

Fourati, Hedia

## Article

# Ownership concentration, dynamic trade off theory and debt funding of business start-up

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## Ownership concentration Dynamic trade off theory And debt funding of business start-up

Hedia Fourati  
*University of Sfax, Tunisia*

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## Ownership concentration, Dynamic trade off theory and debt funding of business start-up

Hédia FOURATI

A doctor in finance, faculty of economics and management

University of Sfax Tunisia

hedia.fourati@yahoo.fr

**Abstract:** This paper examines the dynamics trade-off financial structure in presence of ownership dispersion of newly created firms. Our objective is to test empirically the relevance of trade-off theory regards the debt funding behavior of business start-up. We use a sample of 200 business start-ups and the GMM panel data estimation over the period 2006-2010.

We find that ownership dispersion, tangibility and profitability lead to more debts funding. In addition, we prove that the adjustment to the ratio is moderating and that the necessary transaction costs are high for startups. Ownership dispersion leads to more liquidity and accelerates adjustment to debt funding. Trade-off theory could explain the financial behavior of business start-up.

**Keywords:** Capital Structure, Trade-off Theory, start-up, Dynamic Structure, Costs of Adjusting, Corporate Finance, ownership concentration.

## 1. Introduction

Prior research has explored the capital structure decisions of large, well-established publicly-traded firms. The Trade-off theory is so judged to be inconvenient in the context of business start-up, (Cassar, 2004, Cotei and Farhat, 2017) due the high probability of failure. López-Gracia and Sogorb-Mira (2008) point out that SMEs aim to achieve an optimal debt ratio. Although the fundamentals are different, the Trade-off theory agrees that certain specific factors such as profitability and growth opportunities define the capital structure. The main studies on the capital structure of business start-up are limited to test the pecking order theory but what about the role of the trade –off theory?

Ownership concentration and managerial equity holdings were supposed to lead to better firm performance by ensuring better monitoring and increasing managerial effort for large firms but what about business start-up? This managerial entrenchment<sup>1</sup> could it explain the financial behavior of business start-up?

In fact, recent empirical studies in corporate governance show the prevalence of firms with a dominant shareholder (Paligorova and Xu, 2012). Nevertheless, multiple owners could signal more initial funding that lead to more debt funding in case of newly created firms. Studies suggested that debt is positively related to managers' equity ownership (Leland and Pyle, 1977; Berger and al., 1997), while other empirical studies have argued for a negative relationship between managerial ownership and debt levels. Then, our second motivation of research is to investigate the relationship between ownership concentration and corporate debt levels for business start-up.

We address the following controversial issue: how the trade off theory from its static and dynamic version provides the best predictions as regards the borrowing behavior of business start-up in presence of ownership concentration/dispersion? We examine the main determinants of corporate leverage strategy in presence of multiple or few owners (short-term as well as medium and long-term debt) upon a sample of 200 business start-up drawn from the PSED database over the period 2006-2010. The paper is organized as follows: Section 2 designs the assumptions related to trade off theory. Section 3 describes the key variables selected in order to test these assumptions. Section 4 presents the sample and descriptive statistics; it sketches the theoretical model and econometric techniques, and discusses the outcomes. Section 5 concludes.

## 2. Hypotheses

Under the Trade-off theory, several studies support the existence of a target ratio. The trade-off theory predicts that startup firms use less debt due to high probability of failure. The trade-off theory argues that firms will evaluate the benefits and costs of having debt, and will therefore find an optimal balancing between debt and equity in order to maximize the value of the company through the financial structure (Damodaran, 1999).

However, with the market imperfection problems, firms are not immediately and completely converged to a target ratio. Thus some studies suggest the introduction of adjustment costs as an explanatory factor of financial behavior.

