CHAPTER 2

LITERATURE REVIEW

2.1 Capital Structure Theories

Modigliani and Miller (1958) or M & M, investigated the capital structure decision relevance to the company's market value. They argue that in the assumption of perfect and symmetric market, company's market value is dependent on income generated from its assets and independent from their financing decision. Under M & M theory, company's financing decision and dividend policy are deemed to have no impact on company's market value.

$$V_L\ (M\ \&\ M) = V_U$$

Where:

V_L = Market Value of Leverage Firms (Firms with both equity and debt)

V_U = Market Value of Unleverage Firms (Firms with all financing are made on equity)

The assumption of perfect and symmetric market are:

a. No taxes
b. No transaction and bankruptcy costs
c. Symmetric information, in which managers and investors have the same information
d. No difference on borrowing cost

Modigliani and Miller Theory is not applicable to the real finance world because tax, bankruptcy cost, different cost on borrowing, and assymetric information do

exist in the market. However, the needs to understand the basic knowledge of capital structure studied by Modigliani and Miller is necessary for further findings of capital structure.

Trade Off Theory and Pecking Order Theory were developed to extend the topic of capital structure. Static Trade Off Theory (STT) studies the same topic but adjust the situation to the real finance world by the acknowledgement of tax. The Theory supports debt financing up into the optimal capital structure due to the tax benefit from interest payment.

At time the company prefer debt financing (leverage), since interest is tax deductible, the interest payment from the debt will decrease the Income Before Taxes and henceforth the company will be required to pay less tax. In this situation, the company retained more fund to be either reinvested in the company or to be paid to investors, rather than to pay it out as tax to the government.

However, although take into debt decision is beneficial due to tax benefit, there is another cost a company faces as a consequence of a higher debt, financial disstress cost. When a company has too many debts, the risk that the company will not be able to pay back its loan increases. Cost of financial distress threaten to turn over the benefits gained from tax benefits. This is why the theory support debt financing only up until the optimal capital structure.

$$V_L\ (STT) = V_U + Tax\ Benefit$$

Pecking Order Theory by Myers and Majluf (1984) proposed another imperfections in the market that affect the company's market value, which is

asymmetric information. Asymmetric information refers to the condition in which managers have more information than investors.

This theory argues that company should choose to use internal funds first, and if it is not enough, the external financing should focused on debt first before equity issuance. Myers and Majluf believed that when managers (who are deemed to have more information about the company than investors) issue equity, investors think that the firm's market value is overvalued and henceafter the managers are deemed to take advantage of the overvaluation by issuing more equity. Under this theory, equity issuance is believed as a negative signalling to the investors and hence managers should avoid it as long as they can take debt financing.

However, Pecking Order Theory (1984) focuses on the indifference of company's market value from doing debt financing. Agency cost raised from doing debt financing, will in the end offsets the tax benefits generated from its interest payment.

$$V_L\,(POT) = V_U + Tax\ Benefit - Agency\ Cost$$

2.2 Market Timing Theory

In 2002, Baker and Wurgler proposed a modern theory of capital structure known as Market Timing Theory. This theory acknowledged capital structure only as the cumulative outcome of past attempts to time the market (Baker & Wurgler, 2002). This theory is in line with Modigliani & Miller and Pecking Order Theory that do not put effort in maintaining optimal capital structure. Baker and Wurgler believed that the focus of financing decision is not in maintaining the optimal capital structure but in timing the appropriate and beneficial financing decision.

According to market timing theory, managers should determine the appropriate financing decision in the best timing that would generates as much benefits as possible to the company. Managers ought to time the capital issuance that has relatively low cost without regard to the capital structure. They should issue equity when the share prices are overvalued while switch to issue debt when the cost of debt is low. Many evidences reveal that market timing is an important aspect of real financing decision.

2.2.1 Equity Market Timing

Market Timing Theory is widely investigated in the equity sector. Equity Market Timing Theory argues that managers ought to time the shares issuance that generates the most benefits to the company. They ought to issue shares when there is overvaluation of the share price and either buy back shares or issue debt when there is undervaluation of the share price.

