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Title of Paper: The Financial Accelerator Mechanism: the Case of Portuguese Small Manufacturing Firms
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Abstract

Recent developments in the field of information economics have led to the establishment of a link between financial factors and fluctuations in economic activity. An issue that has been highlighted is the possibility that fluctuations in economic activity can be induced by fragilities in the financial status of firms. This fact is known as the financial accelerator mechanism. In terms of company investment, the impact of the financial accelerator means that financial variables (such as, balance sheet position and cash flows) affect firms' investment decisions.

The objective of this paper is to analyse the existence of a financial accelerator mechanism in the case of small Portuguese manufacturing firms. In order to do so, an investment function was estimated based on the sales-accelerator principle but integrating variables that reflect the financial status of the firm. Three hypotheses were tested: (1) financial factors are important for all companies; (2) financial factors are more important for companies more affected by information problems in the capital markets; and (3) financial factors are even more important for these companies at times of economic recession.

Keywords: Financial Accelerator; Small Firms; Investment, Liquidity Restrictions.

1 Introduction

The objective of this paper is to analyse the existence of a financial accelerator mechanism in the case of small Portuguese manufacturing firms. In order to do so, an investment function was estimated based on the sales-accelerator principle but integrating variables that reflect the financial status of the firm. The methodology used was that of Fazzari et al (1988) for evaluating the impact of financial factors on firms' investment behaviour.

Underlying the assumption of a financial accelerator mechanism is the hypothesis that there is a strong link between financial factors and investment decisions of firms. In this sense, three hypotheses were tested: (1) financial factors are important for all companies; (2) financial factors are more important for companies more affected by information problems in the capital markets; and (3) financial factors are even more important for these companies at times of economic recession.

This paper is organised as follows. In section 2 there is a brief description of the rationale behind the financial accelerator mechanism. In Section 3 the hypotheses underlying the financial accelerator are tested. Section 4 comprises the conclusions of this study by emphasizing the major policy implications.

2 Financial Accelerator Mechanism

According to the investment models that assume perfect capital markets[1], the availability of internal funds do not affect investment decisions. Investment outlays in each period are determined in perfectly functioning capital markets. Financial factors are only considered in the cost of capital, which, in turn, is independent of the way in which a firm finances itself. This independence derives form the assumption that capital markets are perfect. Thus, firms can obtain all financing that they need to implement investment projects, provided that the expected marginal return exceeds the cost of capital.

In other words, it would not be expected that a company, with a profitable investment opportunity but an investment outlay greater than its available funds, would invest less than a company with the same investment opportunities but with greater cash flow. Any insufficiency will attract finance in capital markets as investors attempt to explore the profit opportunity. This also means that the marginal costs of financing by debt, by external equity capital and by internal funds are the same.

In this context, it could be argued that the availability of adequate cash flows is not a restriction on investment and that the financial characteristics of firms do not affect the cost of capital.

In recent times, however, this approach has been questioned. In fact, recent developments in the field of information economics allowed a rationalisation of the link between financial factors and fluctuations in economic activity. According to Gertler (1988: 560), a common assumption to these developments is that information asymmetries can introduce inefficiencies in financial markets, which can have important real effects.

An issue that has been highlighted is the possibility that fluctuations in economic activity can be induced, not by shocks on production or on productivity, but by fragilities in firms' financial status.

This fact is known as the financial accelerator mechanism. According to Bernanke et al (1996: 2), the justification for the existence of that mechanism is based on the following arguments. Firstly, external finance is more costly than internal finance, due to asymmetric information problems in capital markets. Secondly, given the total amount of finance required, the premium on external finance is inversely related to the net worth of firms. Thirdly, a decline in net worth, increasing both the premium on external finance and the amount of external finance required, reduces the spending and production of firms.

This last result is the fundamental idea behind the concept of the financial accelerator. To the extent that negative shocks on the economy decrease firms' net worth, the effects on production and spending of firms resulting from the initial shock will be amplified.

In terms of investment, the impact of the financial accelerator means that financial variables (such as, balance sheet position and cash flows) affect investment decisions of firms. According to Gertler (1988: 573), these decisions become "excessively sensitive" to cash flows, that is, they are more sensitive than they would be if information problems in capital markets did not exist. In the case of perfect capital markets, cash flow and investment could be positively correlated since changes in the former could signal changes in the potential of future earnings of the firm. With imperfect capital markets there is an additional effect: an increase in cash flows strengthens the balance sheet of the firms and thus reduces its capital costs.

