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Likiditenin Borç Üzerine Etkisi: Otomotiv Firmalarında Bir Uygulama

The Effect Of Liquidity On Liabilities: An Application In Automotive Companies[1]

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Öz

Likidite, kısa veya uzun vadeli borçların ödenme gücünü göstermektedir. Firmaların elde ettiği kârın artmasıyla, firmalardaki likit varlıklar artmaktadır. Türkiye'de faaliyet gösteren otomotiv firmalarının son yıllarda satışlarının arttığı görülmüş olup bunun sonucunda da işletmelerin kârları artmıştır. Kârın artması ile birlikte likiditenin artması da beklenmektedir. Çalışmada otomotiv firmalarının borç ödeme güçleriyle likiditeleri arasındaki ilişkinin incelenmesi amaçlanmaktadır. Uygulamada Borsa İstanbul'da faaliyet gösteren 11 otomotiv firmasının 2010-2017 yılları arası mali tablo verileri kullanılmıştır. Mali tablo verilerinden elde edilen; finansal kaldıraç oranı, nakit, alacaklar, stoklar, borçlar, hasılat değişkenleri ile panel veri analizi yapılmıştır. Otomotiv firmalarının %54 oranında borçlandıkları tespit edilmiştir. Analiz sonucunda finansal kaldıraç oranı ile alacaklar, borçlar, stoklar arasında pozitif yönlü; hasılat ve nakit varlıklar ile negatif yönlü ilişkisi olduğu tespit edilmiştir.

Anahtar Kelimeler: Likidite, Finansal Kaldıraç, Çalışma Sermayesi, Otomotiv Sektörü, Finans.

The Effect Of Liquidity On Liabilities: An Application In Automotive Companies

Abstract

Liquidity refers to the ability of an enterprise to pay off its short or long term liabilities. The higher the profit of companies, the more the liquid assets. The sales, and consequently the profits of automotive companies operating in Turkey have been increasing in the last few years. Liquidity is expected to increase with the increase of profits. The aim of the study is to investigate the correlation between solvency and liquidity of automotive companies. In the application, the eight-year (2010-2017) financial statement data of 11 automotive companies operating in the Istanbul Stock Exchange (Turkey) were used. A panel data analysis was conducted using financial leverage ratio, cash, receivables, inventories, liabilities and revenue variances obtained from the financial statement data. It was determined that automotive companies had 54 percent of their assets in debts. As a result of the analysis, it was determind that there was a positive correlation between financial leverage ratio and receivables, liabilities and inventories, whereas there was a negative correlation between financial leverage ratio and revenues and liquid assets.

Keywords: Liquidity, Financial Leverage, Working Capital, Automotive Sector, Finance.

1. Introduction

The sales and profits of automotive companies operating in Turkey are increasing every year. Exports have increased especially with the depreciation of the Turkish lira against the US dollar. In particular, the cost of automobiles produced in Turkey is lower than those produced abroad. Thus, exports in the automotive sector have increased and gained importance in Turkey. Automobile companies are investing more to produce more. Inventories and trade receivables increase with the increase in production. In addition, borrowing is also increasing. For these reasons, liquidity is required to keep sufficient cash. Furthermore, there is an increase in assets and liquidity of automotive companies with the increase in production. Therefore, it is useful to examine the liquidity and assets of companies.

Table 1 shows the amounts and rankings of the 2017 total and liquid assets (cash and cash equivalents) of the automotive companies trading on the Istanbul Stock Exchange (Turkey).