In the case of overvaluation, where shares are priced more on the market than its intrinsic value, managers should utilized the condition by issuing shares. In contrast, in the case of undervaluation, managers should take advantage by buying back its shares in the market when they know that the market value is lower than its intrinsic value. After they buy back the shares, the share prices will eventually set back to its intrinsic value and hereafter gains are generated.

Baker and Wurgler (2002) uses Market to Book ratio as a standard measure of determining the over and undervaluation of share price. They argue that Market to Book ratio has negative correlation to leverage. High

Market to Book ratio (overvalued share price) should lead the managers to issue stock instead of debt and thereafter decrease the debt financing. Beside Market to Book ratio, Baker and Wurgler also acknowledge ratio of PPE/Assets and EBITDA/Assets that will influence the company's leverage.

In their researches, Welsch (2004), Kayhan and Titman (2004), Lemmon et al. (2005), and Huang and Ritter (2005) found that on the sample of IPO (Initial Public Offering) firms, the persistence effect of Market Timing Theory remained strong even up to 10-20 years.

Contradict to them, Alti (2003), Hovakimian (2005), and Leary and Robert (2005) investigated the persistence effect of Market Timing Theory with nearly the same samples but with different method. Their findings show that there are few years in which persistence effect is missing after the IPO. Using the same OLS model, Alti (2003) explored the persistence effect by encompassing the elements of hot and cold IPO market. Hovakimian (2005) puts more variables that affect leverage such as size, tangibility and profitability. Leary and Robert (2005) used GLS model that is certainly more robust than OLS model from Baker and Wurgler.

Setyawan and Frensidy (2012) examined the financial performance of Indonesian companies that were going public in 2008 and 2009. Their paper correlates Leverage with Market to Book Ratio, Property Plant Equipment, After Tax Income and Total Assets. They use OLS model from Baker and Wurgler and found that Market to Book ratio and property

plant equipment have negative correlation with leverage. This research supports Market Timing Theory with evidences.

2.3 Bond Market Timing

As market timing theory is about issuing capital at the right time that enables the company to raise money in a cheaply manner, bond market timing refers to the practice of issuing bond when the interest rate is low. In such condition, the bond issuers gain not only from the cheap coupon payment along the bond maturity, but also being able to sell the bond at high market value. This can be understood by looking at the inverse correlation between interest rate and bond price (assumed that coupon payment has just been made) (Bodie, Kane and Marcus, 2011, p. 475):

$$P = C \times \frac{1}{r}\left[1 - \frac{1}{(1+r)^T}\right] + F \times \frac{1}{(1+r)^T}$$

Where:

P = Bond Market Price

C = Coupon interest payment based on contractual interest rate

R = Market interest rate

T = Number of payments

F = Face value of the bonds at the end of maturity

Antoniou, Zhao, and Zhou (2009) found that CFOs do indeed try to time the debt issuance by observing the condition of credit market at that relevant time (Frank & Nezafat, 2010). This evidence supports the finding of survey undertaken by Graham and Harvey (2001) that CFOs consider interest rate as the most

influencing factors in the pursue of issuing bonds. They are willing to issue bonds at the time the cost of debt (interest rate) is relatively low.

Interest rate in the market is the most influential benchmark to the coupon rate determination of corporate bonds. Since coupon rate determines the regular payment that will be made by the bond issuer throughout the life of the bonds until its maturity date, it is the cost of companies seeking funds through bond issuance. Low government bond rate will eventually enable the companies to issue bond at a low cost.

Some literatures of debt market timing investigated the ability of managers in timing the bond issuance with regards to the selection of appropriate bond maturity. Graham and Harvey (2001) found that market timing is the third most crucial determinant of the choices of long term or short term debt.

Based on the literatures, debt issuance relies heavily on the past and future interest rate. Forward looking timing is the practice of measuring the appropriate debt maturity by relying on managers' interest rate forecasting ability. The finding from Graham and Harvey's research (2001) supports forward looking timing. They believe that managers will be likely to issue short term bond either when they believe that short term interest rate is low compared to long term interest rate or when they believe the interest rates is going to decline in the future.

