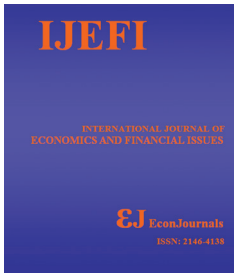

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Internal Finance and Growth: Comparison Between Firms in Indonesia and Bangladesh

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ABSTRACT

This paper investigates a panel of 289 Indonesian firms and 73 Bangladeshi firms over the period 1998-2006 to study the extent to which the availability of the Internal finance in terms of cash-flow influences firms' growth. There is less than one for one correspondence between assets growth and Internal Finance using the simple dynamic asset growth model augmented with cash-flow. This result is robust to estimating more general and extended dynamic model. Growth of assets is not constrained by the profit generating capacity of firms in Indonesia as well as in Bangladesh. Along with internally generated funds, growth of firms is determined by external equity finance, as well as institutional finance.

Keywords: Assets Growth, Cash-flow, Equity Finance
JEL Classification: D92

1. INTRODUCTION

Recent studies have adopted a micro perspective and used firm level data to explore the links between finance and growth. In the context of Chinese firms, which have been growing at remarkably high rate in recent years, a group of papers by Ayyagari et al. (2008) and Cull et al. (2007) focus on firm level data to explain the high growth rate, despite a poorly developed financial system. In their sample a small percentage of firms use bank finance, while reliance on informal finance is prevalent. According to a study by Chow and Fung (1998) firms investment is constrained by cash-flow. The sensitivity of investment to cash-flow is highest for private firms. In a study by same authors (2000) show that small firms demonstrate lower sensitivities of investment to cash-flow than large firms. Small firms may be using their working capital to smooth their fixed investment. These studies suggest that as cash-flow plays an important role in determining firm investment, it is also likely to affect firm growth.

Very little is known about the relationship between growth and Internal finance about the economies like Indonesia and Bangladesh. This paper investigates the exact link between cash-flow which is the proxy for ınternal finance and growth for firms in Indonesian and Bangladesh. Indonesia is one of the fastest growing far east economies, on the other hand Bangladesh is one of the growing economies in the subcontinent of South Asia.

2. DATA

The data is obtained from "Oriana" from Bureau Van Dijk Electronic publishing. The firms in the data set cover different ındustries, including agriculture, forestry and fishing, mining, construction, manufacturing, transportation, utility services, wholesale trade, retail trade, finance, ınsurance and real state and service sector. The data set provides information from the period 1998-2006, on total of 289 listed Indonesian firms and 73 Bangladeshi firms. The panel has Unbalanced structure, with the number of years of observations on each firm varying between 1 and 9. By allowing for both entry and exit, the use of an unbalanced panel partially mitigates potential selection and survivor bias. The regression variables and the dependent variable are converted from nominal to real by using ımplicit

gross domestic product deflator. The regression is run over the Full sample for each country.

2.1. Summary Statistics

There is substantial difference in value of assets and sales between two countries. The values are much higher in Indonesia. The ratios of cash-flow to total assets are similar. But the ratio of cash-flow to tangible fixed assets is considerably larger in Indonesia compare to Bangladesh. Ratios of leverage to total assets and tangible fixed assets to total assets are quite similar.

Sample means	Indonesia	Bangladesh
Assets growth	−0.041	−0.045
Sales growth	0.001	−0.03
Assets	1615.62	152.14
Sales	1190.65	94.19
Cash-flow/total assets	0.061	0.072
Cash-flow/tangible fixed assets	1.02	0.243
Leverage/total assets	0.439	0.571
Tangible fixed assets/total assets	0.41	0.43

2.2. Definition of the Variables Used in Summary Statistics

Total assets: Sum of fixed assets and current assets. Fixed assets include tangible fixed assets, intangible fixed assets, and other fixed assets; current assets inventories, accounts receivable, and other current assets

Cash-flow: Net Income plus Depreciation

Leverage: Ratio of current and non current liabilities to total assets. Current liabilities include Bank loan, accounts payable, and other current liabilities, noncurrent liabilities include long term debt and other non current liabilities.

Collateral: Ratio of tangible assets to total assets.

3. BASELİNE MODEL AND ESTİMATİON METHODOLOGY

$$(Asset\ Growth)_{it} = a_0(Assets\ Growth)_{i\,(t-1)} + a_1\,(Cash\ Flow/Total\ Assets)_{it} + v_i + v_t + e_{it} \quad (1)$$

The subscript i identifies firms, and t identifies time. The error term comprises three terms, v_i is firm specific component, encompassing all time-invariant firm characteristics likely to influence growth, v_t is a time specific component accounting for business cycle effects. The last term e_{it} is an idiosyncratic component. $(Assets\ Growth)_{it}$ is defined as the difference between the logarithms of total assets in periods t and $t-1$.