[1] For example, the neoclassical model of Jorgenson (1963) and the Q-model of Tobin (1969).

Therefore, when a company has to decide about its investment outlays, it should consider not only the real aspects of the investment decision[1], but also financial aspects, namely, its liquidity and its balance sheet position.

3 Empirical Study

3.1 Sample and Variables Used

In the present study, a panel data was used to obtain empirical evidence on the existence of a financial accelerator mechanism in the case of small Portuguese manufacturing firms.

According to Hsiao (2003), panel data has the following advantages. Firstly, it leads to an increase in the degrees of freedom and to a reduction in the colinearity between explanatory variables, since the researcher has access to numerous data, and thus leading to an increase in the efficiency of the estimates. Secondly, panel data allows an investigator to construct and test more complex behavioural models, than would be the case if only cross-sectional or time series data were used. Thirdly, the use of panel data permits the minimisation of problems related to the interpretation of the estimated results that may arise from the effects that the omitted variables can have, especially when one suspects that these variables are correlated with explanatory variables.

The sample used in this study, comprised about 8090 firms, for a period between 1990 and 2000. This data came from the Central de Balanços do Banco de Portugal.

Since a balanced panel data was used, firms had to respect several criteria to be included in the sample. Firstly, only private firms, belonging to the manufacturing sector, with at least 25 employees, were considered. Secondly, only companies that presented values for all variables and for every year of the period considered were selected. The application of these criteria led to a final sample of 714 firms.

As far as the variables used were concerned, they were computed from the accounting data of the firms selected, and can be described as follows:

- Investment (I): acquisitions of new structures and equipments.
- Stock of capital (K): represented by fixed assets.
- Sales (S): total sales of the firm.
- Return on assets (RA): profit to total assets ratio;
- Cash flow (CF): given by the sum of profits and depreciation.
- Stock of liquid assets (AL): given by the sum of marketable securities, bank accounts and cash.
- Debt (D): corresponds to the total debt of the firm.

Table 1 shows some descriptive statistics of the variables used.

The most relevant features are the following. Firstly, the mean value of the fixed assets held by firms was € 3 311 994. Secondly, the mean value of the investment in fixed assets was € 699 019. Thirdly, the mean rate of investment in fixed assets was 33%. Fourthly, sales represented, on average, six times the value of fixed assets of the firms considered. Finally, firms obtained a mean return on assets of about 2%.

[1] For example, the output, the relative price of inputs, or technology.

3.2 Hypotheses Testing

This subsection comprises the testing of the hypotheses underlying the financial accelerator mechanism, namely, the relationships between financial factors and (i) investment; (ii) firm size; and (iii) business cycles.

3.2.1 Financial factors and investment

In this section the first hypothesis, set forth in introduction, is tested, i.e., financial factors are important for all companies, when they have to decide about their investment decisions.

To test this hypothesis, two issues have to be taken into account. First, since financial factors are a wide concept, they must be specified. In this study three indicators for financial factors were used: cash flow; stock of liquid assets; and debt.

The second issue is that the way in which the financial factors are considered in an econometric investment equation is a delicate question. This is particularly important in the case of the variable cash flow. In fact, although the estimated coefficient for cash flow may have statistical significance, this does not necessarily imply that firms face problems of financial restrictions. An alternative explanation is that cash flows are a proxy for changes in investment demand[1], and not because there is a wedge cost in funds that a firm can access. Therefore, in order to evaluate the true impact of cash flows (and financial factors in general) it is necessary to control the investment opportunities that a firm faces[2].

In this paper we used the sales-accelerator principle as the best alternative to model the demand side of investment. Additionally, to better control the investment opportunities of firms and given the impossibility of computing the Q-ratio, we also used a profitability variable (return on assets)[3]. Hence, one can be more confident in interpreting the statistical significance of the financial variables as an indication of the influence of financial factors on investment decisions of firms.

