Factors Affecting the Financial Leverage of Service Firms in Turkey: An Empirical Investigation

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Abstract

This research investigates the factors affecting the financial leverage of 52 service firms listed on Istanbul Stock Exchange during the period from 2008 to 2017. Using Ordinary Least Squares (OLS) regressions, our results indicated that, as assumed by the pecking order model, leverage increases with investment opportunities and decreases with profitability, liquidity and tangibility. Furthermore, we find that larger firms tend to have high leverage. However, contradicting the trade-off model, non-debt tax shields are positively and significantly related to leverage.

Keywords: Leverage, Trade-Off Model, Pecking Order Model, Service Firms, Istanbul Stock Exchange.

Türkiye'de Hizmet Firmalarının Finansal Kaldıracını Etkileyen Faktörler Üzerine Ampirik Bir Araştırma

Öz

Bu çalışma 2008-2017 yılları arasında Borsa İstanbul'da (BİST) hisse senetleri işlem gören 52 hizmet firmanın finansal kaldıracını etkileyen faktörleri incelemektedir. En küçük kareler yönetimini (OLS) kullanarak çalışmanın sonuçları, finansal hiyerarşi modelinde varsayıldığı gibi, kaldıracın büyüme fırsatları ile arttığını ve karlılık, likidite ve maddi duran varlıklar ile azaldığını göstermiştir. Ayrıca, büyük firmaların yüksek kaldıraca sahip olduğu ortaya çıkmıştır. Bununla birlikte, dengeleme modelinin tersine, kaldıraç ile borç dışı vergi kalkanı arasındaki ilişki pozitif ve anlamlı olduğu tespit edilmiştir.

Anahtar Kelimeler: Kaldıraç, Dengeleme Modeli, Finansal Hiyerarşi Modeli, Hizmet Firmaları, Borsa İstanbul (BİST).

Introduction

Capital structure choice is one of the most important decisions in finance. Maximizing firm performance and shareholders' value requires understanding of the

Özgün Araştırma Makalesi (Original Research Article)
Geliş/Received: 11.02.2019
Kabul/Accepted: 16.09.2019
DOI: https://dx.doi.org/10.17336/igusbd.525488
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costs and benefits related to capital structure decisions. In this context, the determinants of capital structure play a crucial role. The capital structure behavior has been explained by a number of theories.

The trade-off model suggests that there is an optimal level of leverage where the marginal benefit of leverage is equal to the marginal cost (Fama & French, 2002). The optimal level of leverage maximizes the firm performance by balancing the tax benefits and bankruptcy costs. The agency concerns also play an important role in the trade-off model. Agency stories suggests that debt can reduce the free cash flow under the control of managers. Managers may invest the excess free cash flow in low-return projects that reduce the shareholders' value. Debt service payments reduce the excess cash and motivate managers to be more efficient since the failure to make these payments will result in bankruptcy. Thus, debt reduces the equity agency costs derived from the conflicts of interests between shareholders and managers (Jensen & Meckling, 1976; Jensen, 1986). On the other hand, debt can increase the agency costs of debt derived from the conflicts of interests between shareholders and debtholders. Firms with high and risky debt will incur high costs under debt-financing. Under these conditions, firms will be reluctant to invest and consequently face the underinvestment problem and pass up profitable investment opportunities (Myers, 1977). Firms can maximize their performance by achieving a mix of capital structure that minimizes the total agency costs.

Myers (1984) suggested the pecking order model as an alternative to the trade-off theory. In the pecking order world, there is no optimal leverage. The information asymmetry costs push firms to fund their investments firstly with internal funds. If the internal funds are not sufficient, firms prefer debt over equity to fund investment, and as a last resort, issue equity.

Baker and Wurgler (2002) suggest the market timing theory. According to this theory, firms tend to issue shares instead of debt when prices are high, and tend to repurchase equity when prices are low. Baker and Wurgler (2002) find evidence that leverage increases (decreases) when the market value is low (high). Corporate leverage is negatively related to the historical market valuations.

This research investigates the factors affecting the financial leverage of 52 service firms listed on listed on Istanbul Stock Exchange during the period from 2008 to 2017. Our results indicated that, as predicted by the pecking order model, leverage increases with investment opportunities and decreases with profitability, liquidity and tangibility. We also find that larger firms tend to have high leverage. However, contradicting the trade-off model, non-debt tax shields are positively and significantly related to leverage.

The remainder of this paper is organized as follows. The next section presents the literature review. Section 3 describes data and methodology. Section 4 presents the empirical results. In section 5, we present conclusions.