Table 1: The amounts and rankings of the 2017 total and liquid assets of the automotive companies

Company's Name	Total Assets		Cash and etc.	
	Total ($)	Number	Total ($)	Number
Ford Automotive Industry Inc.	3.666.503.184	1	477.220.358	2
Tofas Turk Automobile Factory Inc.	3.176.740.745	2	693.835.320	1
Otokar Automotive and Defense Industry Inc.	531.032.688	3	60.502.074	3
Anadolu Isuzu Automotive Industry and Trade Inc.	482.531.867	4	26.020.372	5
Karsan Automotive Industry and Trade Inc.	384.082.655	5	4.291.866	9
Ege Industry and Trade Inc.	331.092.215	6	56.459.778	4
Persan Machine Parts Industry Inc.	138.624.245	7	2.112.651	10
Katmerciler On-Vehicle Equipment Industry and Trade Inc.	114.326.780	8	9.500.558	6
Bosch Brake Systems Industry Trade Inc.	24.962.499	9	8.521.528	7
DITAS Dogan Spare Parts Manufacturing and Technical Inc.	20.627.480	10	1.444.449	11
Federal-Mogul Izmit Piston and Pin Production Plants Inc.	13.336.946	11	6.561.355	8

The values given in the table are converted from Turkish Lira to American Dollars. The effective exchange rate of The Central Bank of the Republic of Turkey was taken on 29th December, 2017. The Ford Automotive Industry Inc. ($ 3.67 billion), Tofas Turk Automobile Factory Inc. ($ 3.18 billion) and Otokar Automotive and Defense Industry Inc. ($ 531 million) rank first,

second and third, respectively, in terms of total asset while the Federal-Mogul Izmit Piston and Pin Production Plants has the lowest total asset ($ 13.3 million). The Tofas Turk Automobile Factory Inc. ($ 693,8 million), Ford Automotive Industry Inc. ($ 477,2 million) and Otokar Automotive and Defense Industry Inc. ($ 60.5 million) rank first, second and third respectively in terms of liquid asset while the DITAS Dogan Spare Parts Manufacturing and Technical Inc. ($ 1.44 million) has the lowest liquid asset. Figure 1 shows the liquid assets/total assets for companies in 2017 rate with graph.

Figure 1: The liquid assets/total assets for companies in 2017 Rate (%)

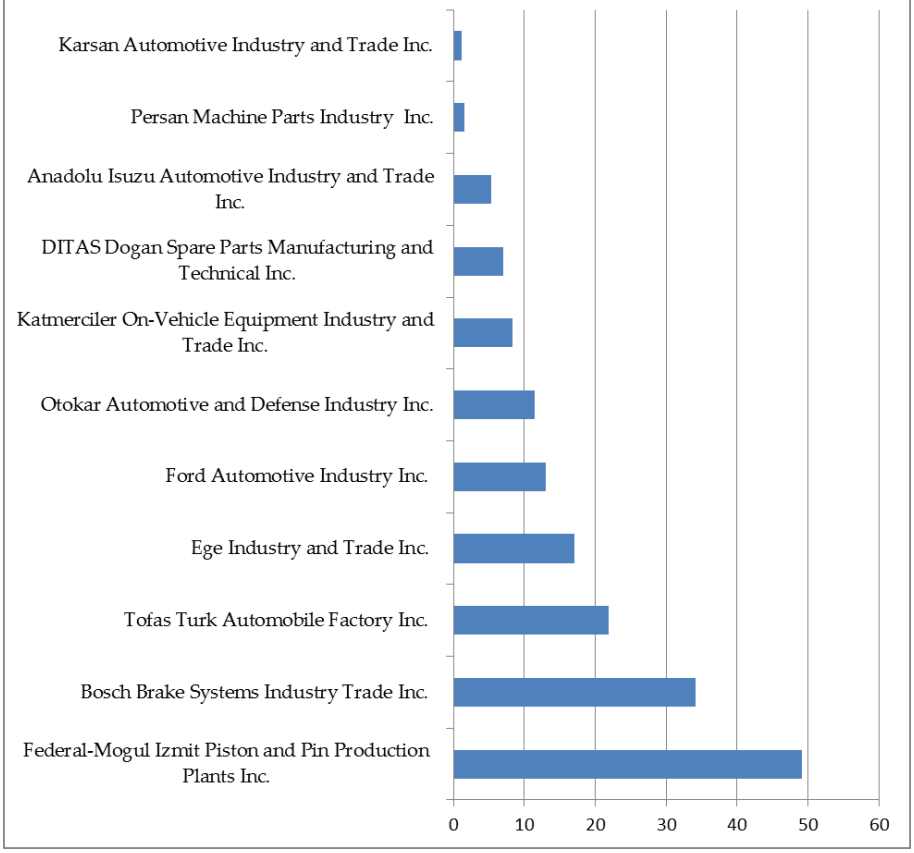

Table 2 shows the liquid assets/total assets for companies in 2017.