Number of academic papers is specifically focus on Trade-off theory of debt financing in business start-up. Although there are two existing literatures: Coleman, Cotei and Farhat (2014)<sup>1</sup> demonstrate the firm characteristics such as growth, tangibility, as well as owner characteristics such

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<sup>1</sup> Weisbach (1988): "Managerial entrenchment occurs when managers gain so much power that they are able to use the firm to further their own interests rather than the interests of shareholders."

work experience, education level and ethnicity can explain the debt equity decisions in the startup year. Drobetz and Wanzenried (2007) also test tangibility, growth and profitability as determinants of the capital structure and they also apply dynamic panel estimation using GMM.

Adair and Adasku, (2015) test 2370 French SMEs over the period 2002–2010. They conclude that neither tradeoff nor POT validates all the variables explaining capital structure and there is no general theory thereof.

The static version of the Trade-off theory suggests the existence of an optimal capital structure. Others researchers demonstrated that the Trade-off theory is not profitable for young firms, Mac an Bhaird, (2010). Static trade-off includes the tax benefits of leverage and bankruptcy costs. Young firms have less tax benefits which are associated with more debt use, (Day and al., 1983). The second component of the trade-off theory is the bankruptcy cost. In fact, “*young firms are more failure prone than older ones*”, Cressy, (2006). Nevertheless, bankruptcy costs are insufficient for proving the negative association between risk and leverage, Poutziouri and al, (1999). Entrepreneur is more interested with debts than its tax benefits.

Taking into account the speed and the cost of adjustment, «The Dynamic Trade-off Theory» is developed, Fischer, Heinkel and Zechner, (1989). Dynamic trade-off theory proposes that firms may deviate from their target capital structure but they will exhibit an adjustment behavior towards that target. Indeed, the adjustment for existing firms is proving to be rapid in some markets such as Spain (De Miguel and Pindado 2001) and America (Flannery and Rangan 2006), slower on others, such as Swiss (Gaud,2002) and France (Kremp et al 1999) and very slow on emerging markets (Haas and Peeters 2006). What about business start-up?

Vanaker and Manigart, (2010) found that profitable businesses prefer to finance investments with retained earnings, even if they have unused debt capacity. External equity is particularly important for unprofitable businesses with high debt levels. New equity issues are particularly important to allow high-growth businesses to grow beyond their debt capacity.

Bolton and al, (2013), analyze a model of optimal capital structure and liquidity choice based on a dynamic tradeoff theory for financially constrained firms. In addition to the classical tradeoff between the expected tax advantages of debt financing and bankruptcy costs, they introduce a cost of external financing for the firm, which generates a precautionary demand for cash and an optimal retained earnings policy for the firm. Due to debt servicing cost financially constrained firms choose to limit their debt usages in order to preserve their cash holdings. And they choose not to exhaust its risk-free debt capacity. Interest payments may help shield earnings from corporate taxation, but they potentially induce costly external financing.

Lopez and Garcia,(2008) find that SMEs follow a funding source hierarchy (pecking order model), and that greater trust is placed in SMEs that aim to reach target or optimum leverage (trade-off model). This remains true even when SMEs take a long time to reach this level, due to the high transaction costs they have to face.

Several papers recognize that the level of private information is higher in firms with a concentrated ownership structure. More recently, Ginglinger and Hamon (2007) and Becker and al. (2008) provide similar results in the presence of large shareholders, illustrating a higher degree of adverse selection due to informed traders but what about business start-up?

Nevertheless, the presence of multiple shareholders beyond the largest one may enhance information production. Cotei and Farhat, (2017) found that owner rely less on personal equity and theirs contribution is from retained earnings.

To estimate the target level of indebtedness, Hovakimian, Opler and Titman (2001) and Danbolt and Bevan (2000) analyze the dynamics of the capital structure of British firms for the

period 1991 to 1997. They give off a strong relationship between debt and four variables namely: the level of growth opportunities, profitability and variable asset structure.

Hubert and Latrous, (2012) use a sample of 112 firms listed on the French stock market over the period 1998-2009. Their results support an inverted U-shape relationship between shareholders' ownership and leverage.

