



The determinants of capital structure of Palestine-listed companies

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Abstract

Purpose – The purpose of this paper is to examine the relationship between capital structure and debt lifetime among listed companies in Palestine stock market.

Design/methodology/approach – This study investigates firms that have been listed on the Palestine securities exchange (PSE) over a five-year period (2000-2004). In total, 28 companies were listed in PSE since 1999. Only 15 firms working in different economic sectors qualified to be included in the study sample according to the availability and continuity of published financial statements during the period of 2000-2004. Variables used for the analysis include profitability, leverage ratios (total debt (TD), short-term debt (STD) and long-term debt (LTD)), liquidity (LQ), age, asset structure, and firm size and sales growth are also included as control variables. The panel character of the data allows for the use of panel data methodology. Panel data involves the pooling of observations on a cross-section of units over several times.

Findings – The study has shown that the service companies have the highest TD ratio (53.69 percent), followed by industrial companies (50.86 percent), trade companies (34.11 percent) and agriculture companies (24.02 percent). The one way analysis of variance (ANOVA) shows no significant difference in the use of debt, neither total, LTD or STD among companies in the four sectors. Adding to that, ANOVA indicates insignificant differences among the companies in the sample with respect growth opportunities, size, age, tangibility (TAN), and LQ. The correlation analysis has shown that TD is positively and significantly related to TAN, on the country, no significant relationship between the long debt and STD on the one hand and age, growth, LQ, TAN, and size on the other hand.

Originality/value – This paper is the first that employs a new database containing the market and accounting data (from 2000 to 2004). This study will contribute in examining the relationship between capital structure and debt lifetime among listed companies in the Palestine stock market.

Keywords Financial management, Banking, Palestine, Stock exchanges, Capital structure, Debts

Paper type Research paper

Introduction

Over the past 40 years, much of the capital structure research has advanced theoretical models to explain the capital structure pattern and to provide empirical evidence concerning whether the theoretical models have explanatory power when applied to the real business world. The focus of both academic research and practical financial analysis has been on those large corporations with publicly traded debt and equity securities that dominate economic life throughout the developed world.

Although the majority of the capital structure research has focused on understanding the forces that influence corporate financing behavior of the US firms, capital structure research has become increasingly internationalized in recent years, which provides researchers the opportunity to make cross-sectional comparisons between countries and between various industries around the world (Chen, 2004). In particular,



Rajan and Zingales (1995) applied the capital structure models derived from the US setting to firms in the G-7 countries and found that the variables that were found to have correlation with leverage in the USA were also correlated with leverage of firms in other G-7 countries. Wald (1999) examined characteristics of firms that were not similarly correlated with leverage across countries.

Wald (1999) indicated that institutions may significantly influence firms' capital structure decision and that agency and monitoring problems, while existing in every country may create different outcomes. While the majority of the research results has been derived from the experience of developed economies that have many institutional similarities (Hodder and Senbet, 1990; Rajan and Zingales, 1995; Wald, 1999; Ozkan, 2001; Chui *et al.*, 2002; Bevan and Danbolt, 2002), little work has been done to further our knowledge of capital structure within developing countries that have different institutional structures.

The capital structure of listed firms in Palestine is a scientific area that has not yet been explored in Palestinian finance literature. This study is the first empirical study to test the explanatory power of capital structure models in Palestine. Since the aim of this study is to develop some preliminary groundwork that a more detailed evaluation could be based. The following questions are answered in specific through this study:

- Are firm-specific factors correlated with leverage that have been identified in the Western settings also similarly correlated in Palestine?
- Does the institutional structure in Palestine affect Palestinian firms' capital choice decision?
- Do the Western capital structure models have robust explanatory power for Palestinian companies in the Palestinian economy?

Literature review

Modigliani and Miller (1958) in capital structure provided a substantial boost in the development of the theoretical framework within which various theories were about to emerge in the future. Modigliani and Miller (1958) concluded to the broadly known theory of "capital structure irrelevance" where financial leverage does not affect the firm's market value. However, their theory was based on very restrictive assumptions that do not hold in the real world. These assumptions include perfect capital markets, homogenous expectations, no taxes, and no transaction costs. The presence of bankruptcy costs and favorable tax treatment of interest payments lead to the notion of an "optimal" capital structure which maximizes the value of the firm, or, respectively, minimizes its total cost of capital (Brigham and Ehrhardt, 2005).

