, removal of the restriction may have little or no impact on them (Alessandro, Schindndler & Valenzuela, 2009). Other studies on firms in Ivory Coast, Taiwan, Ghana, Kenya have also arrived at contrary findings (Evans & Jovanovic, 1998; Fafchamps & Oostendorp, 1999; Harrison & McMillian, 2003; Wang, 2003; Harrison, Love & McMillian, 2004; Barimah, 2010). From the profitability channel of CAL and investment efficiency of firms, Lee (2003) tested whether financial opening and foreign capital inflows contributed to investment efficiency by making it more responsive to profitability or sales of Korean firms. His result did not find any strong evidence that financial/capital opening made investment more responsive to profitability or sales for the total firm which included the chaebol and non-chaebol firms, rather he found that the increased rate of foreign ownership made investment more responsive to profitability for only chaebol firms. The results of the study performed by Chari and Henry (2003) showed that a 1 percent increase in expected future earnings (profitability) led to a 2.9 to 4.1 percentage point per-year increase in investment. But he found the firm-specific change in risk-premia to be insignificant in driving firm's investment during or after liberalization.

2. THEORETICAL FRAMEWORK AND MODEL SPECIFICATION

2.1. Theoretical Framework

This study anchors on the modified Tobin's q-model as propounded by Chari and Henry (2003). They proposed following the original Tobin's-q model given as:

$$q_i = \frac{M_i}{Pl_i K_i},\tag{1}$$

where q_i is the ratio of the market value of the capital to the replacement cost of firm capital stock of the market in a closed economy. Equation (1) will change when the economy opens by relaxing the assumption that the domestic firm is financed wholly by domestic equity, that cost of capital, r is the risk-free interest rate in the domestic economy and that firms generate volatile earning stream, $\check{A}_i$, which is expected to grow at the rate, g_i in perpetuity. Following the relaxation of the above stated assumptions, the economy stock market will be opened to the rest of the world, as such the changes in the firm investment will occur through the changes that occur on the fundamentals that determine stock prices such as interest rate, risk premium and the growth rate of earnings. Hence, the on-impact value of the Tobin's q-value of the stock market will be stated as follows:

$$q_i^* = \frac{\bar{A}_i}{K_i[r^* + \theta_i^* - g_i^*]}.\tag{2}$$

From the above equation, following capital account liberalization, the basic firm level investment equation will change to:

$$\Delta \left(\frac{I}{K}\right) = \lambda_i[r - r^*] - \gamma DCOV_i + (g^*_i - g),\tag{3}$$

where $r - r^*$ denotes the aftermath of liberalization, the benchmark risk-free rate for determining the hurdle rate for individual investment project changes from r, the closed economy rate to r^*, *the* world risk-free rate. Note that this term does not have subscript because it is a common shock for all firms when the country adopts liberalization policy. λ_i is the firm-specific scaling factor that has some technical implications for empirical estimation. $DCOV_i$ shows the firm-specific change in investments that occur following liberalization that is inversely related to the change in the equity premium. $DCOV_i = \theta - \theta^*. g^*_i - g$ shows that the firm expected future growth rate of earnings otherwise known as profit is expected to enhance the firm investment growth in the face of capital liberalization. All things being equal, the larger the change in expected earnings, the more liberalization in form of capital inflows cause a massive boost in the firm investment. This study extended the model further by focusing on growth in investment rather than the investment level, and on the outcome of CAL to see how the actual inflows of capital emanating from CAL rather than the policy will influence the firm investment growth. Hence, a replacement of the cost of capital $r - r^*$ *with* $k^* - k$.

2.2. Model Specification and Data Type / Sources

The models of this study follow that of Chari and Henry (2003) where growth of investment and per capita income were taken to be a function of liberalization of capital. It stems also from the ideas of Mody and Murshid (2005), Leaven (2000), Lee (2003), and Barimah (2010), which showed that there was a link between CAL **(**the amount of 5 % and above the foreign institutional ownership of domestic investment to total shares or ownership) and investment growth (growth of firm long-term assets), and that in the face of liberalization of capital, investment growth of firms became more responsive to the fundamental variables.

The functional model looks as follows:

$$INVESTG_1 = f(FSO, X, Z), \tag{4}$$

where $INVESTG_1$ represents investment growth proxied by the growth of firm long-term assets; FSO is the firm-level measure of CAL, the domestic ownership of 5 % and above by foreign institution or the share of foreign institutional ownership of domestic investment to total shares, while X, and Z are the vector of other macroeconomic and firm specific control variables, such as real gross domestic product (RGDP), firm size, firm age, board size, respectively, that influence domestic investment as identified in the literature.