2. Literature Review

According to the trade-off model, debt increases with the tax benefits of debt (Graham, 2000) and agency costs of free cash flow (Jensen, 1986). On the other hand, debt decreases in the presence of bankruptcy costs (Bradley, Jarrell and Kim, 1984) and agency costs of debt (Myers, 1977). In the pecking order model, information asymmetry plays an important role in determining corporate leverage (Myers & Majluf, 1984). In this section we present the theoretical discussion and the results of prior empirical studies about the factors affecting the capital structure.

2.1 Profitability

The trade-off theory predicts a positive relation between leverage and profitability. Firms with more profitability are less susceptible to bankruptcy costs and financial distress. More profitable firms are more likely to face the agency problems created by free cash flow. The agency costs of free cash flow (discussed by Jensen (1986)) cause a firm to issue more debt to control the agency problem.

In the pecking order model, firms choose internal funds as a priority and issue debt when internal finance is insufficient and finally issue equity. Firms with more profitability have more internal funds and consequently tend to issue less debt. Most previous studies found a negative relation between leverage and profitability. For example (Titman & Wessel, 1988; Rajan & Zingales, 1995; Chen & Hammes, 1997; Booth, Aivazian, Demirguc-Kunt and Maksimovic, 2001; Fama & French, 2002; Frank & Goyal, 2009; Karadeniz, Kandir, Balcilar and Onal, 2009; Gülşen & Ülkütaş, 2012; Getzmann, Lang and Spremann, 2014; Öztekin, 2015; Güner, 2016; M'ng, Rahman and Sannacy, 2017; Cevheroglu-Acar, 2018). However, Liang, Li and Song (2014) found a positive relation between leverage and profitability. Khémiri & Noubbigh (2018) indicated that the relation between leverage and profitability is U-shaped. Kiracı & Aydın (2018) found that profitability is not significantly related to leverage.

2.2 Growth Opportunities

The underinvestment problem is more pronounced among firms with high growth opportunities (Gay & Nam, 1998; Doukas & Pantzalis, 2003). On the other hand, firms with high growth opportunities have higher financial distress costs and are less prone to manager-shareholder agency conflicts (Frank & Goyal, 2009). Accordingly, the trade-off model suggests that growing firms tend to have less leverage. The empirical results of several studies support the trade-off model assumption about growth opportunities (Rajan & Zingales, 1995; Chen & Hammes, 1997; Fama & French, 2002; Gaud, Jani, Hoesli and Bender, 2003; Bauer, 2004; Frank & Goyal, 2009; Gülşen and Ülkütaş, 2012; Güner, 2016; Ilyukhin, 2017; Kiracı & Aydın, 2018; Vijayakumaran & Vijayakumaran, 2018).

The pecking order model suggests that firms with more growth opportunities tend to have more leverage. Firms with more investments relative to internal funds issue more debt. However, in a more complex view of the model, firms with more investments maintain low-risk debt capacity and issue less debt (Fama & French, 2002). Some studies indicated that leverage increases with growth opportunities (Booth et al, 2001; Arsov & Naumoski, 2016; Burucu & Öndeş, 2016; Erol, Aytekin and Abdioğlu, 2016). However, Titman & Wessel (1988), Karadeniz et al (2009), Cortez & Susanto (2012), Liang et al (2014), and Cevheroglu-Acar (2018) show an insignificant relation between leverage and growth opportunities.

2.3 Firm Size

Larger firms are more diversified, have less volatile earnings and less bankruptcy costs (Titman & Wessel, 1988; Fama & French, 2002). Thus, larger firms are expected to have more leverage under the trade-off model. A large number of prior empirical studies show a positive relation between leverage and firm size, for example (Rajan & Zingales, 1995; Booth et al, 2001; Fama & French, 2002; Frank & Goyal, 2009; Liang et al, 2014; Öztekin, 2015; M'ng et al, 2017; Cevheroglu-Acar, 2018).