Modigliani and Miller (1963) reviewed their earlier position by incorporating tax benefits as determinants of the capital structure of firms. The key feature of taxation is that interest is a tax-deductible expense. A firm that pays taxes receives a partially offsetting interest "tax-shield" in the form of lower taxes paid. Along with corporate taxation, researchers were also interested in analyzing the case of personal taxes imposed on individuals (Abor, 2005). Miller (1977), based on the tax legislation of the USA, discerns three tax rates that determine the total value of the firm. These are:

- (1) The corporate tax rate.
- (2) The tax rate imposed on the income of the dividends.
- (3) The tax rate imposed on the income of interest inflows.

According to Miller (1977), the value of the firm depends on the relative level of each tax rate, compared with the other two.

Bankruptcy costs are the cost directly incurred when the perceived probability that the firm will default on financing is greater than zero. The bankruptcy probability increases with debt level since it increases the fear that the company might not be able to generate profits to pay back the interest and the loans (Titman, 1984). The use of debt in capital structure of the firm also leads to agency costs. Agency costs arise as a result of the relationships between shareholders and managers and those between debt-holders and shareholders (Jensen and Meckling, 1976). The need to balance gains and costs of debt financing emerged as a theory known as the static trade-off theory by Myers (1984). It values the company as the value of the firm if unlevered plus the present value of the tax shield minus the present value of bankruptcy and agency costs.

The pecking order hypothesis suggests that firms are willing to sell equity when the market overvalues it (Myers, 1984; Chittenden *et al.*, 1996). This is based on the assumption that managers act in favor of the interest of existing shareholders. As a consequence, they refuse to issue undervalued shares unless the value transfer from "old" to new shareholders is more than offset by the net present value (NPV) of the growth opportunity. This leads to the conclusion that new shares will only be issued at a higher price than that imposed by the real market value of the firm. Therefore, investors interpret the issuance of equity by a firm as signal of overpricing. If external financing is unavoidable, the firm will opt for secured debt as opposed to risky debt and firms will only issue common stocks as a last resort (Abor, 2005). Myers and Majluf (1984) maintain that firms would prefer internal sources to costly external finance. Thus, according to the pecking order hypothesis, firms that are profitable and, therefore, generate high earnings are expected to use less debt capital than those that do not generate high earnings.

Determinant of capital structure

Profitability

Profitability is defined as the ratio of earnings before interest, tax (EBIT) and depreciation to total assets (TA) (Huang and Song, 2006). Although much theoretical work has been done since Modigliani and Miller (1958), no consistent theoretical predictions on the influence of profitability on firm's capital structure. From the point view of the trade-off theory, the more is the firm profitable, the higher the leverage should be due to debt tax deductibility of interest payment. Rajan and Zingales (1995), further, argue that debt suppliers should be more willing to lend to profitable firms.

Accordingly, a positive dependence is expected to be observed between leverage and profitability. On the other hand, the main argument supporting a negative relationship between leverage and profitability comes from the pecking order theory. Myers (1984) and Myers and Majluf (1984) argue that, as a result of information asymmetry between corporate insiders and the market, investors may under price firm's equity. If firms finance new projects by issuing equity, the net effect is that new investors obtain a higher gain from this investment than pre-existing shareholders, which may cause the project not to be accepted on these grounds even when it has a positive NPV (under investment problem). To avoid such problems, internal funds and even debt that is not too risky will be preferred to equity. Accordingly, firms will prefer to finance from retained earnings first, then from debt and finally from issuing new equity. This, in turn, suggests a negative relationship between profitability and debt ratios.

Tax-based models suggest that profitable firms should borrow more, *ceteris paribus*, as they have greater needs to shield income from corporate tax. On the one hand, Jensen (1986) and Williamson (1988) define debt as a discipline device to ensure that managers pay out profits rather than build empires.