According to Carpenter and Peterson (2002), in the presence of capital market ımperfections, the coefficient a_1 should be greater than one for financially constrained firms. For these firms the access to external finance is restricted. External finance is typically more expensive. A higher cash-flow will help these firms to obtain loan because of healthier balance sheet. So for financially constrained firms increase in cash-flow will be able to increase their total assets slightly more than one for one, due to this leverage effect. Firms which have easy and smooth access to external finance, change in cash-flow will have a moderate effect (less than one for one) or no effect at all on their growth.

Ordinary least squares (OLS)[1] and fixed effect specifications[2] are used in case of Indonesian data set. Within groups estimation technique is dropped for Bangladesh Data set because of considerably smaller number of observations compare to Indonesia. From the econometric estimates the coefficient "a_1" could be compared for each country. The lagged dependent variable is included in both specifications. So the model is dynamic (Guariglia et al. 2008) not a static one.

3.1. Regression Results

In Table 1 the coefficient of $(Cash\text{-}flow/Total\ assets)_{it}$ is precisely determined (statistically significant at 1% level) in both specifications and the sign is positive, but its value is less than one (around 0.5), which manifests the fact that the cash-flow does play an important role in determining firms' growth. Firm's Internal Finance has moderate effect on the growth of assets. These firms might have soft budget constraints. The firms might have easy access to other sources of external finance. These firms have good potential to thrive in future, so they are able to secure loan from other various sources of external finance, though they have low level of Internally generated funds.

The coefficient of the lagged dependent variable is precisely determined. The sign is negative implies convergence in the fixed effects estimation. And it is positive in pooled OLS estimation. This contradictory signs imply the impact of lagged dependent variable is ambiguous on the dependent variable.

In Table 2 for firms in Bangladesh the cash-flow coefficient is less than one and not precisely determined at 1% level. In within groups estimation this coefficient is not precisely determined. The poorly determined cash-flow coefficient indicates that the growth of assets might be independent of ınternal finance. The growth of firms in Bangladesh is dependent on other various sources of external finance.

The coefficient of the lagged dependent variable is statistically significant. But the signs are opposite in two estimations. The impact of lagged dependent variable is not clear on growth.

1 OLS with robust standard errors results are presented. Robust standard errors are heteroskedasticity - consistent standard errors.

2 The first difference generalised methods of moments estimator developed by Arellano and Bond (1991) technique takes unobserved firm heterogeneity into account by estimating the growth equations in first differences, and controls for possible endogeneity problems by using the model variables lagged two or more periods as instruments. At least three cross sectional observations are needed for each firm to allow the first differencing process and construction of instruments. For Bangladesh panel data, where we do not have more than 4 cross sectional observations for each firm. So we are restricted to use the OLS and within groups estimation technique for Indonesia. This does not alter or change our fundamental or basic findings of the paper.

3.2. Extended Model

To highlight what might be the other determinants of growth (Becchetti and Trovato, 2006; Heshmati, 2001, and Honjo and Harada, 2006 for similar type of specification), the following more general model is estimated.

$$(Asset\ Growth)_{it} = a_0(Assets\ Growth)_{i(t-1)} + a_1\ (Cash\text{-}flow/Total\ Assets)_{it} + a_2(Leverage/Total\ Assets)_{it} + a_3 Collateral_{it} + v_i + v_t + e_{it} \quad (2)$$

In addition to cash-flow, leverage, which is the sum of current and non current liabilities is added, as its ratio to total assets, this regressor is important for linking the results with macro studies on growth. By including leverage in the growth equations it could be verified whether loans that are regularly disbursed towards worst performing firms, the relationship between leverage and growth should be negative. On the other hand if the estimated coefficient is found to be positive then the loans are systematically given to those firms that are rapidly growing. The ratio of tangible fixed assets to total assets which is the collateral is also included in model. The expected sign of is positive. As more the collateral the firm has, greater the likelihood that the firm gets better access to external finance to fund their ınvestment opportunities and it is more likely that the firms are expected to grow faster.

In Table 3, the cash-flow coefficients are precisely determined in all specifications. The size is found to be less than one (around 0.5). The ınternal finance has moderate impact on growth. This implies that the firms have other sources of external finance. The coefficient of lagged dependent variable is statistically significant, but they have opposite signs in pooled OLS and Within groups estimations. The impact of this variable is not clear on growth. The coefficient of Leverage is found to be statistically insignificant on growth in OLS but within groups estimation it is found to be precisely determined and the sign is positive. This again confirms that these firms have strong dependence on external finance. Growth increases with the increase in Leverage. The loans are systematically disbursed to those firms which are growing faster. The coefficient of the variable collateral is precisely determined in all specifications. The sign is negative. High collateral reduces the firms growth. This interesting finding suggests about the nature of external finance. Mostly it is "informal finance" where collateral is not required for firms to obtain loans from external sources.