According to Dyck and Zingales (2004) or Laporta et al. (1997, 2002), the potential for private benefits extraction by the controlling shareholders increases the cost of finance. In this context, several papers report that other large shareholders reduce the potential for wealth diversion monitoring (Maury and Pajuste (2005). Accordingly, firms with single large shareholders or firms with majority shareholders are more likely to incur higher costs of external finance than firms with no majority shareholders or firms with multiple shareholders. Indeed, a recent paper by Attig et al. (2008) provides direct empirical evidence on this relationship. They report that firms with multiple large shareholders beyond the ultimate owner incur lower costs of external finance compared to firms with a single controlling shareholder. In light of these results, we expect concentrated ownership of business start-up incur high costs of adjustments.

Market imperfections in information asymmetry as in the context of business start-up lead to costs and adjustment constraints. Such firms do not fully converge to long-term debt ratios and they follow a partial adjustment model towards values targets.

Recently, the existence of a partial adjustment dynamic behavior at endogenously determined debt target is also highlighted on the UK market by Ozkan (2001) and on the Spanish market by De Miguel and Pindado (2001). Banerjee and al, (2000) studied a dynamic model of capital structure in which they release the assumption that the companies have reached a target and maintain optimal level of debt, and consider that they may depart of their target. These authors worked on a sample of 122 British firms in 1990-1996 and 438 US firms over the period 1989-1996. For UK firms, the speed of adjustment is very slow, even when firms are far away from their target. They then conclude small sized firms seem to adjust quickly to their target than large firms.

Vilasuso and Minkler (2001) propose a dynamic model of capital structure and integrate debt agency costs and equity as determinants of the cost of financing. They find that the agency costs increase with the degree of asset specificity. Vilasuso and Minkler, (2001) conclude that agency costs and the degree of asset specificity are significant determinants of the capital structure of the firm.

Farhat, (2016) studies the way business start-up are funding their operations over time. By using Kauffman Firm Survey data, the largest longitudinal data set comprised of all U.S. startups launched in 2004. Simultaneously, he examines whether the pecking-order and the trade-off theories explain the changes in capital structure of startups from inception to the later stages of development. At the startup stage, entrepreneurs rely on initial insider capital sources, such as personal savings, financing offered by friends and family, quasi-equity, and personal debt. Over time, the proportion of business debt and trade credit financing in the total capital injection increases significantly.

Our main objective is to test the relevance of the trade-off theory in explaining the financial behavior of business start-ups in presence of ownership concentration/dispersion. To do this, we follow the methodology of Gaud and Jani (2002). While the former is static order, the second is a dynamic model incorporating variable cost adjustment to see how far we can speak of a speed of adjustment enabling companies to get closer to their target ratio. First, we present our sample and the explained and explanatory variables. Second, we identify hypotheses and the specification which ends with a presentation and interpretation of results.

## 2.1. Economic profitability

In a context of information asymmetry, the most profitable firms have more cash which give off a negative relationship between profitability and debt. Firm's profitability will be negatively related to the expected financial distress costs. Since the probability that firms with higher and more stable profits will enter bankruptcy would be lower. This description is confirmed by several empirical results (Harris and Raviv, 1991; Rajan and Zingales, 1995; Fama and French, 1999; and Booth et al 2001). A profitable firm has a preference for debt because the interest is deductible from taxable income. Moreover, if past profitability is a good approximation of future profitability, a very profitable business will be more likely to repay its debt, (Shyam, Sunder and Myers, 1999). The static theory therefore predicts a positive relationship between leverage and profitability. This prediction is the great contradiction of the Trade-off model. Our first hypothesis presents itself as follows:

*H1: Economic profitability is positively related to debt.*

Several approaches are used to measure the profitability. We measure the profitability (RENTABILITY) by the ratio of earnings before interest and taxes on total assets (Rajan and Zingales, 1995 and Booth et al, 2001).