For firms with free cash flow, or high profitability, high debt can restrain management discretion. In contrast to theoretical studies, most empirical studies show that profitability has strong negative influence on leverage. Friend and Lang (1988) and Titman and Wessels (1988) obtain such findings from the US firms. Kester (1986) finds that leverage is negatively related to profitability in both the USA and Japan. More recent studies using international data also confirm this finding, Rajan and Zingales (1995) and Wald (1999) for developed countries, Booth *et al.* (2001) and Wiwattanakantang (1999) for developing countries. Long and Maltiz (1985) find leverage to be positively related to profitability, but the relationship is not statistically significant.

Wald (1999) even claims that profitability has the largest single effect on debt/asset ratios. The relationship between profitability (PROF) and leverage is found to be negative as postulated, but statistically insignificant for all countries with the exception of Malaysia. This is in contrast with most previous studies analyzing only a limited set of variables (Rajan and Zingales, 1995; Booth *et al.*, 2001; Zoppa and McMahon, 2002; Cassar and Holmes, 2003) and reporting a significant effect of profitability on leverage. The negative and significant result for Malaysia is consistent with the predictions of the pecking order theory showing that firms prefer to use internal sources of funding when profits are high.

In this study, profitability will be defined as EBIT scaled by TA. In addition, profitable firms prefer not to raise external equity in order to avoid potential dilution of ownership. Thus, it might be expected an inverse relation between profitability and leverage (Deesomsak *et al.*, 2004).

Tangibility

Titman and Wessels (1988) and Harris and Raviv (1990) argue that tangibility (TAN) might be the major factor in determining the firm's debt levels. Theoretically, Jensen and Meckling (1976) argue that issuing debt increases the shareholders motivation to invest sub-optimally in high-risk projects, taking advantage of the possibility of increasing their benefits at the expense of increasing the risk, which is passed on to the debt-holders, who are the ones that would suffer the possible losses. However, if debt is secured against assets, the borrower is restricted to using loaned funds for a specific project, and creditors have an improved guarantee of repayment. Thus, firms with high level of fixed assets would have higher level of debt. Bevan and Danbolt (2002), however, argue that if the TAN provides a reasonable proxy for the availability of depreciation tax shields, the tax-based hypothesis of DeAngelo and Masulis (1980) would expect a negative rather than a positive association between leverage and TAN.

In their pioneering paper on agency cost, ownership and capital structure, Jensen and Meckling (1976) point out that the agency cost of debt exists as the firm may shift to riskier investment after issuing debt, and transfer wealth from creditors to shareholders to exploit the option nature of equity. If a firm's tangible assets are high, then these assets can be used as collateral, diminishing the lender's risk of suffering such agency costs of debt.

Hence, a high fraction of tangible assets is expected to be associated with high leverage. Also, tangible assets value should be higher than intangible assets in case

of bankruptcy. Harris and Raviv (1990) and Williamson (1988) suggest leverage should increase with liquidation value; both papers suggest that leverage is positively correlated with TAN. Empirical studies that confirm the above theoretical prediction include Long and Maltiz (1985), Friend and Lang (1988), Rajan and Zingales (1995), and Wald (1999).

In this study, TAN is measured as fixed assets scaled by TA. As the non-debt portion of liabilities does not need collateral, TAN is expected to affect the long-term debt (LTD) or total debt (TD) ratio rather than total liabilities ratio.

Size

It seems there is an agreement between theories about the positive effect of size on firm's capital structure though their explanation differs. From the point view of the trade-off theory, firms trade-off between the benefits of leverage such as tax savings or mitigation of agency problems against the costs of leverage such as the costs of bankruptcy. Rajan and Zingales (1995), however, argue that large firms tend to be more diversified and so suffer bankruptcy less often. Accordingly, an observed positive dependence is expected between leverage and firm size. Alternatively, because of information asymmetries, smaller firms are likely to face higher costs for obtaining external funds. Moreover, Bevan and Danbolt (2002) argue that due to credit rating, large companies are more likely to have access to non-bank debt financing. In turn, this too would suggest a positive relationship between size and debt.

Theoretically, the impact of size on debt levels is positive. Empirically, the total asset, the total sales, or the number of employees typically measures firm's size.

Many studies suggest there is a positive relation between leverage and size. Marsh finds that large firms more often choose LTD, while small firms choose short-term debt (STD). Large firms may be able to take advantage of economies of scale in issuing LTD, and may even have bargaining power over creditors.