Table 2: The liquid assets/total assets for companies in 2017

Company's Name	**Rate (%)**
Federal-Mogul Izmit Piston and Pin Production Plants Inc.	49,20
Bosch Brake Systems Industry Trade Inc.	34,14
Tofas Turk Automobile Factory Inc.	21,84
Ege Industry and Trade Inc.	17,05

Ford Automotive Industry Inc.	13,02
Otokar Automotive and Defense Industry Inc.	11,39
Katmerciler On-Vehicle Equipment Industry and Trade Inc.	8,31
DITAS Dogan Spare Parts Manufacturing and Technical Inc.	7,00
Anadolu Isuzu Automotive Industry and Trade Inc.	5,39
Persan Machine Parts Industry Inc.	1,52
Karsan Automotive Industry and Trade Inc.	1,12

The Federal-Mogul Izmit Piston and Pin Production Plants (49.20%), Bosch Brake Systems Industry Trade Inc. (34.14%), Tofas Turk Automobile Factory Inc. (21.84%) and Ford Automotive Industry Inc. (13.02%) rank first, second, third and fourth, respectively, in terms of ratios (cash and cash equivalents divided by total assets) while the Otokar Automotive and Defense Industry Inc. (11.39%), which ranks third in terms of total asset, ranks fifth in terms of ratios. The Karsan Automotive Industry and Trade Inc. (1.12%) has the lowest ratios. The liquid assets/total assets ratios show that firms with low cash flow have more liquid assets.

Figure 2 shows trade debt/total assets for companies in 2017 rate with graph.

Figure 2: Trade debt /total assets for companies in 2017 Rate(%)

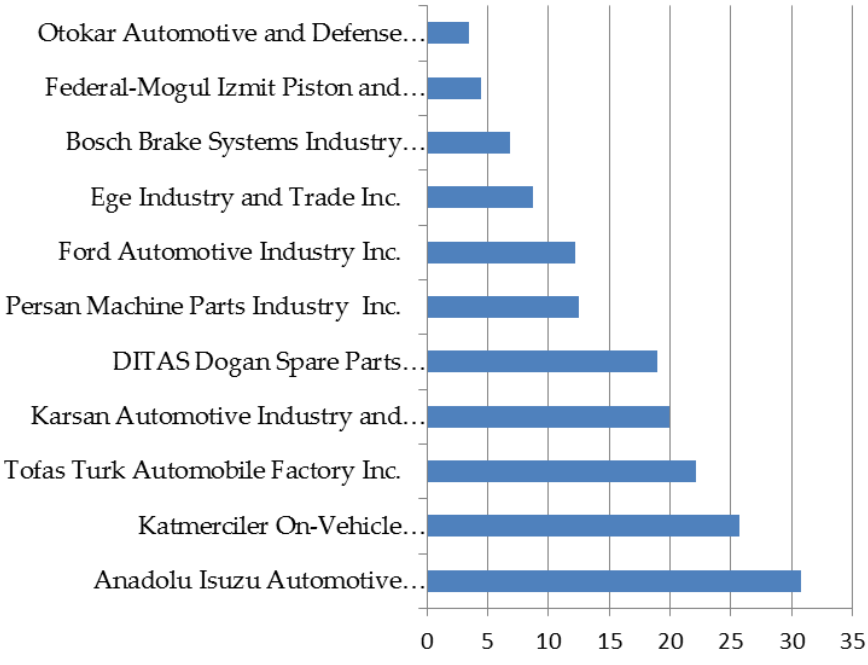

Table 3 shows trade debt/total assets for companies in 2017 rate .

