The Determinants of the Financing Decision: A panel Data Study of Listed Firm in Malaysian Stock Exchange (2005-2016)

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Abstract. The purpose of this study is to investigate the impact of some determinants on financing decision, which affect the firm’s market value, since the primary objective of the financial management in the firms is to maximize its value in the financial market. Thus, before making any financial decision, we should know its influence on the value of the firm. To achieve the purpose mentioned above, the Malaysian companies which are listed in Malaysia stock exchange were selected, over the period 2005-2016. In this study, the data was collected using Thomson Reuter’s financial DataStream, to retrieve global financial data. This data collected was sorted, cleaned and organized using stata.14. Through appropriate statistical tools, which included descriptive statistics and the regression model.

Keywords. Corporate finance, Financing decision, Financial structure, Leverage, Firm’s market value.

JEL. G32, G33.

Highlights

* The study aims to examining the several literature about financial structure choice, also, the demonstration of the fundamental contributions of the theorem of Franco Modigliani and Merton Miller incorporate finance in 1958.
* Our interest is to determine whether either “relevance of financing decision” or “irrelevance decision” theory explains the financing choice.
* The effectiveness of “Economic profitability, Firm’s size, Firm’s growth rate, Liquidity, Firm’s age, Stock performance, Tangibility, Business Risk” on firm’s financial structure choice. In which all previous factors have an effect on financing decision-making, and thereby, the market value of the firms in Malaysia over the period 2005-2016.

Summary

Firm-specific factors like the distance from target leverage and observed leverage, size, growth and profitability are identified as the most-cited factors influencing the speed of adjustment to target leverage.

Before taking up the main problematic, let us digress to discuss the questions of evaluation of firms in the stock market first. Before asking what the price for a given security should be, let us stop to explain how the price comes to be what it is. In other words, we must link the firm’s price with its decisions-making by the

† This summary depends on the doctoral thesis which was advisory of Prof. Dr. Yahiaoui Moufida, in economics & management Sciences Institute, Department of Management, in Biskra University in Algeria. The original language is Arabic.

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firm’s stakeholders, that's why the investment is most successful when it is most businesslike, under “the theory of investment value”.

The cost of capital in firms is simply the rate of interest on bonds; the firm’s managers acting rationally, will tend the investment decision to the point where the marginal yield on tangible assets is equal to the market rate of interest, where under of two goals of rational decision-making, namely: the maximization of profits and the maximization of market value.

The special research of Merton Miller got his Nobel in 1990, sharing it with Franco Modigliani, who had received the Nobel in 1985. Their “M & M theorem” offers a way to the valuation of firms.

The basic theorem of M & M demonstrates that in the absence of taxes, bankruptcy costs, agency costs, and asymmetric information, and in an efficient market, the value of a firm is unaffected by the firm’s financial structure. Since the value of the firm depends neither on its dividend policy nor its financing decision, the Modigliani–Miller theorem is often called: “the capital structure irrelevance principle”. But, the influence of financial structure on firm’s value, based firstly on the determinants of the financing decision, in which we can ask, is there an impact of the financing decision on the firm’s market value? If, yes, which factors affect the choice of this decision?

Previous literature has tried to answer this question, there several answers that have emerged over time, the oldest theory in literature, with regard to firm’s capital structure, is the Theorem of the fundamental nature of debt versus equity.

The main problem, coming up frequently in practical business, is the valuation of the firms such as the future cash flows are somewhat risky, the usual way to compensate for this uncertainty is to apply an interest rate which is higher than the riskless rate of return corresponding to the rate of return of government bonds. It is the case when the investment is most successful, if it is most businesslike. Also, the challenges that face the investors in a company is that you cannot assess its value, based upon the assumption that the managers in the company will take rational actions: make good investments, finance them with the right financial structure (debt or equity) and return unneeded cash to stockholders.

Modigliani and miller explain the Theorem of the optimal financial structure with well-functioning markets, neutral taxes, and rational investors, who can ‘undo’ the corporate financial structure by holding positive or negative amounts of debt, the market value of the firm’s debt and equity depends only on the income stream generated by its assets. It follows, in particular, that the firm’s value should not be affected by the share of debt in its financial structure or by what will be done with the returns paid out as dividends or reinvested profitably.

Most models in economics and finance that deal with decision making under uncertainty and asset pricing rely on the Vonneuman and Morgenstern (1944). Investors make decisions based on change of wealth rather than on total wealthy, also, maximizing the expectations of a value function V(x), where x stand for the change in wealthy.