The dynamic panel models is given as follows:
Model (5) is used to examine the direct impact of CAL, cashflows, profitability and other control variables on firm investment growth.

$$Investg_{it} = \beta_0 + \beta_1 \, Investg_{it-1} + \beta_2 SalesK_{it} + \beta_3 Cflowk_{it} + \beta_4 FSO_{it} + \beta_5 PROFk_{it} + \sum_{i=1}^{I} \alpha_I \, Z_{it} + \sum_{j=1}^{J} \emptyset_J \, X_t + \mu_{it\,.} \tag{5}$$

To examine the role of cash flow on CAL-investment growth nexus, Eq. (6), which includes an interacted term of FSO and CFLOWK denoted as $[Cflowk_{it} * FSO_{it}]$, was specified. If the interactive term coefficient is positive or declines marginally and becomes more significant, it indicates that capital liberalization helps reduce the level of financial constraints of the firm type.

$$Investg_{it} = \beta_0 + \beta_1 \, Investg_{it-1} + \beta_2 SalesK_{it} + \beta_3 Cflowk_{it} + \beta_4 FSO_{it} + \beta_5 [Cflowk_{it} * FSO_{it}] + \sum_{i=1}^{I} \alpha_I \, Z_{it} + \sum_{j=1}^{J} \emptyset_J \, X_t + \mu_{it\,.} \tag{6}$$

Model (7) was used to evaluate the impact of profitability on CAL-investment growth nexus. An interaction term of the firm level measure of CAL, foreign share ownership (FSO) and profitability ($PROFk_{it}$), which is denoted as $[PROFk_{it} * FSO_{it}]$ and its coefficient captured by α_5 was employed. If the interactive term becomes positive, significant and larger in magnitude compared to the value of profitability coefficient prior to the interaction, we can conclude that profitability makes firm investment to be more responsive to liberalization. It can be concluded that the CAL impacts firm investment growth through an indirect channel.

$$Investg_{it} = \alpha_0 + \alpha_1\, Investg_{it-1} + \alpha_2 SalesK_{it} + \alpha_3 PROF_{it} + \alpha_4\, FSO_{it}$$

$$+ \alpha_5[PROFk_{it} * FSO_{it}] + \sum_{i=1}^{I} \Omega_I\, Z_{it} + \sum_{j=1}^{J} \emptyset_J\, X_t + \mu_{it}. \qquad (7)$$

Note that Z_{it} represent a vector of all the firm-specific control variables that are likely to influence the firm investment growth apart from the key independent and fundamental variables. They include: **Fsize** – the firm size; **Fage** – firm age; and **BSize** – board size. While X_t is a vector of the macroeconomic related control variable that can influence firm investment growth such as real GDP growth proxy for economic growth.

This paper employed a firm-based panel data for the periods of 2006 to 2016 (11 years) for 80 non-financial listed firms in the Nigerian Stock Exchange Market as drawn from the following sectors: agriculture, industrial, oil and gas, consumer, conglomerate, construction and real, services, healthcare, resources, and ICT sectors. The choice of the number of firms was based on the availability of data and sampling. The firm-level data were extracted from the annual reports of the firms, Security and Exchange Commission's (SEC) Annual Book of Facts for various years. The control variable data were obtained from the World Bank's World Development Indicators, various volumes of the Central Bank of Nigeria's Statistical Bulletin and National Bureau of Statistics' publications. The dynamic panel data (DPD) model based on the differenced Generalized Methods of Moment (GMM) with instrumental variable (IV) regression as advanced by Arellano and Bond (1991) was employed for the analyses. The DPD technique with its ability to correct endogeneity problems include the lagged dependent variable as one of the explanatory variables and its ability to analyse a panel with short time series, T and large cross-section, N (micro-panel) seems to be more appropriate for study of this nature. This technique was employed after all preliminary tests such as the descriptive statistics, correlation coefficient and panel unit root tests were conducted.

3. EMPIRICAL ANALYSIS

Regression Results on Investment Growth

The dynamic panel data regression results for the firms under study following the one-step and two-step robust and corrected approaches are presented in Table 1.

Table 1 shows the results of all the models for the total firms (the tradable and non-tradable put together) used as a sample for this analysis, which is also the baseline result.