## 2.2. Growth opportunities

Asset growth reflects the funding requirements resulting from the financial policy of the firm. Growth opportunities, lead to funding problem. From the perspective of agency theory and according to Myers (1977), agency costs between shareholders and creditors will be even higher than the value of future growth opportunities is more important compared to the present value of assets in place. We expect a negative relationship between leverage and growth opportunities. Hovakimian, Hovakimian and Tehranian (2003) suggest that the negative effect of MTB debt ratio is partly due to the negative relationship between growth opportunities and target ratio. Based on theoretical considerations and the results found by the majority of empirical work, we make the following hypothesis:

*H2: Growth opportunity is negatively correlated to debts funding of business start-up*

Harris and Raviv (1991) the Market to Book ratio (MTB) is frequently used as a measure of growth options. Other measures have been used as marketing expenses, research and development and capital expenditures (Titman and Wessels 1988). We chose the ratio changes in capital as a measure of the variable growth opportunities.

## 2.3. Asset structure

Tangible assets have an impact on the level of debt because they are less subject to information asymmetries and lose in the event of liquidation, less value than intangible assets. They therefore offer more guarantees to creditors. Under the conflict of interest between shareholders and creditors, Jensen and Meckling (1976) demonstrated that over-investment problem is less

serious when the firm has a significant share of tangible assets in its assets. Consistent with this prediction, we assume that:

*H3: Debts should be positively correlated with asset tangibility for business start-up.*

The net tangible assets ratio over total assets in stocks was selected as a measure of asset structure (*TANGIBILITY*). This measure was also adopted by Kremp and al (1999).

## 2.4. Ownership concentration

The agency cost hypothesis of capital structure accepts the existence of optimal capital structure like static trade-off hypothesis. But it argues that optimal capital structure is obtained as the solution of the firm's minimizing the interest conflict between shareholders and debt holders, the principle-agent cost. Since financial decision-making is strictly influenced by the ownership structure (Jensen and Meckling, 1976) we include a variable of number of owners.

*H4: Ownership dispersion leads to more debts funding*

## 3. Data

We study the financial behavior of business start-up under the trade-off theory and ownership dispersion. First, we conduct a regression of leverage on rentability, growth, asset tangibility and owners in a static model by using the generalized method of moment, studying the fixed and the random effect. Then, we study the same model under a dynamic adjustment.

Our sample consists of 200 business start-ups from the PSED (panel study of entrepreneurial dynamics) database. We can distinguish between different activities (retail stores, restaurant, services, health, education, manufacturing, construction, communication, and finance, insurance). Retail stores and services constitute the majority share of 55% of all.

The measure of debt leverage (long-term debt + average current bank loans / total assets).

As discussed by Titman and Wessels's (1988) and Harris and Raviv (1991), the choice of explanatory variables of debt is not easy. In your study, we use five main variables approved in the literature are: Profitability, growth opportunities and asset structure and ownership concentration/dispersion).

Descriptive statistics show that in mean our sample of business start-up has a leverage ratio of 24.3% and are under-levered due to financial crisis. In mean there are two additional owners besides the entrepreneur and so there is a moderated dispersed ownership.

*Insert Appendix 3 here*

## 3.2. Results

We present the static model of the trade-off theory and the dynamic model.

### 3.2.1. Dynamic Trade-off Financing Behaviour

Dynamic trade-off models can also be used to consider the option values embedded in deferring leverage decisions to the next period. Goldstein et al. (2001) observe that a firm with low leverage today has the subsequent option to increase leverage. Under their assumptions, the option

to increase leverage in the future serves to reduce the otherwise optimal level of leverage today. Strebulaev (2007) analyzed a model quite similar to that of Fischer et al. (1989) and Goldstein et al. (2001). Our linear regression model follows the model of Rajan and Zingales (1995):

$$Leverage_{it} = a_0 + a_1 G'_{it} + C_t + \xi_{it} \quad (M3)$$

$leverage_{it}$ : endogenous variable, which represents the ratio of total financial debt of the company  $i$  for the period  $t$ ;

$G'_{it}$ : is a raw vector of conventional variables used in Rajan and Zingales (1995) that include tangibility of assets (*TANGIBILITY*), profitability (*RENTABILITY*), and growth opportunities (*GROWTH*);

$C_t$ : A set of control variables in number of owners and initial liquidity;

$\xi_{it}$ : error term.