Our study based on several Hypotheses, as shown:

H₁: There is a negative and a significant relationship between the financial leverageand the profitability in industrial firms listed in Malaysia Stock Exchange Market;

H₂: There is a negative and a significant relationship between the financial leverage and the tangibility in industrial firms listed in Malaysia Stock Exchange Market;

ter, 3(4), S. Delouf, p.668-676.
H$_3$: There is a negative and a significant relationship between the financial leverage and the firm’s growth in industrial firms listed in Malaysia Stock Exchange Market;

H$_4$: There is a positive and a significant relationship between the financial leverage and the firm’s size in industrial firms listed in Malaysia Stock Exchange Market;

H$_5$: There is a negative and a significant relationship between the financial leverage and the liquidity in industrial firms listed in Malaysia Stock Exchange Market;

H$_6$: There is a positive and a significant relationship between the financial leverage and the firm’s age in industrial firms listed in Malaysia Stock Exchange Market;

H$_7$: There is a positive and a significant relationship between the financial leverage and the stock performance in industrial firms listed in Malaysia Stock Exchange Market;

H$_8$: There is a positive and a significant relationship between the financial leverage and the firm’s size in industrial firms listed in Malaysia Stock Exchange Market;

In order to determine the relationship between the financial leverage as the dependent variable and each of the economic profitability, firm’s size, firm’s growth rate, liquidity, firm’s age, tangibility, business risk, stock performance ratio, are used as independent variables. The expected model is presented by the formula:

$$
Lev = \alpha + \beta_1 \text{Prof} + \beta_2 \text{Size} + \beta_3 \text{Grow} + \beta_4 \text{Lqdt} + \beta_5 \text{Tngb} + \beta_6 \text{Shpp} + \beta_7 \text{BusR} + \mu
$$

(1)

Where; Lev: Financial leverage, $\beta_1$,$\beta_2$,$\beta_3$,$\beta_4$,$\beta_5$,$\beta_6$,$\beta_7$, $\mu$: Coefficients, $\alpha$, $\mu$: Intercepts, Size: Firm’s size, Prof: Economic profitability, Grow: Firm’s growth rate, Lqdt: Liquidity, Age: Firm’s age, Tngb: Tangibility, Shpp: Stock performance ratio, BusR: Business Risk. The summaries’ variable of our study is:

<table>
<thead>
<tr>
<th>Table 1. Variables of the sample-study</th>
</tr>
</thead>
<tbody>
<tr>
<td>Variables</td>
</tr>
<tr>
<td>---------------------------------------</td>
</tr>
<tr>
<td>Financial leverage</td>
</tr>
<tr>
<td>Firm’s growth rate</td>
</tr>
<tr>
<td>Liquidity</td>
</tr>
<tr>
<td>Tangibility</td>
</tr>
</tbody>
</table>

Source: The description of the variable in column 4 in Table 1. Above is taken from Thomson Reuters (2015), World scope database: data definitions guide: Issue 14.3.
Results

It is well known that the mixture of financial structure varies substantially across some factors, such as: the Economic profitability, Firm's size, Firm's growth rate, Liquidity, Firm's age, Tangibility, Business Risk Stock performance ratio.

The Panel data is chosen when you study several variables about Different firms over a big period of time. In our research, we use a Panel dataset compiled from the financial statements of 406 Malaysian firms listed in stock market of Malaysia, during the period of 12 years, from 2005 to 2016, with a number of observations of 4872. We summarize the sample-data in the Table 2 below:

Table 2. Set data as Panel data

<table>
<thead>
<tr>
<th>ID</th>
<th>time</th>
<th>Lev</th>
<th>PROF</th>
<th>Age</th>
<th>SHDR</th>
</tr>
</thead>
<tbody>
<tr>
<td>4872</td>
<td>2005</td>
<td>19.896</td>
<td>5.607</td>
<td>14.146</td>
<td>12.674</td>
</tr>
<tr>
<td>4873</td>
<td>2008</td>
<td>19.896</td>
<td>5.607</td>
<td>14.146</td>
<td>12.674</td>
</tr>
<tr>
<td>4874</td>
<td>2010</td>
<td>19.896</td>
<td>5.607</td>
<td>14.146</td>
<td>12.674</td>
</tr>
<tr>
<td>4875</td>
<td>2012</td>
<td>19.896</td>
<td>5.607</td>
<td>14.146</td>
<td>12.674</td>
</tr>
<tr>
<td>4876</td>
<td>2014</td>
<td>19.896</td>
<td>5.607</td>
<td>14.146</td>
<td>12.674</td>
</tr>
<tr>
<td>4877</td>
<td>2016</td>
<td>19.896</td>
<td>5.607</td>
<td>14.146</td>
<td>12.674</td>
</tr>
</tbody>
</table>