From these considerations, three specifications for the econometric investment equation were estimated. The first one is:

$$I_{it}/K_{it-1} = \alpha_i + \alpha_t + \beta_1(S_{it}/K_{it-1}) + \beta_2(RA_{it-1}) + \beta_3(RA_{it}) + \beta_4(CF_{it}/K_{it-1}) + \varepsilon_{it} \qquad (1)$$

where investment of the firm *i* in period *t* in fixed assets (I) is a function of sales (S), return on assets (RA) and cash flow (CF). The variables sales and cash flow are divided by the stock of capital (K) to address the problem of heteroscedasticity. (α_i) is the firm effect, (α_t) the year effect and (ε_{it}) is the error term.

The inclusion of sales derives from the accelerator principle. The variable return on assets, from the previous and the current period, was included in order (i) to reflect all information that entrepreneurs/managers have about the performance of the firm in the

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[1] This possibility comes from the fact that cash flow volatility is highly correlated with sales variation and prospects of future profitability.

[2] In graphical terms this maintains unchanged the investment demand curve. In contrast, the supply curve of funds for investment does not become completely horizontal, like it is assumed in the neoclassical models. It has, now, an increasing element, which depends on the level of internal funds that the firm possesses. A change in the level of internal funds of the firm induces a change in the configuration of the offer curve and, therefore, a change in the investment level of the firm.

[3] The utilisation of this variable as a mean to overcome the problem of not using the Q-ratio was suggested by Deloof (1998).

past and (ii) to integrate in the model the expectations about the gains that will be generated by the investment.

The inclusion of cash flow derives form the spirit of the Fazzari et al (1988) model. According to this model, the statistical significance of cash flow in an econometric investment equation can be interpreted as an indication that firms might face financial restrictions, hence rejecting the null hypothesis of a perfect capital market. The rationale for this is that there is no perfect substitutability between the different sources of funds that a firm can access, namely, internal funds, debt, and external equity. Therefore, the assumption that investment and financial decisions of a firm are independent does not hold, so that the financial structure of a firm is relevant for investment decisions.

The second specification for the econometric investment equation is:

$$I_{it}/K_{it-1} = \alpha_i + \alpha_t + \beta_1(S_{it}/K_{it-1}) + \beta_2(RA_{it-1}) + \beta_3(RA_{it}) + \beta_4(CF_{it}/K_{it-1}) + \beta_5(AL_{it-1}/K_{it-1}) + \varepsilon_{it} \quad (2)$$

The inclusion of the variable stock of liquid assets (AL) is based on the rationale that for firms that accumulate financial slack over time (in the form of cash or marketable securities) this represents a source of finance at low cost in the case that they face information problems in capital markets. Therefore, the firm has no need to raise external funds to finance their investment expenses.

In the third specification of the econometric investment equation, the debt (D) variable was included:

$$I_{it}/K_{it-1} = \alpha_i + \alpha_t + \beta_1(S_{it}/K_{it-1}) + \beta_2(RA_{it-1}) + \beta_3(RA_{it}) + \beta_4(CF_{it}/K_{it-1}) + \beta_5(AL_{it-1}/K_{it-1}) + \beta_6(D_{it-1}/K_{it-1}) + \varepsilon_{it} \quad (3)$$

The objective is to control the effect that leverage might have on investment decisions of firms. A negative relationship between investment and leverage will be expected, since higher levels of leverage imply that a higher portion of operational cash flow will be necessary to service debt.

Table 8.2 shows the regression results for the three specifications of the investment equation, for the full sample.

Estimation results confirm the assumption that financial factors have an effect on investment decisions of firms. Firstly, the estimated coefficient on cash flow (CF) is statistically significant, at a level of one percent, for all specifications of the investment equation. For example, in the case of specification (3), an increase of one euro in cash flow induces an increase in investment expenses of sixteen centimes.

Secondly, the statistical significance of the variable stock of liquid assets (AL) reveals that not only the funds generated through cash flow are important for investment decisions but, also, that the existence of a financial slack in the firm is essential. Yet, the estimated coefficients for both variables indicate that the effect of cash flow is quantitatively more important than the stock of liquid assets.

Finally, there is a negative relationship between leverage and investment. This implies that the greater the firm's leverage the less will be its investment outlays and, hence, more limited will be its growth.

3.2.2 Financial factors and firm size

The second hypothesis tested is that financial factors are more important for firms more affected by information problems in capital markets.

To identify the extent to which a firm is affected by these type of problems, the criterion of size was used.

The size of a firm can be defined in relation to several aspects, namely, total assets, market value, number of employees and sales. In this study, sales were the variable used to identify large and small firms.