According to Dynamic Trade-off Theory, firms have long run target leverage and adjust the gap between actual and target leverage each year. We retain a partial adjustment model of capital structure (Flannery and Rangan (2006)):

$$leverage_{it} = (1-\delta) leverage_{it-1} + a_1 G'_{it} + C_t + \xi_{it} \quad (M4)$$

The adjustment speed of leverage ( $\delta$ ) is bounded between zero and one. When is near one of these boundaries, it goes rapidly adjusted to the long run target leverage and is near zero, the adjustment is few.

The speed of adjustment is the percentage of the deviation from the target that the firm removes each period. In estimating the speed of adjustment, the implicit assumption is that the speed of adjustment is homogenous across firms (Fama & French 2002; Flannery & Rangan 2006; Ozkan 2001). This assumption is however inconsistent with the argument of the dynamic trade-off theory which posits that different costs of deviation and different costs of adjustments should result in different estimations for the speed of adjustment. Few recent papers indicate that no single estimated speed of adjustment can fit all firms.

Using panel data, Banerjee, Heshmati and Wihlborg (2004) and Lööf (2005) apply a nonlinear, least square methodology to estimate the parameters in a setup similar to ours in model. However, this methodology leads to biased and inconsistent estimators because error terms tend to be correlated with lagged leverage,  $LEVERAGE_{it-1}$ .

In order to avoid this problem, we apply the dynamic panel data and Generalized Method of Moments (GMM). They prove that estimation provides consistent parameter estimates by utilizing instruments that can be obtained from orthogonality conditions. Concerning the instruments, we report the *Sargan statistic*, which tests the over-identifying restrictions. Table 2 presents the different regression results of dynamic model

*Insert table 2 here*

In dynamic regressions, our results show expressive conclusions for the lagged dependent variable ( $LEVERAGE_{t-1}$ ). This variable focuses on the costs of adjustment. In the entrepreneurial context the speed of adjustment is low.

Our results point to the proportion of owner's equity in total capital injections increase over time.

Startup that have two to five owners tends to inject equity that contributes to more debt funding.

The variables *OWNERS* is significant at 10% level. Under this result, we confirm the hypothesis *H4*, under which a dispersed ownership structure of business start-up lead to more debts funding for services activities. Nevertheless, ownership dispersion leads to agency problems. Mahrt-Smith, (2005) suggested that firms that need to have dispersed ownership.

Ellul (2008) argued that various owner categories could impact a firm's financing decisions in different ways. James and al, (2002), use a sample of 1708 small corporations and find that agency costs are significantly higher when an outsider, rather than an insider manages the firm. We conclude that ownership dispersion have a positive effect on the speed of adjustment to debt ratio. The variable (*GROWTH*) is negatively and insignificantly correlated with leverage. Hypothesis *H2* is confirmed.

Asset growth reflects the funding requirements resulting from the financial policy of the firm.

Rentability is negatively correlated with leverage at 5% level. The profitable firms have more cash, this give off a negative relationship between profitability and debt. The hypothesis *H1* is retained this confirm the trade-off in start-up firms within a dynamic model.

Asset tangibility is always positive and significantly related to debt level and we retain hypothesis *H3*.

Under the dynamic model, the adjustment coefficient is relatively low. The importance of this factor is checked in the estimator of Arellano and Bond. According to these results, it appears that for start-up, adjustment to the ratio is slow and that the necessary transaction costs are high. Given the governance role played by banks.

Therefore, the low adjustment cost is due to the efficiency of the quality control exercised by banks.

Thus, and according to the results of studies of Fama and French (2002), the speed of adjustment to the target ratio is relatively low, and high levels of funding gaps are always associated with higher levels of debt.

### 3.2.2. Trade-off financing behaviour: the static model

The table 1 reports the results of estimating equation with GMM, fixed effect and random effect panel data estimator. Overall, the variables explain a significant part of the debt level of our sample firms.