Support the finding of Graham and Harvey, other researchers such as Bancel and Mittoo (2004), Baker, Greenwood, and Wurgler (2002), Henderson, Jegadeesh, and Weisbach (2006) believed that managers issue bonds at the time they believed that the future interest rates is going to increase (forward looking timing) (Comer

et al., 2012). At such prediction, managers try to time the debt issuance by issuing long term debt prior the increase of interest rate in order to gain benefits from the predicted situation.

Another argument of forward looking timing is presented by Taggart (1985). He correlates forecasted inflation, tax deduction and debt financing to understand the consideration of managers that issuing bonds. He argues that at the time the managers are certain that there will be inflation in the future, they will be likely to issue bonds to avoid higher cost of debt in the future. The rationality behind this negative correlation between inflation and interest rate is explained by the monetary policy imposed by government. In macroeconomic study, this policy is intended to keep the economy in balance. Government will tighten the interest rate (increase the interest rate) to avert inflation and lease interest rate (lowering the interest rate) to spur inflation.

Contradict to forward looking timing; Barry, Mann, Mihov, and Rodriguez (2005) argue that managers cannot successfully time future interest rates (Frank & Nezafat, 2010). Thus, managers' guidance in making debt financing is by looking at past interest rates (backward looking). It is considered as good time to issue debt when the current interest rate is low compared to the historical rate.

On the other side, Barry et al. (2009) is the first who observed the influence of interest rate fluctuations to the determination of issuing whether floating or fixed rate debt. Unlike previous researches that seek to explore debt market timing by observing financial factors affecting leverage, Boney, Comer and Kelly (2005),

Frank and Nezafat (2010), Bougatef and Chichti (2011), and Barry et al. (2009) investigated whether managers had successfully time their debt issuance.

Boney et al. (2005) investigated whether Morningstar Principia Pro CD's high quality bond mutual funds during 1994-2003 engaged in market timing between cash and bond and across maturities. Besides, they also examine the market timing skills of the samples. The results show that bond mutual funds do engage in market timing but they have perverse market timing ability between bonds and cash and also across bonds maturity.

Contradict to Barry et al. (2009) that found no evidence of managers' capabilities in timing bonds issuance, Bougatef and Chichti (2011) found that French and Tunisian firms' managers did issue bonds in time of low interest rate. However, while Tunisian firms' were able to predict increase of interest rate and hence issue bonds before interest rate increases, French firms failed to do so.

Frank and Nezafat (2010) examined US companies' ability to time the bond issuance by using bootstrapping method. They compares US corporate bond actual issuance date with the date that is considered as the best date to issue bond in the formulated counterfactual set. The counterfactual set is the 5-working days window made within the actual bond issuing date. Companies with perfect debt market timing ability are expected to issue bond at the date with the lowest interest rate within the windows. The result discovered no market timing ability of corporate's bond issuancea over one week and one month window, but attain some borderline evidence over one quarter period (Frank & Nezafat, 2010).

As debt market timing is less investigated compared to equity market timing, there is still much to be explored. Additionally, until this time, the writer has not yet find a single research about debt market timing ability on Indonesian context. To fill the gap, this paper is going to perform an empirical study of Credit Market Timing that has previously been conducted by Frank and Nezafat on the United Stated firms. The research will be adjusted to Indonesian corporate bond situation and retested in Indonesian context.

The objective of this research focused on investigating the ability of Indonesian public listed companies' managers to do bond market timing that gives the most beneficial return to the company. The researcher is going to use the same method as Frank and Nezafat that construct a counterfactual set through Bootstrapping. This method is applied to this research for the purpose of measuring its effectiveness and validity in testing managers' debt market timing ability in Indonesian context.

To be the first to research debt market timing ability in Indonesia, this paper can bring about a fresh topic that can be explored more in the future and be beneficial to companies that have interest on issuing bonds.