The assumption that large firms face fewer information problems in financial markets is based on the following arguments. Firstly, larger firms have an easier access to capital markets, due to the possibility of using the firm's assets as collateral. Secondly, it is likely that transaction and floatation costs for new share or bond issues decrease with dimension of both issues. Thirdly, larger firms can use more different sources of funds than small companies, which allow large firms to reduce the risk of financing. Fourthly, larger firms have, in general, to meet more obligations in terms of financial statements produced and information released about their activities and future prospects. Finally, it is likely that small firms suffer more of the idiosyncratic type of risk.

Table 8.3 shows descriptive statistics for both types of firms, large and small.

By comparing the figures for both types of firms, the following conclusions can be drawn. Firstly, the mean values of fixed assets and of investment in fixed assets are nine and eight times greater for large firms than for small ones, respectively. Clearly, this fact shows how different are the firms included in each group. Secondly, the mean rate of investment in fixed assets is greater for small firms than for large firms (37% vs. 29%, respectively). Thirdly, large firms showed a return on assets (2%) greater than small firms (1.6%). Finally, the proportion of the mean value of sales on the mean value of fixed assets is greater for small firms than for large ones.

Table 8.4 shows the regression results for the three specifications of the investment equation, when the sample was divided by firm size.

Regression results confirm the hypothesis under test. In fact: (a) for all specifications of the econometric investment equation, the estimated coefficient on cash flow is greater for small firms than for large firms; (b) the stock of liquid assets is statistically more important for small firms than for large ones, although the difference in the influence of this variable on investment of both types of firms tend to be lower; and (c) although there is a negative relationship between firm leverage and investment for both types of firms, the impact of firm leverage on investment appear to be greater for small firms.

3.2.3 Financial factors and business cycle

Finally, the third hypothesis is tested, which was stated as follows: financial factors are even more important for small companies at times of economic recession.

To test this hypothesis it is necessary to identify periods of recession. The industrial production index for the Portuguese manufacturing sector was used to this purpose. Table 8.5 shows the evolution of this index for the period 1990 to 2000. As it can be seen, during the nineties the manufacturing sector experienced two phases of the business cycle: an economic downturn during the first half of the nineties and an economic expansion initiated in 1995.

Accordingly, the sample was divided into two sub-samples and the specification (3) of the econometric investment equation was estimated for both large and small firms and for each phase of the business cycle. Estimation results are shown in Table 8.6.

The results are not fully in accord with the predictions of the financial accelerator mechanism. In fact, it would be expected that the difference among the estimated coefficients on the financial variables, for both large and small firms, would be higher

in periods of recession than in periods of economic expansion. But this is not actually the case, especially due to the behaviour of small firms.

In the case of large firms the estimated coefficient on cash flow is lower in expansion than in recession and the variables stock of liquid assets (AL) and debt (D) are not statistically significant for both periods considered (except for AL in the case of recession but the coefficient shows the wrong sign).

As far as small firms are concerned all financial variables are statistically significant for both periods recession and expansion (except for AL in the case of recession). However, the estimated coefficients of financial variables are greater in periods of economic expansion.

As a conclusion, one can say that although financial variables are more important for small firms than for large firms in both phases of the business cycle, the impact of financial variables is more important in economic expansion than in economic downturn for small firms, which seems to contradict the existence of a financial accelerator.

4 Conclusion

Recent research on macroeconomics has concentrated on finding new explanations for fluctuations in the level of economic activity, without making use of the shocks on production/productivity as driving forces.

One such explanation is the role that the financial structure of a firm might have as a propagation mechanism of macroeconomic shocks, which became known as the financial accelerator mechanism.

According to Gilchrist e Himmelberg (1995), the financial accelerator rests on the assumption that imperfections on financial markets amplify and propagate shocks in the economy. In the presence of such a propagation mechanism, a contractionary shock reduces the value of firms´ net worth and collateral, worsening credit conditions to borrowers, which have difficulty in signalizing the actual value of new projects. As credit conditions become worse, investment expenses of firms diminish, exacerbating and prolonging the economic downturn.

The link between firms' financial status and investment allows, also, explaining, according to Fazzari and Petersen (1993), why inventories change significantly during the business cycle[1]. In fact, inventories vary pro-cycling if firms, which face financial restrictions, want to smooth their fixed investment, independently from variation in profits.