Table 1. Dynamic Panel Regression Result for the Sampled (Aggregated) Firms with DEPENDENT VARIABLE as Investment Growth (INVESTG$_1$)

Variables	Model 6		Model 7		Model 8	
	One-step	Two-step	One-step	Two-step	One-step	Two-step
Investg1$_{it}$-1	–0.4175* [0.000]	–0.4167* [0.00]	–0.4305* [0.00]	–0.4290* [0.00]	–0.4277** [0.00]	–0.4256* [0.00]
Fso	1.167 [0.672]	1.888 [0.746]	1.029 [0.714]	1.780 [0.657]	1.320 [0.623]	2.046 [0.691]
Cflowk	4.670** [0.016]	3.964*** [0.058]			3.803** [0.039]	3.173*** [0.09]
Salesk	–326.28** [0.021]	–344.36** [0.023]	–330.02* [0.008]	–362.4* [0.007]	–318.9* [0.012]	–344.09* [0.01]
Profk	7.091 [0.203]	5.675 [0.401]				
Rgdp	–2072.0** [0.047]	–1760.3** [0.038]	–2213.4** [0.034]	–2057.1** [0.044]	–2193.6** [0.026]	–1838.7** [0.027]
Fsize	451.47** [0.020]	313.04*** [0.10]	435.07* [0.014]	356.2*** [0.07]	458.39** [0.014]	338.6*** [0.091]
Bsize	–217.50 [0.163]	–221.48 [0.198]	–203.18 [0.176]	–179.0 [0.237]	–214.31 [0.169]	–200.6 [0.200]
Cflowk_fso			0.0499** [0.02]	0.0483*** [0.046]		
Profk_fso					0.0255 [0.840]	–0.0057 [0.967]
AR(1)	–2.16 [0.030]	–2.06 [0.039]	–2.11 [0.035]	–2.07 [0.038]	–2.14 [0.032]	–2.10 [0.036]
AR(2)	–1.13 [0.258]	–1.52 [0.127]	–1.18 [0.237]	–1.45 [0.147]	–1.17 [0.243]	–1.48 [0.139]
Sargan-Hasen	36.48 [0.672]	36.48 [0.672]	38.73 [0.616]	38.73 [0.616]	36.22 [0.683]	36.22 [0.683]
Difference-in-Hansen tests	36.46 [0.586]	36.46 [0.586]	37.43 [0.586]	37.43 [0.586]	36.05 [0.605]	36.05 [0.605]
Exogeneity Test	0.02 [0.990]	0.02 [0.990]	1.29 [0.524]	1.29 [0.524]	0.17 [0.918]	0.17 [0.918]
F-TEST (4)	4.93* [0.000]	4.36* [0.000]	8.01* [0.000]	7.28* [0.000]	10.70* [0.000]	9.59* [0.000]
No. of Instruments	49	49	49	49	49	49
No. of Observations	489	489	489	489	489	489

Note: (1) bracket [ ] is *p*-values (2) *** implies statistical significance at 10 %, (3) ** implies statistical significance at 5 %, (4) * implies significance at 1 %.
Source: The author's computation from Stata 13 output.

The outcome from model (6) showed that the coefficients of CAL measure, (fso), cash flows (Cflowk), and profitability variable, (profk) were positively associated and statistically insignificant in driving firm investment growth save for cash flow that was significant at 5 % level of significance. The result also revealed that the higher the operating cash flow of the firms in question, the higher the level of investment growth by 4.670 %. A one unit increase in the number of foreign institution ownership of domestic firm will cause the firm investment growth to increase by 1.167 %. They all met expected signs. The fact that FSO and PROFK are insignificant is against economic theory and this could be blamed due to some internal anomaly with regards to disclosure of the actual profit, high preference for dividend sharing among shareholders rather than ploughing back of profit that

might exist among firms. The coefficient of sales variable (salesk) appeared to be inversely related but statistically significant at 5 % level of significance in driving investment growth. It showed that a one unit rise in sales volume will result in a decline in the investment growth of firms by 326.28 %. This does not conform to economic theory which says that higher sales volume of a firm will attract more investors and, in turn, boost investment growth. The result, therefore, showed that the fundamental variables (Profk) through which CAL would boost investment growth were insignificant in driving investment without interaction.

The speed of adjustment which represented the lagged dependent variable coefficient (investg1it-1) shows an inverse and 1 % level of significance. The relevance of the lagged investment growth confirms the existence of a dynamic adjustment process towards a target level, as well as a delayed response. The inverse relationship between the lagged dependent variable and the dependent variable states that the past period investment leads to a decline in the current level investment even though it appears very vital in driving growth. The model has a well performed goodness of fit because the probability value of the F-Stat indicated a 1 % level of significance. This therefore implies that a linear relationship exists between the dependent variable and all the independent variables in the model. Stemming from the results of the two Arellano and Bond first difference autocorrelation tests (i.e., the first order and second order), which showed that AR (2) P-value given as 0.258 was greater than 0.05. Thus, the model is free of serial correlation problem. The model instruments are also valid as the p-values of the Sargan-Hansen over-identifying restriction validity test result appeared to be greater than 0.05. The difference-in-Hansen test shows that the dynamic model is valid as the null hypothesis which says the model is not strictly exogenous was accepted following the p-value of 0.990 which is greater than 0.05.