So the cost of issuing debt and equity is negatively related to firm size. On the other hand, size may also be a proxy for the information that outside investors have. Fama and Jensen (1983) argue that larger firms tend to provide more information to lenders than smaller ones. Rajan and Zingales (1995) argue that larger firms tend to disclose more information to outside investors than smaller ones. Overall, larger firms with less asymmetric information problems should tend to have more equity than debt and thus have lower leverage.

However, larger firms are often more diversified and have more stable cash flow; the probability of bankruptcy for large firms is smaller compared with smaller ones, *ceteris paribus*. Both arguments suggest size should be positively related with leverage. Additionally, many theoretical studies including Harris and Raviv (1990), Narayanan (1988), Noe (1988), Poitevin (1989), and Stulz (1990), suggest that leverage increases with the value of the company. Empirical studies such as Booth *et al.* (2001), Rajan and Zingales (1995), and Wald (1999), generally find that leverage is positively correlated with company size. While both Rajan and Zingales (1995) and Wald (1999) find that larger firms in Germany tend to have less debt.

Growth opportunities

Theoretical studies generally suggest growth opportunities are negatively related with leverage. On the one hand, as Jung *et al.* (1996) show, if management pursues

growth objectives, management and shareholder interests tend to coincide for firms with strong investment opportunities. But for firms lacking investment opportunities, debt serves to limit the agency costs of managerial discretion as suggested by Jensen (1986) and Stulz (1990). Berger *et al.* (1997) also confirm the disciplinary role of debt. On the other hand, debt also has its own agency cost. Myers (1977) argues that high-growth firms may hold more real options for future investment than low-growth firms. If high-growth firms need extra equity financing to exercise such options in the future, a firm with outstanding debt may forgo this opportunity because such an investment effectively transfers wealth from stockholders to debt holders.

Therefore, firms with high-growth opportunity may not issue debt in the first place and leverage is expected to be negatively related with growth opportunities. Berens and Cuny (1995) also argue that growth implies significant equity financing and low leverage. Empirical studies such as Booth *et al.* (2001), Kim and Sorensen (1986), Rajan and Zingales (1995), Smith and Watts (1992), and Wald (1999) predominately support theoretical prediction, the only exception is Kester (1986).

There are different proxies for growth opportunities, however, the differences in growth proxies used seem to have a moderating effect on the relationship between growth and leverage. Wald (1999) uses a five-year average of sales growth. Titman and Wessels (1988) use capital investment scaled by TA as well as research and development scaled by sales to proxy growth opportunities. Rajan and Zingales (1995) use Tobin's Q and Booth *et al.* (2001) use market-to-book ratio of equity to measure growth opportunities.

Ownership structure and managerial shareholdings

Agency theory (Jensen and Meckling, 1976; Jensen, 1986) suggests that the optimal structure of leverage and ownership may be used to minimize total agency costs. They propose two types of conflicts of interest: conflicts between shareholders and managers, and conflicts between shareholders and debt holders. Therefore, it is expected that there is some correlation between ownership (including managerial ownership) structure and leverage.

Leland and Pyle (1977) argue that leverage is, theoretically, positively correlated with the extent of managerial shareholdings. Berger *et al.* (1997) confirm such positive correlation. On the other hand, Friend and Lang (1988) give opposite results. Empirical studies, however, produce mixed results: for example, while ownership structure is believed to have impact on capital structure, there seems to be no clear predication about the relationship between ownership structure and leverage.

Age of the firm

Age of the firm is a standard measure of reputation in capital structure models. Before granting a loan, banks tend to evaluate the creditworthiness of entrepreneurs as these are generally believed to pin high hopes on very risky projects promising high profitability rates. To overcome problems associated with the evaluation of creditworthiness, Diamond (1989) suggests the use of firm reputation. He considers reputation as the good name a firm has built up over the years. Directors concerned with a firm's reputation tend to act more prudently and avoid riskier projects in favour of safer projects, even when the latter have not been approved by shareholders, thus reducing debt agency costs (by reducing the "temptation" to gamble at creditors' cost). This perspective is also seconded within the context of small businesses. Petersen and

Rajan (1994) found that older firms have higher debt ratios since they should be higher quality firms. Confirmed that age is positively related to LTD but negatively related to STD. However, found that age is negatively related to both LTD and STD.