Table 3: Trade debt /total assets for companies in 2017

Company's Name	Rate(%)
Anadolu Isuzu Automotive Industry and Trade Inc.	30,82
Katmerciler On-Vehicle Equipment Industry and Trade Inc	25,7
Tofas Turk Automobile Factory Inc.	22,13
Karsan Automotive Industry and Trade Inc.	19,94
DITAS Dogan Spare Parts Manufacturing and Technical Inc.	18,97
Persan Machine Parts Industry Inc.	12,47
Ford Automotive Industry Inc.	12,16
Ege Industry and Trade Inc.	8,72
Bosch Brake Systems Industry Trade Inc.	6,84
Federal-Mogul Izmit Piston and Pin Production Plants Inc.	4,4
Otokar Automotive and Defense Industry Inc.	3,48

The Anadolu Isuzu Automotive Industry and Trade Inc. (30.82%), Katmerciler On-Vehicle Equipment Industry and Trade Inc. Co. (25.70%) and Tofas Turk Automobile Factory Inc. (22.13%) rank first, second and third, respectively, in terms of accounts payable/total liabilities ratios. The Tofas Turk Automobile Factory Inc. has lower liquid assets than trade liabilities. The Federal-Mogul Izmit Piston and Pin Production Plants iswiththe highest liquid asset ratio ranks tenth (4.40%) in terms of trade liabilities ratio. TheBosch Brake Systems Industry Trade Inc. is with the second highest liquid asset ratio ranks ninth (6.84%) in terms of trade liabilities ratio. Some firms' liquid assets are not sufficient to pay their trade liabilities. It is, therefore, important to examine the effect of firms' liquid assets on their solvency.

Assessing the success of automotive companies is an important source of data for their future planning. Financial analysis, therefore, plays an important role in the assessment of firms' financial performance (Bayburt, 2007, p. 578). There are many methods used to assess financial performance. However, the most commonly used ones are financial statement analysis techniques. Ratio analysis is a financial statement analysis method and is often used by firms to assess financial performance (Karadeniz et al. 2014, p. 131). Four ratios are used in ratio analysis: liquidity, financial structure ratios, operating ratios and profitability ratios (Akdogan & Tenker, 2007, p. 643). Ratio analysis establishes a mathematical relationship between financial statement accounts, and ratios are calculated by dividing the monetary amounts of accounts by each other. The ratios have been calculated to determine the relationship between the liquidity and liabilities of the companies. Using ratio analysis of variables about liquidity and

liabilities is considered to be more useful for analysis. This study investigates the relationship between automotive companies' liquidity and liabilities. We believe this study will contribute to the literature.

2. Literature

In this section, the concept of liquidity is examined in the first chapter. Literature review is given the second chapter.

2.1.Concept of Liquidity

Liquidity is defined as the rate at which an asset can be converted into cash while maintaining its value (Kocoglu et al. 2016, p. 90) and depends on two important factors: 1) the rate at which an asset is converted into money; and 2) an asset's ability to maintain its nominal value over time (Aksoy & Yalciner, 2008, p. 78). Liquidity consists of cash and cash equivalents (Akan, 2008, p. 66) and is exposed to various risks such as foreign exchange and interest (Cagdas& Gursoy, 2003).When the liquidity is high, the solvency raises (Saldanli, 2012, p. 175). Excess liquid assets increase the cost of working capital (Akbulut, 2011, p. 197) and deprive a firm of income from alternative investment instruments. Therefore, liquidity should be managed to achieve an optimal balance between risk and profitability (Poyraz, 2012, p. 48).