The empirical evidence obtained in this study seems to lend some support to the financial accelerator hypothesis. In fact, financial variables are more important for small firms than for large firms, both during an economic expansion or an economic downturn. However, more research is necessary to compare the impact of financial variables on investment of small firms in each phase of the business cycle, since the results were limited in this respect.

In terms of policy implications, three issues can be highlighted. Firstly, there is no independence between firms' investment and finance decisions, especially for small firms. For this type of firms, its financial structure (or the strength of its balance sheet position) is very important when they have to decide about their investment expenses. This led to what Myers (1984) called the "pecking order hypothesis".

[1] In particular, they tend to decline during economic recession.

Secondly, the strong connection between firms' financial status and investment, suggests that in the case of a restrictive monetary policy the real economy will be affected not only through the traditional channel of the cost of capital, but also through two other channels. One is the availability of funds, which means that an increase in interest costs of firms will reduce the availability of relatively cheap internal funds and increase the cost of external funds. The other channel is related to the reduction of present value of collateralizable assets, which generates a decrease in the firm's net worth and an increase in the external financing cost.

Thirdly, it could be argued that tax policy measures such as the reduction in corporate tax rate, measures that disincentive high dividend payouts, accelerated depreciation allowances, and the introduction of an investment tax credit, could induce more investment in fixed capital by firms.

Bibliographic References

Bernanke, B. S.; M. Gertler and S. Gilchrist (1996) 'The Financial Accelerator and the Flight to Quality.' *Review of Economics and Statistics*, 78 (1): 1-15.

Deloof, M. (1998) 'Internal Capital Markets, Bank Borrowing, and Financing Constraints: Evidence from Belgian Firms.' *Journal of Business Finance & Accounting*, 25 (7,8): 945-968.

Fazzari, S.; G. Hubbard and B. Petersen (1988) 'Financing constraints and corporate investment.' *Brooking Papers on Economic Activity*, 1: 141-195.

Fazzari, S. and B. Petersen (1993) 'Working capital and fixed investment: New evidence on financing constraints.' *RAND Journal of Economics*, 24: 328-342.

Gertler, M. (1988) 'Financial Structure and Aggregate Economic Activity: An Overview' *Journal of Money, Credit, Banking*, 20: 559-588.

Gilchrist, S. and C. P. Himmelberg (1995) 'Evidence on the Role of Cash Flow in Reduced-Form Investment Equations' *Journal of Monetary Economics*, 36: 541-572.

Hsiao, C. (2003) *Analysis of Panel Data*, Cambridge University Press, Cambridge, UK.

Myers, S. (1984) 'The capital structure puzzle.' *Journal of Finance*, 34 (3): 575-592.

Jorgenson, D. (1963) 'Capital theory and investment behavior.' *American Economic Review*, 53 (2): 247-259.

Tobin, J. (1969) 'A general equilibrium approach to monetary theory.' *Journal of Money, Credit, Banking*, 1 (1): 15-29.

Table 8.1 *Descriptive statistics of the variables used. Number of observations: 7140.*

Variable	Full Sample		
	Mean	Median	St. Dev.
K	3311994	1173330	6308335
I	699019	202183	1659003
I_t/K_{t-1}	0.331	0.197	0.563
S_t/K_{t-1}	6.276	3.901	8.187
RA_t	0.018	0.014	0.075
CF_t/K_{t-1}	0.365	0.292	0.623
AL_{t-1}/K_{t-1}	0.357	0.096	1.093
D_{t-1}/K_{t-1}	0.652	0.378	1.302

Table 8.2 *Regression results for full sample, considering the alternative specifications of the investment equation. Dependent variable, I_t/k_{t-1}. Standard errors are in parenthesis. Number of observations 7140.*

Independent	Full Sample		
Variable	(1)	(2)	(3)
S_{it}/K_{it-1}	0.0260*	0.0257*	0.0262*
	(0.0011)	(0.0011)	(0.0011)
RA_{it-1}	0.164*	0.163*	0.146*
	(0.0057)	(0.0057)	(0.0069)
RA_{it}	-0.418*	-0.418*	-0.425*
	(0.0306)	(0.0306)	(0.0302)
CF_{it}/ K_{it-1}	0.163*	0.164*	0.164*
	(0.0131)	(0.0131)	(0.0128)
AL_{it-1}/ K_{it-1}		0.010*	0.013*
		(0.0030)	(0.0029)
D_{it-1}/ K_{it-1}			-0.011*
			(0.0034)
Adjusted R^2	0.35	0.35	0.35
DW	1.88	1.88	1.88

* Significant at 1% level.