Liquidity

Liquidity (LQ) ratios have both a positive and a negative effect on the capital structure decision, and so the net effect is unknown. First, firms with high LQ ratios may have relatively higher debt ratios due to their greater ability to meet short-term obligations. This argument suggests a positive relationship between a firm's LQ and its debt ratio. Alternatively, firms with more liquid assets may use such assets as sources of finance to fund future investment opportunities. Thus, a firm's LQ position would have a negative impact on its leverage ratio. A further argument for a negative relationship is provided by Myers and Rajan (1998) who argue that when agency costs of LQ are high, outside creditors limit the amount of debt financing available to the company. Thus, a negative relationship between debt and LQ would be expected. Similarly, the effect of asset LQ is an ambiguous signal to institutional investors. A high LQ ratio may be considered to be a negative signal because it indicates that the firm faces problems regarding opportunities for its long-term investment decisions. Hence, a high LQ ratio may be considered to be a negative signal for institutional investors. However, a high LQ ratio may be considered to be a positive signal from the firm, because it indicates that the firm can easily pay its obligations and hence faces lower risk of default. Thus, high LQ would be a positive signal for institutional investors.

Data and methodology

This study investigates firms that have been listed on the Palestine securities exchange (PSE) over a five-year period (2000-2004). In total, 28 companies were listed in PSE since 1999. Only 15 firms working in different economic sectors qualified to be included in the study sample according to the availability and continuity of published financial statements during the period of 2000-2004. Variables used for the analysis include profitability, leverage ratios (TD, STD, and LTD), LQ, age, asset structure, and firm size and sales growth are also included as control variables. The panel character of the data allows for the use of panel data methodology. Panel data involves the pooling of observations on a cross-section of units over several times.

Variables and hypotheses

Based on the review of previous studies with respect to the main determinants of capital structure and debt maturity, the following three models are formulated to state the hypothesized relationship:

- $Rtd = a + B1Roa + B2G + B3Size + B4Age + B5Tan + B6Lq$
- $Rsd = a + B1Roa + B2G + B3Size + B4Age + B5Tan + B6Lq$
- $Rld = a + B1Roa + B2G + B3Size + B4Age + B5Tan + B6Lq$

where:

- RTD is the ratio of TD to TA, TD is both LTD and STD.
- RSD is the ratio of STD to TD, STD includes all types of debt that mature in less than one year.

- RLD is the ratio of LTD to TD, LTD includes all types of debt that mature beyond one year.
- ROA is the return on TA as measured of profitability and defined as the ratio of operating profit (EBIT) to TA.
- G stands for the growth opportunities facing a firm and they are measured by the percentage change the TA over the last three years.
- $G = \frac{TAt - TAt-3}{TAt-3}$ when t refers to the year 2000.
- Size refers to the size of the firm and is measured by the natural logarithm of assets, i.e. $size = \ln TA$.
- Age refers to the age of the firm and is expressed in the number of years and is calculated as the present year (2000) minus the year of inception.
- TAN refers to the assets structure or asset TAN and is expressed as a ratio of fixed assets to TA and severs as collateral. The TAN of assets is measured by percentage of TA that is fixed.
- LQ refers to liquidity of the firm and is defined as a ratio of current assets to current liability.

Hypotheses

- There is a negative relationship between profit and STD and LTD.
- There is a negative relationship between growth (G) and LTD, and positive relationship between (G) and STD.
- There is a negative relationship between size and STD, and positive relationship between size and LTD and TD.
- There is a negative relationship between age and STD and LTD.
- There is a negative relationship between TAN, and STD. Positive relationship between (TAN) and LTD and TD.
- There is a negative relationship between LQ, and STD and LTD.

Empirical results

As shown in Table I, the ratio of TD to TA is 43 percent which is quite high compared with Qatar companies (Abdullah, 2005) but relatively the same (42 percent) Jordan companies (Zugbaibi and Kabbani, 2003).

In addition, 73 percent of the debt is STD with the medium being 71 percent and SD being 15 percent.

The LTD ratio was 27 percent on average with the medium being 29 percent and SD 15 percent.