Liquidity management is an important part of working capital management. Firms often do not take working capital into account in financing policies and long-term capital budgeting decisions (Richards & Laughlin, 1980, p. 32). Inadequate working capital can lead to a decrease in real liquidity (Okka, 2010, p. 85). Although long-term funding sources are required in investment decisions, the management of current assets requires short-term resources because firms should have sufficient cash to pay for their trade and current liabilities. Besides cash and cash equivalents, liquid assets obtained from credit card, commercial and other receivables are also used for the payment of debts. As there is no cost, firms use withholdings payable and liquid assets for tax payment instead of held-to-maturity liquid assets.

There are two concepts related to liquidity: technical liquidity and true liquidity. Technical liquidity refers to the ability of a firm to havesufficient liquidity to pay its liabilities. True liquidity is the ability of a firm to pay all its liabilities in the liquidation process (Poyraz, 2012, p. 50). If firms do not have sufficient liquid assets to pay their accrued or overdue liabilities, then they turn to alternative financial sources, which are generally overdraft accounts or short-term loans. Firms' interest expenses depend on borrowing conditions. When firms are unable to pay their due liabilities, they borrow again to pay them, which, in turn, increase their financing costs. It is only natural that firms benefit from leverage effect in order to increase their market values. However, borrowing that exceeds the debt limit decreases firms' value. Therefore, firms are expected to benefit from financial leverage ratio and to borrow up to the point that maximizes the value of the firm (Ercan & Ban, 2008, p. 189).

Liquidity ratios are generally used to assess liquidity. Current ratio, liquidity ratio and cash ratio are the most commonly used liquidity ratios. Various financial structure ratios are used as liquidity indicator. In this study, financial leverage ratio and ratio of short term liabilities/total liabilities was used to investigate the relationship between liquidity and solvency.

2.2. Literature Review

Studies generally focus on liquidity risk, especially in the banking sector. In this study, the liquidity risk in the banking sector is not mentioned. Studies on the liquidity risk of non-financial firms aregiven in this section.

Senol and Karaca (2017) investigated the impact of financial risks on firm value in 35 firms trading on the Istanbul Stock Exchange (Turkey). They reported that liquidity risk negatively affects firm value.

Benmelech et al. (2016) they examined whether the liquidity of the automotive sector is affected by the crisis in USA. It is stated that Firms did not attract customers' loans during the financial crisis and consequently the sales of automobiles decreased. They find that it is very important credit for the illiquidity in short-term. Zengin and Yuksel (2016) assessed liquidity risk in banks and reported that a decrease in net working capital ratio and an increase in net interest margin result in an increase in liquidity risk. Isil and Ozkan (2015) analyzed the liquidity risk of Islamic Banks and reported that liquidity risk and credit expansion has an effect on credit risk.

Having focused on the relationship between liquidity and financial crisis, Campello et al. (2011) investigated the impact of the 2008 global financial crisis on firms' cash and credit management. They determined that firms are more likely to use their credit lines during favorable economic conditions.

There are also studies that establish a relationship between liquidity and profitability ratios. Saleem and Rehman (2011) examined the relationship between liquidity and profitability ratios, and reported that liquidity ratios (current ratio, liquidity rate, cash ratio) have an effect on return on assets (ROA) and return on investment (ROI) ratios but not on return on equity (ROE).

Some studies examine the impact of working capital financing policies on liquidity and profitability. Poyraz (2012) investigated the effect of working capital financing strategies on profitability and determined that working capital ratio is negatively correlated with profitability ratios.Wang (2002) examined the effect of cash cycle on ROA and ROE in Japanese and Taiwan firms and determined that aggressive liquidity management affects firm value. Baum et al. (2006) examine the relation between short debt and long debt. They aim firm value maximization about debt. They find that a firm, it has short debt more than long debt,has more profitable the other. Jose et al. (1996) analyzed the 21-year data of firms using multiple regression analysis

in order to determine the relationship between profitability and liquidity. They concluded that aggressive working capital management has no effect on profitability.

3. Material and Method

The aim of this study is to investigate the effect of firms' liquidity on their solvency. The study sample consisted of 11 automotive companies trading on the Istanbul Stock Exchange. Automotive companies' net profits increase every year, which, in turn, increase their liquidity. Therefore, assessing the impact of firms' financial performance on their liabilities will contribute to the literature. The list of the companies is given in Table 4.