The Panel data is chosen when you study several variables about Different firms over a big period of time. In our research, we use a Panel dataset compiled from the financial statements of 406 Malaysian firms listed in stock market of Malaysia, during the period of 12 years, from 2005 to 2016, with a number of observations of 4872. We summarize the sample-data in the Table 2 below:

Table 3. Descriptive statistics

Table. 3 shows the descriptive statistics to each of the variables used in the study, concerning the mean, standard deviation, and the range (Min to Max), according to the variables of the study, during the period of 2005 to 2016.

The mean value for Lev1 is 19.896 with a range of 0 to 23.221, indicating that most of the firms based on internal sources of finance with a small amount of debts. So, most of firm are not highly levered, in which, the Most of these firms are less risky, because the increase in borrowing lead to higher business risk. The mean of BUSR is negative about -1.82 with a range of -336.923 to 444.25, which means that the business Risk in the sampling firms are very low.

The mean value for Size is 12.674 with a range of 8.063 to 18.578, means that the most of the sampling units are big firms, which underlines the direction of the firm to the internal financing rather than borrowing, and also, the firms have a suitable level of profitability, This is clearly evident through the mean value for Prof, which is 5.607 with a range of -224.8 to 127.71. Add to this, the mean of the variable LQDT which equal to 282.77 suggesting that most of firms have an acceptable level of liquidity, that are used for internal financing institution.
Generally, the majority of the study sample enjoyed a comfortable and positive financial status, through a considerable levels of its financial indices, such as: profitability, growth, liquidity, low business risk, which are mainly affect the financing decision concerning the choice of the financial structure, including maximizing the firm’s market value and the owner’s wealth value.

We use the Stata14.0 to find the equations in three variations: the overall variation measure the change between the units over the time, but the within variation measure the change in one units over the time (fixed effects), and the between variation measure the variance between the firm’s data in a fixed time.

In our research, the overall and within variation are calculated over 4872 (12 x 406) firms-years of data, the between variation, is calculated over 406 firms, and the average number of years a firm was observed in the data is 12.

**Table 4. Parameter Estimates**

| lev1  | Coef. | Std. Err. | t | P>|z| | 95% Conf. Interval |
|---|---|---|---|---|---|
| PROD | -0.2605104 | 0.0263552 | -14.40 | 0.000 | -0.2850069 | -0.2360139 |
| Age  | 0.7205059 | 0.0549233 | 13.04 | 0.000 | 0.6141174 | 0.8268945 |
| SIZE | 0.9877706 | 0.0667428 | 14.99 | 0.000 | 0.8577706 | 1.1177706 |
| GR80 | 0.2078099 | 0.0229266 | 9.13 | 0.000 | 0.1624369 | 0.2531829 |
| TMB1 | 0.1210628 | 0.0122955 | 9.74 | 0.000 | 0.0968168 | 0.1453088 |
| BODG | 1.000027 | 0.001449 | 63.64 | 0.000 | 0.9971384 | 1.0029164 |
| LQDT | -0.103722 | 0.009427 | -11.02 | 0.000 | -0.112057 | -0.095387 |
| SHPP | -0.016893 | 0.003699 | -4.62 | 0.000 | -0.024192 | -0.009603 |
| _cons | -54.01520 | 4.755116 | -7.21 | 0.000 | -53.35044 | -54.68005 |

If a subject were to increase his Prof score by one point, his ordered log-odds of being in a higher Lev1 category would decrease by 0.26 while the other variables in the model are held constant.

_**cons**: This is used to differentiate low Lev1 from middle and high Lev1, when values of the predictor variables are evaluated at zero. Subjects that had a value of 34.313 or less on the underlying latent variable that gave rise to our Lev1, variable would be classified as low Lev1, and had zero Prof, Age... Shpp test scores.

_Std. Err.:_ These are the standard errors of the individual regression coefficients. They are used in both the calculation of the z test statistic, and the confidence interval of the regression coefficient.

When **P>|z| ≤ 5%** in each variable, the independents variables are statically significant. In our model, all the independent variables are significant and interpreted the dependent variable, With the exception of the Variable BUSR, which his **P>|z| = 0.521 > 5%**.
Table 5. The symbol for standard error, statistical significance:

Table 5. above shows that, generally, mostly firms have \( P>|t| \leq 5\% \) (except variable of (BUSR)) the variable statistically significant, and the independent variable explains very well the dependent variable values.