In Addition, the average proportion of fixed assets to TA was 43 percent with medium being 41 percent and SD being 24 percent. The SD of the percentage of the debt ratios was quite higher than SD of the percentage of fixed assets. This finding indicates that the matching principle was not apposite.

Adding to that, past growth (G) which measure the growth opportunities has a mean of (-10 percent) which mean that negative growth taking into consideration.

Table I.
Descriptive statistics
of dependent and
independent variables

Variables	Mean	SD	Minimum	Maximum	Medium
Age	15.7	14.55	4.00	48.00	7.50
G	-0.1	0.22	-0.46	0.29	0.03
LQ	2.71	1.79	0.36	7.14	2.67
TAN	0.43	0.24	0.03	0.82	0.41
RLD	0.27	0.15	0.04	0.48	0.29
ROA	0.01	0.10	-0.28	0.12	0.02
RSD	0.73	0.15	0.52	0.96	0.71
RTD	0.43	0.41	0.07	1.62	0.33
SIZE	9.49	1.61	7.32	12.31	9.11
TA	44757.76	73211.10	222859.00	1583.60	9045.90

The maximum growth opportunities were 29 percent opportunities were exit. This relationship is contradicted with the finding of Qatar companies (18 percent) growth opportunities (Abdullah, 2005).

Table II describes that statistics may suggest that some variables are skewed and as a result we can apply the normality test which indicates that all variables appear to be normally distributed.

Table III shows the average leverage ratios (TD ratio); service enjoys the highest ratio (53.7 percent) followed by industry ratio (51 percent). The lowest TD ratio is the agriculture sector. This may be because the banks restrictions for lending this sector. In addition, LTD ratio in trade sector scores the highest ratio (36 percent) through other economical sectors, followed by industry sector (34 percent).

Table II.
Test of normality

Variables	Kolomogrov-Simirov of normality	Sig.
Age	1.03	0.24
G	0.76	0.61
LQ	0.50	0.97
TAN	0.49	0.97
RLD	0.59	0.87
ROA	0.90	0.39
RSD	0.59	0.87
RTD	0.87	0.43
SIZE	0.60	0.86
TA	1.3	0.07

Table III.
Average leverage ratio
across sectors

Sector	RTD (%)	RLD (%)	RSD (%)
Service	53.69	19.84	80.16
Trade	34.11	36.23	63.77
Industry	50.86	34.12	65.88
Agriculture	24.06	15.74	84.26
	<i>One-way ANOVA</i>		
<i>F</i> -statistics	0.334	1.660	1.660
<i>Sig.</i>	0.801	0.238	0.238

On the contrary, the STD ratio appears to be the highest in the agriculture sector (84 percent). This sector is more risky than other sectors. The short-term leverage in the service sectors is (80 percent) the service sector through monthly payments from clients can cope with it.

Despite these variations, it appears that there is no significance difference as shown by the one way analysis of variance (ANOVA).

Table IV shows the main determinants of capital structure. It seems that ROA is almost vary across the Palestinian economic sectors as manifested by the one way ANOVA test (Sig. 0.12).

The table demonstrates that the LQ ratio in the industrial sector is (3.59 percent) while it is (1.20 percent) in the service sector. Adding to that, industrial sector scores the highest average age of the sample (22.3) years. All sectors except industry enjoy negative growth in assets.

It can be argued that companies with highest LTD ratio are those with the highest size of the companies. On the other hand, the service sector have the highest TD ratio (53.69) and the lowest LQ ratio (1.2) while have the highest TAN ratio (53.18).

Correlation and regression

To test for the presence of first-order collinearity between the independent variables, Table V explained Pearson correlation matrix that does not apply strongly the existence of correlation there is correlation between profitability (ROA) and age; and between profitability and growth. Moreover, the correlation coefficient between any two independent variables has not reached 50 percent.