The summary of some literature reviews found and selected by the researcher are depicted in the following table:

Tabel 2.1 Literature Reviews

Year	Glimpse of Literature Reviews
1958	Modigliani & Miller Theory: Under perfect and asymmetric market, Capital Structure Decision is irrelevant to the company's market value
	Trade Off Theory: With the acknowledgement of tax, the theory supports companies to take debt financing rather than equity financing up until its optimal debt structure due to the tax benefit from interest payments
1984	Myers introduced Pecking Order Theory: With the acknowledgement of asymmetric information, agency cost raised from debt financing offsets the tax benefit
2001	Graham and Harvey found that interest rate is the most influencing factor affecting companies in issuing debt
2002	Baker & Wurgler introduced Market Timing Theory. The Right Financing Decision should be made according to the market conditions. Market to Book Ratio is used as the proxy of under and overvaluation that consequently affect the financing decision. Market to Book Ratio, PPE/Assets & EBITDA/Asset are deemed to be financial variables affecting leverage
2002	Baker, Greenwood, and Wurgler believed on forward looking debt market timing: Managers issue bonds when they believed future interest rate is going to increase
2003	Alti examined the persistent effect of IPO companies by encompassing the elements of hot and cold IPO market.
2004-2005	Welsch, Kayhan & Titman, Lemmon et al., and Huang and Ritter examined the persistent effect of Market Timing on IPO companies. Evidence shows that the effect remained strong even up until 10-20 years
2005	Barry, Mann, Mihov, and Rodriguez argued that managers cannot predict interest rate. Thus should look at past interest rate to determine the right time to issue debt (backward looking market timing)
2005	Hovakimian adds variables that affect leverage: size, tangibility and profitability
2005	Leary and Robert used more robust model, GLS, compared to Baker & Wurgler's OLS model
2005	Boney, Comer and Kelly were the first to investigate the debt market timing ability of high quality bond funds between bond and cash, and also across bond maturity
2009	Antoniou, Zhao, and Zhou found that CFOs try to time their debt issuances relative to the interest rate
2009	Barry, Mann, Mihov, and Rodriguez observed the influence of interest rate fluctuations to the floating or fixed rate debt issuance decision

Table 2.1 Literature Reviews (continued)

Year	Glimpse of Literature Reviews
2010	Frank and Nezafat examined US companies' ability to do credit market timing in attempts to do debt market timing. They used bootstrapp and time series analysis. The capabilities are analyzed in a week, month, and quarter window.
2011	Bougatef and Chichti investigated debt market timing ability of Tunisian & French firms. Its finding shows that Tunisian firms' are able to predict increase of interest rate and hence issue bonds before the raise, while French firms fail to do so. (Support Forward Looking Market Timing).
2012	Setyawan & Frensidy investigated the correlation between leverage with M/B Ratio, PPE, after tax income and total assets in Indonesian IPO firms

2.4 Corporate Bonds in Indonesia

One of the commonly traded securities in the capital market is bond. Bond is a certificate of debt issued by government or corporation that pledged a payment of the original investment at the bonds maturiy plus specific regular interest payment up until the bonds maturity date.

There are two types of bonds, government bonds and corporate bonds. Bonds issued by The Government of Republic Indonesia are called government bonds, while corporate bonds refer to the bonds issued by either stated-owned entities (BUMN or Badan Umum Milik Negara) or private companies. In Indonesia, government bonds are in the form of Treasury Bond (T-Bond) & SUKUK (Surat Berharga Syariah Negara) or Treasury Bills (Surat Perbendaharaan Negara or SPN), Islamic Treasury Bill (Surat Perbendaharaan Negara-Syariah), SBI (Sertifikat Bank Indonesia), Commercial Paper and Repurchase Agreement (Asian Development Bank (ADB) Team, 2012).

Government bond differs from corporate bond in terms of liquidity, rate offered and also trading volume. Government bond is more liquid compare to corporate bond. Indonesian government bonds were traded more, but offer relatively less rate than corporate bonds (Tanaga, 2008).

Private companies ordinarily issue bonds for financing their expansion or to meet its short or long term financial needs. Investors' financial power to pay a large sum of the bond price enables the managers to attain large sum of money in a relatively fast period.

Actually, private companies can do debt financing by either borrowing money from banks or issuing debt securities. But, the prospect offered by issuing debt securities such as bond is much more promising than take loans from banks.