According to the pecking order model, debt will be preferred to equity in the presence of asymmetric information problem (Harris & Raviv, 1991). Larger firms

provide more information and disclose it faster (Cerqueira & Pereira, 2015). Therefore, larger firms have less information asymmetry (Ozkan & Ozkan, 2004), and tend to issue less debt. Some empirical studies confirm the pecking order assumption that larger firms have less leverage (Gülşen & Ülkütaş, 2012; Burucu & Öndeş, 2016; Güner, 2016). However, Karadeniz et al (2009), Cortez & Susanto (2012), Kiracı & Aydın (2018) and Goh, Tai, Rasli, Tan and Zakuan (2018) did not find significant relation between leverage and firm size. Fama and French (2002) argue that in the complex pecking order model, risky firms tend to have less leverage to reduce the probability of issuing risky securities or foregoing valuable investment opportunities when internal funds are low. Thus, if larger firms are less risky, we would expect a positive relation between leverage and firm size under the complex pecking order model.

2.4 Tangibility

According to Jensen & Meckling (1976), managers of highly levered firms can transfer the wealth from debtholders to shareholders by engaging in risky investments. Tangible assets serve as collateral and mitigate the debtholder-shareholder conflicts (Titman & Wessel, 1988). Therefore, from the trade-off model perspective, firms with more tangible assets tend to have more leverage. Most of prior studies found a positive relation between leverage and tangibility (Rajan & Zingales, 1995; Frank & Goyal, 2009; Liang et al, 2014; Öztekin, 2015; M'ng et al, 2017; Cevheroglu-Acar, 2018; Goh et al, 2018).

By contrast, the pecking order model predicts a negative relation between leverage and tangibility. Equity financing is less costly for firms with more tangible assets since the asymmetric information problem is less pronounced among these firms. Therefore, firms with more tangible assets tend to be less levered (Frank & Goyal, 2009). Some empirical studies provide support for this view (Bauer, 2004; Karadeniz et al, 2009; Arsov & Naumoski, 2016; Burucu & Öndeş, 2016). On the other hand, some studies reported an insignificant relation between leverage and tangibility (Titman & Wessel, 1988; Ilyukhin, 2017; Kiracı & Aydın, 2018).

2.5 Business Risk

The trade-off theory predicts that firms with more volatile earnings have higher bankruptcy costs and tend to have less leverage. In the complex pecking order model, firms with volatile earnings issue less debt to maintain low-risk debt capacity for future investments (Fama and French, 2002). However, Frank & Goyal (2009) argue that risky firms could be more prone to the adverse selection problems, and therefore, tend to issue more debt. The prior studies have reached mixed results about the relation between leverage and risk. Vijayakumaran & Vijayakumaran (2018), and Cevheroglu-Acar (2018) found negative relation between leverage and risk. On the other hand, Gaud et al (2003) reported a positive relation. However, Titman & Wessel (1988), Arsov & Naumoski (2016), Burucu & Öndeş (2016), Erol et al (2016), Ilyukhin (2017), and Kiracı & Aydın (2018) did not find significant relation between leverage and risk.

2.6 Liquidity

The relation between leverage and liquidity is expected to be positive under the trade-off model because expected bankruptcy costs are lower for firms with more liquidity. By contrast, the pecking order model predicts a negative relation. Firms with more liquidity have more internal funds and consequently tend to issue less debt. Liang et al (2014), Burucu & Öndeş (2016), Erol et al (2016), Güner (2016), Kiracı & Aydın

(2018), and Cevheroglu-Acar (2018) show a negative relation between leverage and liquidity, while Goh et al (2018) reported an insignificant relation.

2.7 Non-debt Tax Shields

DeAngelo and Masulis (1980) pointed out that non-debt corporate tax shields such as depreciation deductions or investment tax credits are substitutes for debt tax shields. Accordingly, we would expect that firms with more non-debt tax shields have lower leverage. A negative relation between leverage and non-debt corporate tax shields has been reported in several studies (Bauer, 2004; Cortez & Susanto, 2012; Getzmann et al, 2014; Ilyukhin, 2017; M'ng et al, 2017; Vijayakumaran & Vijayakumaran, 2018; Cevheroglu-Acar, 2018). However, other studies showed an insignificant relation, such as (Titman & Wessel, 1988; Karadeniz et al, 2009; Burucu & Öndeş, 2016; Güner, 2016; Kiracı & Aydın, 2018).

3. Data and Methodology

3.1 Data

We investigate the factors affecting capital structure choice using a panel data of 52 service firms listed on Istanbul Stock Exchange. The data are derived from the website "kap.org.tr" for the period 2008-2017. Our sample consists of 426 firm-year observations.

3.2 Variables and Estimation method

The dependent variable is leverage (**Lev**) and measured as the ratio of total debt to total assets. The independent variables are based on the theoretical framework and previous studies and represent the factors affecting financial leverage. The independent variables are defined as follows:

Firm size (**Size**) is computed as the natural logarithm of total assets.