Table 8.3 *Descriptive statistics for large and small firms. Number of observations 3570.*

Variable	Large Firms			Small Firms		
	Mean	Median	St. Dev.	Mean	Median	St. Dev.
K	5957508	3108122	8067413	666479	420520	718849
I	1238918	538035	2203110	159119	76503	261752
I_t/K_{t-1}	0.292	0.190	0.361	0.370	0.209	0.709
S_t/K_{t-1}	5.454	3.706	5.601	7.098	4.106	10.067
RA_t	0.020	0.014	0.071	0.016	0.013	0.078
CF_t/K_{t-1}	0.338	0.281	0.445	0.393	0.304	0.760
AL_{t-1}/K_{t-1}	0.272	0.070	1.088	0.441	0.133	1.092
D_{t-1}/K_{t-1}	0.751	0.517	1.029	0.553	0.264	1.520

Table 8.4 *Regression results for firms classified according to their size, considering the alternative specifications of the investment equation. Dependent variable, I_t/k_{t-1}. Standard errors are in parenthesis. Number of observations 3570.*

Independent Variable	Large Firms			Small Firms		
	(1)	(2)	(3)	(1)	(2)	(3)
S_{it}/K_{it-1}	0.023* (0.0009)	0.023* (0.0009)	0.023* (0.0009)	0.028* (0.0024)	0.027* (0.0024)	0.028* (0.0025)
RA_{it-1}	0.118* (0.0057)	0.118* (0.0057)	0.104* (0.0065)	0.349* (0.0206)	0.344* (0.0204)	0.338* (0.0222)
RA_{it}	-0.313* (0.0211)	-0.313* (0.0212)	-0.322* (0.0211)	-0.949* (0.1039)	-0.940* (0.1046)	-0.941* (0.1039)
CF_{it}/K_{it-1}	0.126* (0.0095)	0.126* (0.0096)	0.126* (0.0096)	0.314* (0.0348)	0.314* (0.0349)	0.313* (0.0347)
AL_{it-1}/K_{it-1}		0.005 (.0039)	0.009* (0.0037)		0.012* (0.0048)	0.012** (0.0047)
D_{it-1}/K_{it-1}			-0.011* (0.0028)			-0.015*** (0.0086)
Adjusted R^2	0.36	0.36	0.36	0.39	0.39	0.39
DW	1.83	1.82	1.82	1.94	1.94	1.94

* Significant at 1% level.
** Significant at 5% level.
*** Significant at 10% level.

Table 8.5 *Industrial Production Index for the Manufacturing Sector*

Year	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
Value	100.0	100.4	97.8	92.2	92.6	95.9	97.4	101.7	104.3	105.8	106.2

Source: INE

Table 8.6 *Regression results for firms classified according to their size and phase of business cycle, considering the specification (4) of the investment equation. Dependent variable, I_t/k_{t-1}. Standard errors are in parenthesis.*

Independent	Recession		Expansion	
Variable	Large	Small	Large	Small
S_{it}/K_{it-1}	0.022*	0.027*	0.024*	0.027*
	(0.0012)	(0.0020)	(0.0015)	(0.0022)
RA_{it-1}	0.087*	0.251*	0.093*	0.188*
	(0.0142)	(0.0430)	(0.0285)	(0.0456)
RA_{it}	-0.274*	-0.460*	-0.273*	-0.574*
	(0.0291)	(0.0796)	(0.0585)	(0.0683)
CF_{it}/K_{it-1}	0.155*	0.212*	0.106*	0.277*
	(0.0139)	(0.0180)	(0.0206)	(0.0189)
AL_{it-1}/K_{it-1}	-0.029*	0.020	0.006	0.043*
	(0.0103)	(0.0173)	(0.0081)	(0.0107)
D_{it-1}/K_{it-1}	0.003	-0.019**	-0.007	-0.020*
	(0.0039)	(0.0075)	(0.0055)	(0.0074)
Adjusted R^2	0.81	0.62	0.56	0.77
DW	2.20	2.31	2.11	2.21

* Significant at 1% level.

** Significant at 5% level.