As an intermediary, banks pool fund from investors in the form of time deposits and allocate the funds to give loans to the companies who need funds. Spread is the benefit a bank gets as a consequence of the difference between rate charged to those need funds and rate offered to depositors. Assume that in Indonesia, bank offers 5% interest on average to the depositors and charged 12% loan rate to the corporate borrowers in 2012. In this case, bank gets 7% spread benefit. The procedure is plotted in the below diagram:

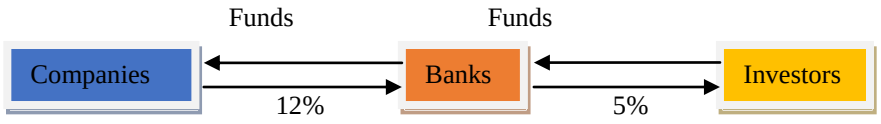

Figure 2.1 The Procedure of Bank Loan and Bank Deposit

When a company issues debt securities such as bonds (generally known as corporate bonds), the company make a debt agreement directly to the investors.

Since the mechanism does not involve intermediary, both bond issuer and investors can deal in a profitable lower rate. Assume in Indonesia, corporate bonds offer 10% coupon on average. It allows company to borrow money at lower cost of debt than 12% bank loans. On the other hand investors also get higher payback interest rate than 5% deposit rate offered by banks (Indonomics, 2012). The mechanism of corporate bonds is plotted in the below diagram:

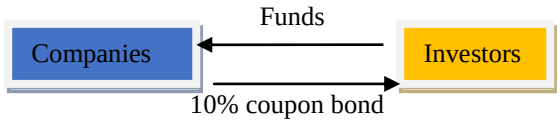

Figure 2.2 The Procedure of Corporate Bonds

From the investors benefit perspective, corporate bonds are indeed more profitable compared to bank deposit but also enforce them to face greater risk. However, at time the bond's issuer cannot pay the debt in the future, the investors should acquiesce their money. Unlike such case, investors in Indonesia that put their money into the Indonesian bank deposit will be guaranteed by Lembaga Penjamin Simpanan (LPS).

Lembaga Penjamin Simpanan (LPS) insured depositors that has money under 2 billion rupiahs in their bank deposit accounts. Accordingly, if the banks cannot meet its obligation to pay back depositors funds, LPS will still pay back the depositors' money (but only for those whose deposit is under 2 billion rupiahs). Although bank deposits offer low rate, the depositors face lower risk due to the guarantee of not losing their money under certain amount.

With the disclosed benefits and risks, the investors' choice depends on their characteristics, whether they are risk takers or risk averse persons. Risk takers will be more likely to buy corporate bonds, while risk averse investors will stay at a safe but low interest income from bank deposit.

2.4.1 Corporate Bonds Rate Determination

Ibrahim (2008) found that government bond rate and debt to equity ratio have a positive correlation with bond yield, while bonds credit rating and bond issuer's business size have a negative relationship with bond yield.

Due to its higher risk, corporate bond must offer higher rate than government bonds to attract investors. Thereafter, the rise of government bonds rate will eventually increase the bond yield too. Debt to equity ratio represents the ability of the company to pay back its debt through its available capital. Consequently, a bond issuer with low Debt to Equity Ratio is able to impose lower bond yield due its low default risk. That kind of investor can borrow in a lower rate. These two variables have a positive relationship with bonds yield.

Bonds with good credit rating can impose low bond yield due to its low default risk. These companies' good credibility enables them to borrow money with a low interest payment periodically. A larger business compared to a smaller one, can issue corporate debt with lower rate because it is believed to be more capable to meet its debt obligation in the future.

2.4.2 Corporate Bond Issuance in Indonesia

Businesses are commonly raise capital through the selling of securities such as stocks, bonds, notes, debentures, etc. The process of issuing these securities is called an offering. There are two kinds of offering, private and public. Since September 2006, all bond transactions in Indonesia, both Exchange Traded and Over The Counter Transactions, are obliged to be reported to Bapepam-LK (Badan Pengawas Pasar Modal dan Lembaga Keuangan) through stock exchange system no more than 1 hour after the transactions.

A private offering does not obliged the securities' issuers to file a registration statement with the state and federal government. This offering is commonly known as Exchange Traded Funds (ETF). The issuer offers the securities to a limited persons who are well informed about the issuer company.