Sector	ROA (%)	G (%)	Size (%)	Age (%)	TAN (%)	LQ (%)
Service	-10.31	-11.18	9.61	5.333	53.184	1.20
Trade	-0.095	-18.48	9.72	6.50	20.365	2.60
Industry	6.48	11.98	9.625	22.333	43.582	3.59
Agriculture	1.175	-3.28	8.945	19.333	45.332	2.56
F-statistics	2.489	1.461	0.118	0.335	0.715	1.274
Sig.	0.120	0.283	0.948	0.312	0.565	0.336

Table IV.
Determinants of capital structure

	Age	G	LQ	TAN	RLD	ROA	RSD	RTD	Size
AGE	1								
G	0.48*	1							
LQ	0.24	0.36	1						
TAN	-0.39	-0.11	-0.26	1					
RLD	-0.16	0.26	0.22	0.33	1				
ROA	0.58**	0.75***	0.36	-2.57	0.31	1			
RSD	0.16	-0.28	-0.22	-0.33	-1.0***	-0.31	1		
RTD	0.22	0.02	-0.39	0.48*	0.28	0.03	-0.28	1	
SIZE	0.09	0.56**	-0.31	-0.27	0.16	0.35	-0.16	-0.04	1
TA	-0.08	0.41	-0.27	-0.30	0.23	0.25	-0.23	-0.04	0.88***

Table V.
Correlation among the variable

Notes: Correlation is significance at: *0.1, **0.05 and *** 0.01 levels

Table V also reports no primary evidence of existence of the matching principle as measured by assets TAN because the correlation between fixed assets ratio on one hand and STD and LTD ratio on the other hand is not significance. Abdullah's (2005) study approved these findings. In addition, Huang and Song (2006) mentioned that the leveraged increased with fixed assets. On the contrary to the current study findings, Tang and Jang (2006) concluded a significant relation between assets and LTD. Abor (2005) summarized that there are significant and positive relation between assets on one hand, and STD and TD on the other hand.

On the other hand, there is a significant correlation between assets TAN and TD ratio within the capital structure. Ooi (1999) study mentioned that assets are significant determinant with debt policy. Huang and Song (2006) summarized that debt decreased with growth.

The growth opportunities variables (G) correlated positively with both the ratio of STD and LTD. Both correlation coefficients are not significant and this finding is supported by the proposition of Myers (1977) who advocates that because of underinvestment problem firms tend to borrow on short-term basis. Deesomsak *et al.* (2004), concluded that there is negative relation between growth and leveraged. The impact of growth opportunity (GROW) on leverage is negative for all countries with the exception of Australia, but it is significant only for Thailand and Singapore. This gives support to the predictions of the agency theory that high growth firms use less debt since they do not wish to expose themselves to possible restrictions imposed by lenders. It is also consistent with most previous studies on the region (Zoppa and McMahan, 2002), except Booth *et al.* (2001) who found a positive relationship for Thai and Malaysian firms and Tang and Jang (2006) concluded a significant relation between growth and LTD.

Adding to that, Table V shows positive correlation between the size of the company and the ratio of LTD and negative correlation with both STD as well as TD. This finding is consistent to Wiwattanakantang (1999), Booth *et al.* (2001), Pandey (2001), Prasad *et al.* (2003), Deesomsak *et al.* (2004), and Boateng and with the trade-off and agency theories, confirming that larger firms tend to have better borrowing capacity relative to smaller firms.

Also, Table V shows that there is a positive correlation between LQ and ratio of LTD. On the other hand there is a negative correlation between LQ on one hand and ratio of STD and ratio of TD on the other hand. LQ have a negative and significant relationship with leverage in all countries Wiwattanakantang (1999) and Deesomsak *et al.* (2004). This finding confirms the postulated hypotheses that firms tend to use their liquid assets to finance their investment in preference to raising external debt (Deesomsak *et al.* (2004).

Chittenden *et al.* (1996) suggest that the TD may mask two opposite effects for LTD and STD for some of the explanatory variables. Consequently, this paper investigated the effect of independent variables on the TD, short- and long-term separately.

Tables VI-VIII demonstrate that return of assets, LQ, size, assets TAN, growth and age considered as a main determinants. The above-mentioned independence variables explain about 58 percent of the variation in TD financing and about 65 percent in both STD and LTD financing. For assets TAN, the relationship with TD is positive but not significant.

LQ is negatively and significantly related to STD ratio, i.e. the more liquid the company is the less the resort to borrowing. The result indicates that firms with higher LQ use that LQ to pay off short-term loans.

Table VI.