Growth opportunities (**GR**) is computed as (total assets $_t$ – total assets $_{t-1}$) / total assets $_t$.

Profitability (**ROA**) is the ratio of net income to total assets.

Business risk (**Risk**) is the standard deviation of (ROA) for the previous 4 years.

Non-debt tax shields (**NDTS**) is the ratio of depreciation to total assets.

Tangibility (**Tang**) is the ratio of fixed assets to total assets.

Liquidity (**LIQ**) is the ratio of cash to total assets.

To investigate the effect of factors that determine the financial leverage decision, we estimate the following OLS regression:

$$Lev_{it} = \beta_0 + \beta_1 (Size_{it}) + \beta_2 (GR_{it}) + \beta_3 (ROA_{it}) + \beta_4 (Risk_{it}) + \beta_5 (NDTS_{it}) + \beta_6 (Tang_{it}) + \beta_7 (LIQ_{it}) + [Year\ Dummies] + \varepsilon_{it}$$

3.3 Descriptive statistics and correlations

Table (1) presents the descriptive statistics for all variables included in our study. The table shows that, on average, total debt (Lev), fixed assets (Tang) and cash (LIQ) amount to 55.2%, 58.8% and 8.6% of the total assets, respectively. We also see that the mean and (median) values of return on assets (ROA) are relatively low 0.017 (0.019). The non-debt tax shields (NDTS), which represents the depreciation, has a mean (median) of 0.028 (0.021).

	Lev	Size	GR	ROA	Risk	NDTS	Tang	LIQ
Mean	0.552	20.095	0.097	0.017	0.050	0.028	0.588	0.086
Median	0.591	19.889	0.108	0.019	0.033	0.021	0.658	0.056
Std. Deviation	0.260	1.899	0.256	0.116	0.060	0.030	0.272	0.097
Minimum	0.006	14.871	-2.229	-0.511	0.001	0.000	0.000	0.000
Maximum	1.000	24.952	0.960	0.507	0.343	0.241	1.000	0.588
Observations	411	426	375	426	271	426	426	426

Table (1): Descriptive statistics

Table (2) reports the non-parametric Spearman rank correlation coefficients between the variables used in this study. We find that firm size, non-debt tax shields and growth opportunities are significantly and positively correlated with leverage. On other hand, Profitability, tangibility and risk are negatively and significantly correlated with leverage. However, liquidity shows insignificant correlation with leverage. We also find that the correlation coefficients between variables are relatively low and multicollinearity does not appear to be a problem.

	Lev	Size	GR	ROA	Risk	NDTS	Tang	LIQ
Lev	1							
Size	0.428**	1						
GR	0.146**	0.144**	1					
ROA	-0.295**	0.134**	0.205**	1				
Risk	-0.158*	-0.411**	-0.043	-0.057	1			
NDTS	0.149**	0.347**	0.045	-0.058	0.032	1		
Tang	-0.110*	0.008	-0.045	-0.277**	0.151*	0.259**	1	
LIQ	-0.028	0.235**	0.129*	0.245**	-0.087	0.172**	-0.331**	1

* P < 0.05, ** P < 0.01.

Table (2): Spearman Rank Correlation Coefficients

4. Empirical Results

Table (3) reports the mean and median values of leverage by firm characteristics. The firm-years for each variable are independently divided into two groups (subsamples) based on the median value. For example, firm-years with high (low) ROA are those ranked in above (below) the median value of ROA, and so on for other variables. Then, we employ T-Test and Man- Whitney Test to investigate whether the two groups of each variable have different leverage. Table (3) shows that large (small) firms and firms with high (low) growth opportunities, low (high) profitability, high (low) non-debt tax shields and low (high) risk have higher (lower) leverage. These results are significant, based on T-Test and Mann-W Test, except risk, where only the result of T-Test is significant. However, the results for tangibility and liquidity are not significant.

	N	Leverage	T-Test (Sig)	Mann-W (Sig)
Large Firms	207	**0.656 (0.661)**	(0.000)**	(0.000)**
Small Firms	204	0.446 (0.459)		
High_ GR	183	**0.598 (0.626)**	(0.002)**	(0.012)*
Low_ GR	177	0.512 (0.542)		
High_ ROA	211	**0.489 (0.529)**	(0.000)**	(0.000)**
Low_ ROA	200	0.618 (0.680)		
High_ Risk	142	**0.525 (0.571)**	(0.041)*	(0.103)
Low_ Risk	116	0.593 (0.631)		
High_ NDTS	201	**0.600 (0.647)**	(0.000)**	(0.000)**
Low_ NDTS	210	0.505 (0.520)		
High_ Tang	203	**0.532 (0.596)**	(0.132)	(0.372)
Low_ Tang	208	0.571 (0.583)		
High_ LIQ	207	**0.537 (0.578)**	(0.252)	(0.313)
Low_ LIQ	204	0.567 (0.604)		

Figures without parentheses are mean values of leverage. Median values are in parentheses.