Unlike private offering, public offering requires much more complicated procedure before it can officially issue the securities to the public. In Indonesia, companies that have intention to do public offering of bonds are subject to regulations made by Bapepam-LK and Indonesian Stock Exchange.

Parties involved in the public bond offering are issuers, investors, intermediaries and custodians. While the issuer of corporate bond is the public listed company, the main holders of corporate bonds (investors) are

Banks and Asset-Pooling Industries (Insurance Companies, Pension Funds and Mutual Funds).

Intermediaries in Indonesian corporate bond issuance are securities companies approved by Bapepam-LK that may act as investment manager, broker dealer or underwriters. An investment manager gives advice regarding the prospective investments. A broker dealer acts as both a broker (agent) that helps handling transactions that are placed on behalf of the client and also as a dealer (principal) that initiates transactions for its brokerage firm. An underwriter is a securities dealer that help the bond issuer to sell the bonds. The mechanism is that the underwriter buy bonds from the issuer and resell it to the investors in a higher price. Custodian in Indonesian corporate bond issuance is KPEI (Kliring Penjaminan Efek Indonesia) for Exchange Traded transactions and KSEI (PT Kustodian Sentral Efek Indonesia) for Over The Counter transactions, who provides clearing and settlement services of the bond issuance.

To be eligible, Indonesian corporate bonds must obtain rating from Credit Rating Agency (CRA) listed by Bapepam-LK before allowed to do public offering. The rating is about CRA's opinion on the ability of the bond issuer to meet its obligation in a timely manner (company rating) and the rating of the debt that is going to be issued (instrument rating). Three listed CRA by Bapepam-LK are PT Fitch Ratings Indonesia, PT Pemeringkat Efek Indonesia (PEFINDO), and PT ICRA Indonesia.

The Public Offering processes of corporate bonds in Indonesia (Asian Development Bank (ADB) Team, 2011):

1. Submission of Registration Statement

The bond issuer is mandated to submit Registration Statement and supporting documents that compromised with Bapepam-LK public offering regulations. Other parties such as underwriters or accountants whose opinion is listed in the statement, along with the issuer, are fully responsible for the registration statement's accuracy and credibility.

2. Submission for Amendment or Additional Information

Issuer should submit the revision or additional information no later than 10 working days after the issuer obtain the amendment request from Bapepam-LK.

3. Publication of Summary Prospectus

After the summary prospectus is completed, with or without the amendment, Bapepam-LK will grant permission to publish the documents. The issuer should publish the summary prospectus in at least one Indonesian-language newspaper within 2 working days.

4. Effective Period of Registration Statement

The Registration Statement is effective after completed the 45 days waiting period from the date of the last amendment requested by Bapepam-LK.

5. Publication of Additional Summary Prospectus

Within one working day after the Registration Statement becomes effective, the issuer is obliged to publish the additional information and effective date in at least one Indonesian-language newspaper. Together with this publication, the issuer has been given the permission to do the public offering.

6. Period of Public Offering, Allotment and Reporting the Public Offering Result

Bapepam-LK Rules No. IX.A.2 on Public Offering Registration Procedure obliged the issuer to do public offering, with or without the assistance of underwriter, within 2 working days after the Registration Statement becomes effective. The allowed public offering period is one working day minimum and five working days maximum.

Bapepam-LK Rules No. IX.A.7 on Responsibilities of Underwriters with Respect to Subscription and Allotment of Securities in a Public Offering should be followed. It obliged the subscription to be made no later than the day of securities delivery. The listing of securities offered should be made no more than one working day after the securities delivery date.

The issuer or underwriter should submit a Report of Public Offering Result along with Allotment Report to Bapepam-LK no later than five working days following the allotment date. Besides, the issuer is obliged to appoint accountant registered with Bapepam-LK to conduct special audit that assures the receipt of funds by the issuer.

7. Shelf Registration

Bapepam-LK Rules No. IX.A.15 on sustainable public offering covers the regulation for shelf registration. Shelf registration is the continuous public offering for bonds that enables the public companies with good performance to be able to conduct public offering of debt securities within a period of time. Shelf Registration period is no longer than 2 years upon the effectivity of Registration Statement.