Results from model (7) that examined the indirect impact of CAL via the capital / credit channel proxied by cashflow. It was achieved by interacting the firm-level measure of CAL, (FSO) with the cash flow variable, i.e., (cflowk_fso). The coefficient of the interactive term, (cflowk_fso) which was used to measure the rate at which CAL would help reduce firm financial constraint and drive investment growth was positive and highly significant at 5% in this model. It, therefore, implies that CAL through increased foreign share ownership has great implication for reducing the financial constraints and boosts investment growth of firms. Thus, we can see that although CAL does not directly significantly drive investment of firms, it does that indirectly via the cashflow channel. The lagged dependent variable (investg1it-1) happened to be inverse but significant at the 1 % level of significance. The relevance of the lagged investment growth confirms the existence of a dynamic adjustment process towards a target level. The model has a well performed goodness of fit because the probability value of the *F*-Stat indicated a 1 % level of significance. This therefore implies that a linear relationship exists between the dependent variable and all the independent variables in the model. Stemming from the results of the two Arellano and Bond first difference autocorrelation tests (i.e., the first order and second order) which showed that AR(2) *P*-value given as 0.237 was greater than 0.05, the model was free of serial correlation problem. The model instruments are also valid as the p-values of the Sargan-Hansen over-identifying

restriction validity test result appeared to be greater than 0.05, also the difference-in-Hansen test showed that the dynamic model was valid as the null hypothesis stating the model was not strictly exogenous was accepted following the p-value of 0.524 which was greater than 0.05.

In model (8), the result revealed that the coefficient of the interactive term, (profk_fso), which was used to measure the level of responsiveness of investment growth to liberalization in the midst of high profitability, was positively related but statistically insignificant. Thus, comparatively, CAL impact on investment growth after the interaction with profit variable appears to deteriorate when compared to the case prior to when it was interacted. This is because the magnitude of the level of insignificance increased to 0.840 from 0.203 as shown by the p-values. This therefore suggests that the increased level of CAL makes firm investment less responsive to profitability going by the drop in the coefficient from 7.091 % to 0.0255 % after the interaction and the high probability value. It suggests that CAL, in this regard, encourages inflows of capital to substitute rather than compliment domestic investment. The speed of adjustment, which represents the lagged dependent variable coefficient (investg1it-1), showed a negative and a 1 % level of significance. The relevance of the lagged investment growth confirms the existence of a dynamic adjustment process towards a target level. The model has a well performed goodness of fit because the probability value of the F-Stat indicated a 1 % level of significance. This implies that a linear relationship exists between the dependent variable and all the independent variables in the model. Stemming from the results of the two Arellano and Bond first difference autocorrelation tests (i.e., the first order and second order) which showed that AR(2) *P*-value given as 0.243 was greater than 0.05, the model was free of serial correlation problem. The model instruments are also valid as the p-values of the Sargan-Hansen over-identifying restriction validity test result appeared to be greater than 0.05, also the difference-in-Hansen test showed that the dynamic model was valid as the null hypothesis stating that the model was not strictly exogenous was accepted following the p-value of 0.918, which was greater than 0.05.

4. SUMMARY OF FINDINGS AND RECOMMENDATIONS

The results of this study showed a direct relationship between CAL and investment growth and confirmed earlier firm-level studies (Chari & Henry, 2003; Beck and Levine, 2002; Shrestha and Chowdhury, 2005; Alfaro & Charlton, 2006) and some macroeconomic-level studies (Noy & Vu, 2007; Asiedu & Gyimah-Brempong, 2008; Sarode, 2012; Mouna & Mondher, 2015). The results of the present study negate the result of Barimah (2010) which found no evidence for the hypothesis that financial/capital openness could ease or reduce the constraint faced by these firms within the context of Ghana firms.

The regression results revealed first that investment growth appeared to be significantly determined by cash flow (internal), thereby indicating the presence of financial constraint among firms in all industries. The financial constraint among Nigerian firms happened to be very profound, thereby showing the need for further liberalization. Second, the CAL appeared to drive investment more through the

indirect channel (capital/credit availability channel as measured cash flow). Third, CAL-investment growth nexus appeared to be less sensitive and significant with high profitability. This could be attributed to "profit flight" or repatriation of profit by foreign investors who might not necessarily prefer ploughing back of profit which had implication for further expansion of investment among firms. This outcome supports Chari and Henry (2003). The level of capital openness for all firms appears to be very low or not enough to ease off the financial constraint facing firms. Thus, the study recommends that capital openness should be intensified and any form of post-liberalization capital restriction syndrome be discouraged so as to encourage more capital inflows that will help reduce financial constraints from the firms in all industries.

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