Regression model for TD

Year	RTD equation (1)	t-value	Sig.
Constant	-2.797×10^{-2}	-0.003	0.998
ROA	1.886	0.228	0.826
LQ	-0.415	-0.703	0.505
Size	-1.727×10^{-2}	-0.021	0.984
TAN	5.229	1.463	0.187
Age	7.792×10^{-2}	1.376	0.211
G	-0.987	-0.149	0.886

Notes: $R^2 = 0.584$; $F = 1.645$; sig. = 0.264; standard error of the estimate = 1.781

Table VII.

Regression model for STD

Year	RSD equation (1)	t-value	Sig.
Constant	2.437	3.230	0.014
ROA	-0.880	-1.542	0.167
LQ	-9.438×10^{-2}	-2.318	0.054
Size	-0.121	-2.169	0.067
TAN	-0.652	-2.647	0.033
Age	-1.115×10^{-3}	-0.286	0.783
G	0.849	1.862	0.105

Notes: $R^2 = 0.651$; $F = 2.178$; sig. = 0.166; standard error of the estimate = 0.123

Table VIII.

Regression model for LTD

Year	RLD equation (1)	t-value	Sig.
Constant	-1.437	-1.904	0.099
ROA	0.880	1.542	0.167
LQ	9.438×10^{-2}	2.318	0.054
Size	0.121	2.169	0.067
TAN	0.652	2.647	0.033
Age	1.115×10^{-3}	0.286	0.783
G	-0.849	-1.862	0.105

Notes: $R^2 = 0.651$; $F = 2.178$; sig. = 0.166; standard error of the estimate = 0.123

Growth opportunities variable (G) is found to be negatively related to LTD and passively related to STD. This result runs passively with (Abdullah, 2005) results and contrary with Myers (1977) hypothesis that firms with significant growth or opportunities borrow on short on short-term basis. In other words, there is no evidence of prediction that debt maturity decrease as the proportion of growth options in the firm's investment opportunity set increase. This finding explained the ability of firms to roll over STD and, therefore, short-term loan are converted to LTD.

The proposed hypothesis that firms seek to match the maturities of assets to liabilities is not observed in these study.

For the assets structure the displayed sign that firms with higher percentage of fixed assets with in their assets use more LTD. There is a positive the relationship between

fixed assets (TAN) and LTD and a negative relationship between the fixed assets and STD. This means most if not all fixed assets is financed by LTD.

The stated fact is in theory is that the proportion of tangible assets is related to availability of collateral, which reduce the agency costs of debt. Availability of collateral is very important for newly established firms that may have no close ties to creditors. These arguments suggest a positive relationship between the firm's total and long-term leverage on the one hand and the proportion of fixed assets (TAN) on the other hand. The result from developed markets uniformly confirms this relationship (Abdullah, 2005).

However, the Palestine emerging stock market may identify a number of factors that limit the importance and the role of tangible assets as collateral in securing more TD in general and LTD in particular. One of these factors is the poor and inefficient legal system that in many cases makes a recovery of collateral (in case of defaults) costly and time consuming (Abu Mouamer, 2002; Nivorozhkin, 2002).

Size is found to be positively related to LTD and negatively related to STD. This result implies that big companies have opportunity to borrow in long-term basis while small ones sticking to short-term financing.

Conclusions and recommendations

The main objective of this paper is to examine the relationship between the capital structure and debt lifetime among listed companies in Palestine stock market. The companies belong to four economic sectors namely service, industrial, trade, and agriculture.

The study has shown that the service companies have the highest TD ratio (53.69 percent), followed by industrial companies (50.86 percent), trade companies (34.11 percent) and agriculture companies (24.02 percent).

The one way ANOVA shows no significant difference in the use of debt, neither total, LTD or STD among companies in the four sectors. Adding to that, ANOVA indicates insignificant differences among the companies in the sample with respect growth opportunities, size, age, TAN, and LQ. The correlation analysis has shown that TD is positively and significantly related to TAN, on the country, no significant relationship between the LTD and STD on the one hand and age, growth, LQ, TAN, and size on the other hand.

Recommended future researches

- What are the determinants of dividend payout ratios of listed companies in PSE?
- What is the effect of capital structure on profitability for listed companies in PSE?

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