*Insert Table1 here*

The  $R^2$  vary from 3% to 54% depending on the estimators. The Hausmann test is not significant and leads to favor retaining the model specifying random effects. In view of the regression results, the explanatory power of the model are made using the GMM is relatively low ( $R^2 = 0.032$ ). Of all the variables introduced, the number of owners and tangibility and rentability are significant at 10% level. The tangibility is always positively correlated with leverage, and all coefficients are significant at the 5% level of significance.

This result supports the prediction of the trade-off theory that the debt capacity increases with the proportion of tangible assets on the balance sheet. Under the GMM we retain *H1*, *H3* and *H4*.

Under the static model we retain the assumption supporting the trade-off dictating that more cash flow the firm has the more debt it will generate.

Dispersed ownership leads to more debt funding. Financial distress facing business start-up of our example due to the choice of period study of financial crisis 2007 could explain more the legitimacy use of trade-off theory. Trade-off theory works well within firms that have room for growth and expansion.

The panel data analysis introducing specific fixed effect of each company in terms of debt, allowed us a change in the explanatory power of the model. The adjusted determination coefficient increased from 0.03 to 0.54. In fact, rentability is positively related to leverage and significant at 10% level. We retain then H1.

H2 under which growth opportunity is negatively correlated to debts funding of business start-up is retained only in dynamic model do to some patterns of growth for services activity in dynamic model.

Random effect analyses the heterogeneity between entrepreneurs. Tangibility and owners remain the main significant variables.

We retain under the random effect that ownership concentration is positively related to debt funding and H4 under which ownership dispersion leads to more debts funding is rejected.

## 5. Conclusions

The present study analyzes the power explication of the trade off theory in presence of ownership concentration in the context of business start-up.

According to the first model, the results show that asset structure and ownership structure are the main predictors of the level of indebtedness of business start-up. The study use the specific fixed effects allowed us to improve the explanatory power of this model.

According to the trade-off theory, highly profitable business with stable and tangible assets tend to have higher target gearing ratios as their assets are relatively safe.

There is the limit of agency problems of dispersed ownership. Under the second model, there is a dynamic behavior in the start-up context. This is consistent with the predictions of Fama and French (2002) and Shyam Sunder and Myers (1999). According to this result, start-up firms adjust slowly to target ratio.

Our results point to a significant financial growth pattern in the use of debt. Although the proportion of owner's equity in total capital injections decreases over time, the annual balance of owner's equity increases (suggesting that owners use retained earnings to increase their ownership stake in the firm). Firms owned by two or more owners tend to inject more equity (especially outside equity).

In providing the aforementioned findings, we contribute to the current stream of literature in three important ways. First, our results provide insights into the use of the trade off theory in the static and dynamic model to explain the capital injections in startup businesses: the static trade off theory is not convenient and the dynamic trade off we find a slow adjustment cost to debt ratio. Ownership is positively correlated to debt funding in the dynamic model.

Ownership structure could resolve this debt limits and have an effect on dynamic adjustment.

Second, this article builds upon and contributes to the existing body of work carried out on small business financing in the startup year.

Studying his dynamic debt funding could be more significant at a developed stage.

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**Table 1**

This table presents the key results of estimations of the static mode. It reports the results of estimating equation with GMM, fixed effect (heterogeneity between start-up) and random effect (heterogeneity of entrepreneur) panel data estimator for 200 business start-up for the period 2006-2010.

|                                                                                      | GMM                        | Static Model         |                        |
|--------------------------------------------------------------------------------------|----------------------------|----------------------|------------------------|
|                                                                                      |                            | Fixed                | Random                 |
| Constant                                                                             | 0.008302<br>(0.0769)       | 0.085026<br>(0.31)   | 0.008302<br>(0.08)     |
| RENTABILITY                                                                          | -0.016269 *<br>(-1.535660) | 0.002987*<br>(1.864) | 0.000948<br>(0.64)     |
| GROWTH                                                                               | 0.029664<br>(.989583)      | 0.002775<br>(0.445)  | -0.001904<br>(-0.58)   |
| TANGIBILITY                                                                          | 0.023543<br>(1.529167)*    | 0.012917<br>(0.594)  | 0.017166**<br>(2.0005) |
| OWNERS                                                                               | -0.010977<br>(-0.166927)*  | 0.022774<br>(0.436)  | 0.039528<br>(1.531)*   |
| R <sup>2</sup>                                                                       | 0.032414                   | 0.547692             | 0.032414               |
| Fischer Test                                                                         | 1.649883                   | 0.851722             | 1.649883               |
| Prob (Fischer)                                                                       | 0.163273                   | 0.789662             | 0.163273               |
| Haussman test                                                                        |                            |                      | 2.4123                 |
| *** Significant at 1% level, **significant at 5% level et * significant at 10% level |                            |                      |                        |