Table 4: The list of the companies

Numbers	Company's Name
1	Anadolu Isuzu Automotive Industry and Trade Inc.
2	Bosch Brake Systems Industry Trade Inc.
3	DITAS Dogan Spare Parts Manufacturing and Technical Inc.
4	Ege Industry and Trade Inc.
5	Federal-Mogul Izmit Piston and Pin Production Plants Inc.
6	Ford Automotive Industry Inc.
7	Karsan Automotive Industry and Trade Inc.
8	Katmerciler On-Vehicle Equipment Industry and Trade Inc
9	Otokar Automotive and Defense Industry Inc.
10	Persan Machine Parts Industry Inc.
11	Tofas Turk Automobile Factory Inc.

Many studies measured stock liquidity while some others examined the effect of working capital elements on stock price and profitability. This study examines the effect of firms' liquidity on their solvency. Liquidity ratios are used to measure liquidity. Since there is no similar study on the subject, the model developed in this study will contribute to the literature. A model has been developed to measure the automotive companies' liquidity andsolvency. Table 5 shows the codes of variables, data types, frequencies and data sources in the model.

Table 5: Variables and Data Set

Variables	Codes	Types	Frequency	Data Sources
Financial Leverage	FL	Dependent	Years	Financial Statements
Total Cash	CASH	Independent	Years	Financial Statements
Total Receivable	REC	Independent	Years	Financial Statements

Total Invetory	INV	Independent	Years	Financial Statements
Revenues	REV	Independent	Years	Financial Statements
Total Debt	DEBT	Independent	Years	Financial Statements

2008-2017 data was going to be used in the study;however, the 2008 global financial crisis affected firms' activities and working capital elements (Isik & Kiraci, 2012). Yildirim (2011) determined that Turkey was exposed to liquidity risk less than the US in the 2008 global financial crisis. Considering the fact that the 2008 global financial crisis might have affected all companies on a global scale, we used data from 2010 on. The financial leverage ratio used was calculated using the financial statement data of the firms. The logarithms of the financial variables (except financial leverage ratio) were used in the analysis.

Financial leverage ratio is the dependent variable in the model. Financial leverage ratio is calculated by dividing total debt by total liabilities. It shows how much of the assets are financed by liabilities. Financial leverage ratio is included as a dependent variable in order to assess the firms' liquidity and liabilities. The total liabilities in the model are the firms' trade liabilities. There is a direct relationship between sales revenues and liquidity. The higher the sales revenue, the higher the liquidity, and therefore, the higher the solvency. Moreover, the higher the liquidity, the higher the receivables turnover. Receivables in the model are trade receivables. The higher the sales, the higher the receivables turnover, and thus, the higher the liquidity. Inventories refer to liquid assets converted into commercial products. The higher the inventories, the lower the liquidity. Decreasing inventories results in a decrease in receivables and liquid assets. The highest liquidity is cash, which is used directly to pay liabilities. The higher the liquid assets, the higher the liquidity. Cash and cash equivalents are used in the model. The higher the liabilities, the higher the financial leverage ratio. There should be sufficient liquid assets for the payment of liabilities.

It is not possible to use econometric methods other than panel data analysis in case of more than one cross-section in time series. Several horizontal and vertical sections require panel data analysis. Panel data consists of a combination of multiple horizontal sections such as households, companies and countries, and multiple time sections (Baltagi, 2005: 1). The formula used in panel data regression analysis is as follows (Baltagi, 2005: 11):

$$y_{it} = \alpha + X'_{it}\beta + u_{it} \quad i = 1, \dots\dots N; t = 1, \dots\dots T$$