When Prob > chi\(^2\)\(=0.000 \leq 5\% \), that at least one of the regression coefficients in the model is not equal to zero (Diffs). According to the result shown in table above, it appears that BUSR has no statistical significance, and it does not explain the financial leverage explains (financial structure).

Rho is an explanatory percent of changes in the dependent variable due to the special observed factors for each individual "a". In Table 5. Above, Rho = 0.6715; means that 67.15% of the changes are explained through the private unobserved coefficients of each individual. And the rest is due to the idiosyncratic Errors (quaint, private, and unexplained). In other word, 67.15% of changing in Financial Leverage in the firm's is caused by the variable: Economic profitability, Firm's size, Firm's growth rate, Liquidity, Firm's age, Stock performance, Business Risk. And 32.85% caused by the idiosyncratic.

Table 6. Correlation matrix of the variables

<table>
<thead>
<tr>
<th>lev1</th>
<th>GROP</th>
<th>TNGB</th>
<th>PROF</th>
<th>BUSR</th>
<th>SIZE</th>
<th>LQDT</th>
<th>SHPP</th>
<th>Age</th>
</tr>
</thead>
<tbody>
<tr>
<td>lev1</td>
<td>1.00</td>
<td>.4340</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>GROP</td>
<td>-.115*</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TNGB</td>
<td>.152*</td>
<td>.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PROF</td>
<td>-.236*</td>
<td>.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BUSR</td>
<td>-.038*</td>
<td>.0177</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SIZE</td>
<td>.186*</td>
<td>.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LQDT</td>
<td>-.643*</td>
<td>.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SHPP</td>
<td>-.089*</td>
<td>.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td>-.002</td>
<td>.8767</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Spearman lev1, GROP, TNGB, PROF, BUSR, SIZE, LQDT, SHPP, Age, stats (rho obs p) star (0.05) pw.
The relationship between leverage (Lev1) and tangibility (TANG), while positive as expected, is not strongly significant since r=0.152<0.5. This result is consistent with the findings of Prasad et al. 2003 and Suto, 2003 who found a positively significant relationship for Malaysian firms. When collaterals play an important role in raising debt.

The relationship between profitability (PROF) and leverage is found to be negative as postulated, in the Malaysian firms, according to the predictions of the pecking order theory, showing that firms prefer to use internal sources of funding when profits are high. This is in contrast with most previous studies analyzing only a limited set of variables, such as Rajan and Zingales, 1995, and Zoppa and McMahon, 2002.

Firm size (SIZE) has a positively significant impact on leverage, where firms receive government support and thus face less risk of financial distress whatever their size. This finding is consistent to Booth et al. 2001 Pandey 2001 and Prasad et al. 2003, confirming that larger firms tend to have better borrowing capacity relative to smaller firms.

As expected, the impact of growth opportunity (Grow) on leverage is negative, but it is significant only for firm’s growth use less debt. It is also consistent with most previous studies on the same region, such as, Zoppa and McMahon, 2002, except Booth et al. 2001 who found a positive relationship for Thai and Malaysian firms.

Similarly, liquidity (LIQU) and share price performance (SHPP), and firm’s age (Age) have a negative and significant relationship with leverage in all firms. Both findings confirm the preference of equity to debt when share prices are rising.

Conclusion
A higher debt-to-equity ratio leads to a higher required return on equity, because of the higher risk involved for equity-holders in a firm with debt. In the study which applied in 406 Malaysian firms during the period of 2005-2016, with a 10 tested variables. Concerning the effectiveness of the determinants of capital structure, some research suggests that the Firm’s growth rate may differ according to their size, because larger firms based on economies of scale, also, it have less potential business risk; the firm’s size should be positively related to the financial leverage.

In summary, the main factors affect the firm’s financial structure; in which each of “Economic profitability, Firm's growth, Liquidity, Firm’s age, Stock performance, and Business Risk” have a negative relationship with a firm’s leverage. But the Firm's size, and Tangibility have a positive relationship with a leverage level.

The estimates presented in Table.6, for the whole sample period show some similarities across firms. Economic profitability, Firm's growth, Liquidity, Firm’s age, Stock performance, and Business Risk, appears to negative and significantly influence in firm’s leverage. But the Firm's size, and Tangibility have a positive relationship with a leverage level, consistently with the stated hypotheses.
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