In Table 4 the cash-flow coefficients are precisely determined in OLS estimations, with and without robust standard errors. The sign is positive and statistically significant so the ınternal Finance does moderately affect firms' growth. As its value is less than one this implies that growth of firms is not strongly dependent on the availability of the Internal funds or the profit generating capacity. The coefficients with leverage and collateral are poorly determined. In the extended model, the external finance has very little role in determining firms' growth. It seems that a combination of Internal finance and external equity finance might be responsible for determining the growth of the firms in Bangladesh. The fixed effects estimation methodology is dropped

Table 1: The effects of ınternal finance on assets growth: Indonesıan firms

	Dependent variable: $(Assets\ growth)_{it}$		
Regressor	**OLS (pooled) (without robust standard error)**	**OLS (pooled) (with robust standard error)**	**Within groups, estimator, (fixed effects estimator)**
$Assets\ Growth_{i,(t-1)}$	0.143*** (0.037)	0.143*** (0.041)	−0.179*** (0.046)
$(Cash\text{-}flow/total\ assets)_{it}$	0.575*** (0.070)	0.576*** (0.079)	0.578*** (0.107)
Number of observations	622	622	622

The numbers in parenthesis are estimated standard errors. ***Significant at 1%, **Significant at 5%, *Significant at 10%, OLS: Ordinary least squares

Table 2: The effects of internal finance on assets growth: Bangladesh firms

	Dependent variable: $(Assets\ growth)_{it}$		
Regressor	**OLS (pooled) (without robust standard error)**	**OLS (pooled) (with robust standard error)**	**Within groups, estimator, (fixed effects estimator)**
$Assets\ Growth_{i,(t-1)}$	0.315** (0.124)	0.315* (0.122)	−0.44** (0.185)
$(Cash\text{-}flow/total\ assets)_{it}$	0.487* (0.21)	0.487* (0.25)	0.177 (0.49)
Number of observations	71	71	71

The numbers in parenthesis are estimated standard errors. **Significant at 5%, *Significant at 10%, OLS: Ordinary least squares

Table 3: The regression results: Indonesian firms

	Dependent variable: $(Assets\ growth)_{it}$		
Regressor	**OLS (pooled) (without robust standard error)**	**OLS (pooled) (with robust standard error)**	**Within groups, estimator (fixed effects estimator)**
$Assets\ growth_{i,(t-1)}$	0.156 (0.038)	0.156 (0.042)	−0.14*** (0.046)
$(Cash\text{-}flow/total\ assets)_{it}$	0.584*** (0.077)	0.584*** (0.094)	0.575*** (0.126)
$(Leverage/total\ assets)_{it}$	0.03 (0.02)	0.03 (0.018)	0.15*** (0.05)
$Collateral_{it}$	−0.06 (0.018)	−0.07** (0.027)	−0.48*** (0.124)
Number of observations	572	572	572

Number in parenthesis are estimated standard errors. ***Significant at 1%, **Significant at 5%, *Significant at 10%, OLS: Ordinary least squares

Table 4: The regression results: Bangladesh firms

Dependent variable: $(Assets\ growth)_{it}$		
Regressor	**OLS (pooled) (without robust standard error)**	**OLS (pooled) (with robust standard error)**
$Assets\ Growth_{i,(t-1)}$	0.33** (0.123)	0.33** (0.119)
$(Cash\text{-}flow/total\ assets)_{it}$	0.76*** (0.25)	0.76** (0.31)
$(Leverage/total\ assets)_{it}$	0.06 (0.093)	0.06 (0.134)
Collateralit	−0.14*** (0.075)	0.14*** (0.052)
Number of observations	71	71

Number in parenthesis are estimated standard errors. ***Significant at 1%, **Significant at 5%, *Significant at 10%, OLS: Ordinary least squares

because of considerably small number of observations for firms in Bangladesh.

4. COMPARİSON OF REGRESSİON RESULTS WİTH OTHER EMPİRİCAL FİNDİNGS

The coefficients of cash-flow to total assets are positive and less than one as well as significant in simple dynamic asset growth model and in extended model for firms in Indonesia. According to Carpenter and Peterson (2002) the smaller cash-flow coefficient implies that the firms are relatively high equity finance firms (these firms constitute small fraction of their sample). Firms have the ability to issue new shares which reduces the dependence on internal finance for growth, so they do not appear to face tightly binding internal financing constraints. These results suggest that the relationship between growth and Internal finance is weak, suggesting a relaxation of the ınternal finance constraint. According to Brown et al. (2009) a country's financial architecture might play an important role in this regard. Their findings suggest that in the US during 1980's and 1990's, thousands of young high tech firms obtained a tremendous amount of finance from various external equity markets. These new entrants had very high levels of R and D investment. During the same period, bank based economies such as Germany and France had comparatively less success in creating new high tech firms, and their world share of high tech production fell substantially, exactly opposite of the US.