*, ** significant difference between two groups at 5%, 1% levels, respectively.

N is the number of observations in each group.

Table (3): Leverage Values by Firm Characteristics

Table (4) presents the OLS estimation results of the effects of explanatory variables on leverage. The results indicate a positive and significant relation between leverage and firm size. Thus, larger firms tend to have higher leverage. This result supports the predictions of the trade-off model and a complex pecking order model. We also find that, as assumed by the simple pecking order model, growth opportunities are significantly and positively related to leverage. The coefficients on profitability, liquidity and tangibility are also in line with the pecking order model, where firms with more profitability, more liquidity and more tangibility have lower leverage. The coefficient on risk is insignificant. However, the coefficient on non-debt tax shields is positive and significant, which is inconsistent with the trade-off model. These results are in line with the results presented in table (3), except tangibility and liquidity. Overall, our results support the pecking order model of corporate leverage.

			Leverage: Total debt / Total assets
Variables	**Expected Relations**		
	Trade-off	**Pecking order**	
Size	+	+/-	**0.054**** (0.000)
GR	-	+	**0.138*** (0.017)

ROA	+	-	**-0.893**** (0.000)
Risk	-	-	**0.301** (0.256)
NDTS	-		**1.759**** (0.009)
Tang	+	-	**-0.354**** (0.000)
LIQ	+	-	**-0.748**** (0.000)
Constant			**-0.283** (0.100)
Adjusted R^2			0.397
F			14.015** (0.000)
N			258

N is the number of observations. P values are reported in parentheses.
*, ** indicate significance at the 5%, 1% levels, respectively.
Year dummies are included in the model.

Table (4): OLS Regression Results

5. Conclusion

According to the trade-off theory, firms trade off the benefits of debt (tax benefits and mitigating the free cash flow problem) against the costs of debt (bankruptcy costs and agency costs of debt). Therefore, firms with high bankruptcy costs and agency costs of debt tend to have low leverage, while firms with more tax benefits and severe agency problem of free cash flows tend to have high leverage. Alternatively, the pecking order model suggests that firms prefer internal funds over external funds to finance their investments. If internal finance is not sufficient, firms prefer debt over equity. Issuing equity is the last procedure. The information asymmetry problem produces this pecking order behavior (Myers, 1984; Fama & French, 2002). This research investigates the determinants of financial leverage of 52 service firms listed on Istanbul Stock Exchange during the period from 2008 to 2017. Our results showed that profitability, liquidity and tangibility are negatively and significantly related to leverage. This means that more profitable firms and firms with more liquidity and tangible assets tend to have low leverage. These results confirm the predictions of the pecking order model, which suggests that firms with more internal funds tend to be less levered. Accordingly, profitable firms and firms with more liquidity have more internal funds and thus tend to have low leverage. Information asymmetry problem is mitigated in the presence of tangible assets. Hence, the pecking order model predicts a negative relationship between tangible assets and leverage, because equity is less costly under the conditions of low information asymmetry (Frank & Goyal, 2009). Moreover, the results indicated that firms with more growth opportunities tend to issue more leverage, which is consistent with the pecking order model. On the other hand, we find a positive and significant relation between leverage and firm size, which is consistent with the trade-off model. However,

contradicting the trade-off model, the results showed a positive relation between leverage and non-debt tax shields.

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Özet

Dengeleme teorisine göre, firma performansını maksimize etmek için borcun marjinal faydaları ile marjinal maliyetleri arasında bir denge gerçekleştirilmelidir. Borç kullanımı arttıkça borç faydaları ve maliyetleri artar. Borcun faydaları maliyetlerinden daha fazla olduğu sürece firma performansı yükselir, ancak borç maliyetleri faydalarını aştığında firma performansı düşer. Borcun marjinal faydaları ile marjinal maliyetleri arasında denge noktasında firma performansı en yüksek düzeye ulaşır. Borcun faydaları, vergi kalkanı ve öz sermayenin vekâlet maliyetlerinin azaltılması; borcun maliyetleri ise iflas maliyetleri ve borcun vekâlet maliyetlerini kapsamaktadır. Dengeleme teorisi, firmanın büyüklüğü, karlılık, maddi duran varlıklar ve likiditenin finansal kaldıraç üzerinde pozitif yönde; büyüme fırsatları, risk ve borç dışı vergi kalkanı ise finansal kaldıraç üzerinde negatif yönde etkilediğini varsaymaktadır.