**Table 2**

This table displays results of estimations of the dynamic panel estimation (Arellano and Bond) for 200 business start-up. We use the lagged variable 'LEVERAGE (-1)' and so we demonstrate through the dynamic regression how leverage depends on the lagged dependent variable that effects the cost of adjustment.

| Dynamic panel                                                                        |                          |
|--------------------------------------------------------------------------------------|--------------------------|
| LEVERAGE (-1)                                                                        | 0.015371<br>(0.079392)   |
| RENTABILITY                                                                          | 0.043831<br>(2.276213)** |
| GROWTH                                                                               | -1.355029<br>(1.009771)  |
| OWNERS                                                                               | 0.036102*<br>(2.311280)  |
| TANGIBILITY                                                                          | 0.018714<br>(2.159)***   |
| Instrument Rank                                                                      | 6                        |
| Sargan Test                                                                          | 1.792096                 |
| *** Significant at 1% level, **significant at 5% level et * significant at 10% level |                          |

Value in parenthesis is (t student)

**Appendix I: Variables definition**

This table presents the different measures of dependent and independent variables.

| <b>Variable Name</b>                | <b>Definition</b>                                                                 |
|-------------------------------------|-----------------------------------------------------------------------------------|
| Total debt ratio (LEVERAGE)         | total liabilities/total assets                                                    |
| Profitability (RENTABILITY)         | Return on asset: Earnings before interests and depreciation                       |
| Tangibility of assets (TANGIBILITY) | Total fixed assets / Total assets                                                 |
| Growth opportunities (GROWTH)       | Ratio of capital expenditures to total assets                                     |
| <b>OWNERS</b>                       | Number of external owners besides the principal entrepreneur of business start-up |

**Appendix II Descriptive statistics of variable**

This table presents the descriptive statistics of dependent and independent variables.

|              | LEVRAGE  | OWNERS   | RENTABILITE | TANGIBILITY | GROWTH    |
|--------------|----------|----------|-------------|-------------|-----------|
| Mean         | 0.243122 | 1.717822 | 0.639295    | 10.19849    | 1.472202  |
| Median       | 0.139553 | 2.000000 | 1.094905    | 10.00000    | 0.000000  |
| Maximum      | 1.000000 | 5.000000 | 0.192       | 20.00000    | 3.60000   |
| Minimum      | 0.000000 | 1.000000 | 0.000000    | 1.609438    | -1.000000 |
| Std. Dev.    | 0.313551 | 0.900292 | 1.573081    | 1.408404    | 1.438241  |
| Observations | 202      | 202      | 202         | 202         | 202       |

**Appendix III: Matrix Correlation**

This table presents the matrix correlation between the dependent and independent variables

|             | LEVRAGE   | OWNERS    | RENTABILITY | TANGIBILITY | GROWTH    |
|-------------|-----------|-----------|-------------|-------------|-----------|
| LEVRAGE     | 1.000000  | 0.109470  | -0.051124   | 0.125563    | -0.037174 |
| OWNERS      | 0.109470  | 1.000000  | -0.044830   | 0.058171    | -0.056113 |
| RENTABILITY | 0.051124  | 0.044830  | 1.000000    | 0.010873    | -0.004063 |
| TANGIBILITY | 0.125563  | -0.058171 | 0.010873    | 1.000000    | -0.030745 |
| GROWTH      | -0.037174 | -0.056113 | -0.004063   | -0.030745   | 1.000000  |