For firms in Bangladesh, the cash-flow coefficient is found to be statistically insignificant in simple model of asset growth. The ınternal finance does not affect the firm's growth significantly. In a paper by Honjo and Harada (2006), they found statistically insignificant cash-flow coefficients for relatively older SMEs in Japan.

In the more general model, the cash-flow coefficient is precisely determined, the value is positive and less than one. Again this confirms that growth is not fully dependent on the availability of Internal Finance and not constrained by internal finance. Coefficient with leverage is poorly determined. Growth of these firms is not dependent on formal institutional external finance. Financial system in Bangladesh is probably becoming market based from traditional Bank based system. Coefficient with collateral is negative and not poorly determined in the extended model. High collateral reduces growth of firms. This is consistent with estimated coefficient with leverage. Growth of the firms in Bangladesh are increasingly and heavily becoming contingent upon the external equity finance. This finding confirms the relaxation of internal financial constraint. The result is pretty similar to that of Indonesian firms.

If the cash-flow coefficients are compared in the extended model, we observe that the magnitude is larger in Bangladesh (0.76) than that of Indonesia (0.58). The cash-flow to total asset ratio is also larger for Bangladesh (0.07) than Indonesia (0.06). (Summary statistics). It could be concluded that firms growth in Bangladesh is becoming more dependent on external equity finance.

Guariglia et al. (2008) estimated dynamic asset growth model on Chinese firms and found that growth of state owned firms is not affected by availability of cash-flow (cash-flow coefficient is smaller than one), while the privately owned firms' growth is dependent on internal finance (cash-flow coefficient is larger than one), because of their limited access to formal institutional finance.

Future research could shed light on the determinants of firm growth for emerging economies. The general model could be expanded by examining the impact of labour productivity, access to foreign markets (Exports) on firms' growth.

5. CONCLUSİON

This paper finds that internal funds appear not to have fostered private firms' growth. More or less firms growth is not strongly affected by availability of internal finance. This result has been obtained by using simple and more general dynamic model of asset growth. Indonesian firms' growth is determined by a combination of internally generated funds, institutional external finance, and external equity finance. Because in the extended model the coefficient with leverage was precisely determined in fixed effects specification. Growth increases with increase in leverage, which means loans are given to faster growing firms. On the other hand the coefficient with collateral was negative and precisely determined. This implies high collateral reduces firms' growth. The firms are increasingly becoming dependent on external equity finance. For Bangladesh firms the scenario is better explained by the extended model rather than simple model augmented with cash-flow. Growth is not strongly dependent on ınternal finance. Leverage does not play any significant role in determining firms' growth rather Collateral significantly and negatively affects firms' growth. This indicates apart from internal finance, growth of firms in Bangladesh is also dependent on external equity finance. Our results reinforce the idea that firms able to obtain large quantities of new equity financing do not appear to face tightly binding internal financing constraints. To make sure that the firms in these economies continue to thrive, measures will have to be taken ensuring a more widespread access to institutional finance.

REFERENCES

Ayyagari, M., Demirguc-Kunt, A., Maksimovic, V. (2008), Formal versus informal finance: Evidence from China. World Bank Policy Research Working Paper No. 4465.

Arellano, M.S. Bond. (1991), Some tests of Specification for Panel Data: Monte Carlo evidence and an application to employment equations. Review of Economic Studies, 58, 277-97

Becchetti, L., Trovato, G. (2006), The determinants of growth for small and medium sized firms. The role of the availability of external finance. Small Business Economics, 19, 1-16.

Brown, R.J., Fazzari, S., Peterson, B. (2009), Financing innovation and growth: Cash flow, External equity and the 1990s R &D Boom. Journal of Finance, 64, 151-185.

Carpenter, R., Peterson, B. (2002), Is the growth of small firms constrained by internal finance? Review of Economics and Statistics, 84, 298-309.

Chow, C.K.W., Fung, M.K.Y. (1998), Ownership structure, lending bias, and liquidity constraints: Evidence from Shanghai's manufacturing sector. Journal of Comparative Economics, 26, 300-316.

Cull, R., Xu, L.C., Zhu, T. (2007), Formal Finance and Trade Credit during China's Transition. World Bank Working Paper No. WPS4204.

Guariglia, A., Xiaoxuan, L., Song, L. (2008), Internal Finance and Growth: Microconometric Evidence on Chinese Firms. GEP Research Paper Series, Leverhume Centre, University of Nottingham.

Heshmati, A. (2001), On the growth of micro and small firms: Evidence from Sweden. Small Business Economics, 17, 213-228.

Honjo, Y.,Harada, N. (2006), SME Policy, financial structure and Firm growth: Evidence from Japan. Small Business Economics, 27, 289-300.