Dengeleme teorisine karşı, Myers (1984) tarafından hiyerarşik sıralama "Pecking Order" sermaye yapısının alternatif teorisi olarak sunulmuştur. Hiyerarşik sıralama yaklaşımına göre, firma (yöneticiler) ve yatırımcılar arasındaki bilgi asimetrisi maliyetleri nedeniyle, firmanın yeni yatırımları önce iç finansman ile finanse edilir. Sonra güvenli borçla, daha sonra riskli borçla ve sonunda zorlama altında öz sermaye (hisse senedi ihracı) ile finanse edilmektedir. Bu finansman sıralamasının nedeni, bilgi asimetrisi varlığında dış finansman maliyeti daha yüksek olacaktır, dolayısıyla iç finansman dış finansmana tercih edilmektedir. Hiyerarşik sıralama teorisi finansal kaldıraç ile firma büyüklüğü ve büyüme fırsatları arasında ilişki pozitif; finansal kaldıraç ile karlılık, risk, maddi duran varlıklar ve likidite arasında ilişki ise negatif olduğunu varsaymaktadır.

Baker ve Wurgler (2002) tarafından piyasa zamanlaması teorisi sunulmuştur. Piyasa zamanlaması teorisine göre, yöneticiler, maliyetinin irrasyonel olarak düşük olduğuna inandıkları zaman hisse senedi ihraç eder; maliyetinin irrasyonel olarak yüksek olduğuna inandıkları zaman ise öz sermayeyi geri alırlar. Piyasa değeri yüksek olduğunda finansal kaldıraç düşer ve öz sermaye yükselir. Piyasa değeri düşük olduğunda finansal kaldıraç yükselir ve öz sermaye düşer. Diğer bir ifadeyle finansal kaldıraç ile piyasa değeri arasında negatif bir ilişki vardır.

Bu çalışma 2008-2017 yılları arasında Borsa İstanbul'da (BİST) hisse senetleri işlem gören 52 hizmet firmanın finansal kaldıracını etkileyen faktörleri araştırmıştır. Bu çalışmada, firma büyüklüğü, büyüme fırsatları, karlılık, faaliyet riski, borç dışı vergi kalkanı, maddi duran varlıklar ve likiditenin finansal kaldıraç üzerindeki etkisi analiz edilmiştir. En küçük kareler yönetimini (OLS) kullanarak çalışmanın sonuçları, finansal hiyerarşi modelinde varsayıldığı gibi, kaldıracın büyüme fırsatları ile arttığını ve karlılık, likidite ve maddi duran varlıklar ile azaldığını göstermiştir. Hiyerarşik sıralama yaklaşımına göre, iç finansman dış finansmana tercih edilir. İç finansman yetersiz olduğunda yatırım ve büyüme fırsatlarını finanse etmek için borçlanma özsermayeye tercih edilir. Karlılık ve likiditenin firmanın iç finansmanını yükselttiği için karlı ve yüksek likiditeye sahip olan firmalar daha az borçlanır. Maddi duran varlıkları yüksek olan firmalar bilgi asimetrilerine daha az maruz kalır. Bunun sonucu olarak öz sermaye finansmanı düşük maliyetli olur ve borç finansmanına tercih edilir.

Araştırma sonuçlarında, büyük firmaların yüksek kaldıraca sahip olduğu ortaya çıkmıştır. Büyük firmaların finansal sıkıntı ile karşılaşmaları ihtimali ve iflasa düşmesi olasılığı düşüktür. Ayrıca, büyük firmaların gelirlerinin belirsizliği ve değişkenliği daha azdır. Sonuç olarak dengeleme teorisi firmanın büyüklüğü arttıkça finansal kaldıracın arttığını varsaymaktadır. Bu çalışmada dengeleme modelinin tersine, kaldıraç ile borç dışı vergi kalkanı arasındaki ilişki pozitif ve anlamlı olduğu tespit edilmiştir. Yine çalışmada finansal kaldıraç ile faaliyet riski arasında anlamlı bir ilişki bulunamamıştır.