$i$is the number of firms, t is the time series, u_{it} is the coefficient of error, α is the constant, X'_{it} is theit number of observations and $\beta$is the coefficient of explanatory variables (Guris, 2018, p.7). There are several panel data analysis methods, the most common of which are fixed effects, random

effects, pooled regression and stochastic parameters (Green, 2010, p.386-387). There are also balanced and unbalanced panel data models (Baum, 2006, p.46-51). Unbalanced panel data analysis is used when a dataset has missing data on some years (Tatoglu, 2013, p.1). Since the data sets of all variables are the same, balanced panel data method was used. Hausman test is used to decide which method to use in panel data analysis. Hausman test is used to decide which estimators to use in panel data analysis (Tatoglu, 2018, p.184). The study model is as follows.

$$FL_{it} = \alpha + \beta_1 CASH_{it} + \beta_2 REC_{it} + \beta_3 INV_{it} + \beta_4 REV_{it} + \beta_5 DEBT_{it} + u_{it}$$

Financial leverage ratio is the dependent variable while liquid assets, receivables, inventories, revenues and liabilities are the independent variables. The logarithms of all variables except financial leverage ratio were used.

4. Findings

The first part of this section addresses the descriptive statistics of the variables. Hausman and Breusch Pagan tests were used to determine the model of the analysis in the second part of this section. The final part shows the results of the panel data random effects method analysis. Table 6 shows the descriptive statistics of the variables in the model.

Table 6: The Descriptive statistics of the variables

Variables	Mean	Std. Dev.	Min.	Max.
Financial Leverage	0,5405682	0,2624962	0,0500	1,3000
Total Debt	8,6235870	0,8095226	7,4510	10,4038
Revenues	7,7430820	0,9213654	5,9500	9,5872
Total Receivable	7,9402300	0,7587745	6,4362	9,5262
Total Invetory	7,6948250	0,8381891	6,0814	9,0616
Total Cash	7,4914560	0,9675433	5,5327	9,4192

The financial leverage ratio ranges from 0.05 to 1.30 (mean: 0.54). Therefore, the automotive companies' ratio of liabilities to total assets is 54%. It is seen that companies are given a weighted financing with a little liabilities. It is thought that the rate is normal for sector. The total liabilities range from 7.45 to 10.40, revenues from 5.95 to 9.58, total receivables from 6.43 to 9.52, total inventories from 6.08 to 9.06 and total cash from 5.53 to 9.41. As the variables take logarithmic value, it is not possible to make any comments about variables.

Hausman Test was used to decide whether to use fixed effects or random effects in panel data analysis. Therefore it is very important for it is used in analysis which method. Table 7 shows the Hausman Test results.

Table 7: Hausman test result				
	(b) Fixed Effect	(B) Random Effect	b-B	S.E.
Total Debt	0,3851035	0,3670696	0,018034	0,0367888
Revenues	-0,4210386	-0,4500679	0,0290294	0,0721317
Total Receivable	0,2218568	0,2253541	-0,0034972	0,0270776
Total Invetory	0,114314	0,101646	0,012668	0,0169109
Total Cash	-0,0694717	-0,0700557	0,0005841	0,009564
Prob > Chi2 = 0. 8896				

According to the Hausman test results, the random effects model should be used (Prob > 0.05). But the other method can be valid for analysis, too. Therefore Breusch-Pagan Test was used to decide which method of least squares method or pooled least squares method was to be used. Table 8 shows the Breusch-Pagan test results.

Table 8: Breusch-Pagan test result		
	Var	st = sqrt(var)
Financial Leverage	0,0689043	0,2624962
e	0,0151946	0,1232665
u	0,0261612	0,1617442
		chibar2(01) = 68.69
		Prob > chibar2 = 0.0000

According to the Breusch-Pagan test results, the random effects model should be used (Prob < 0.05). The analysis has been according to random effects and Table 9 shows the results of the panel data random effects analysis.

Table 9: Panel Data Random Effect Analysis Results				
Observations =88	R-sq: 0,5478		Wald chi2(5) = 58.35	
Company=11			Prob>Chi2=0.0000	
Financial Leverage	**Coefficient**	**Std. Dev.**	**z**	**P>z**
Total Debt	0,3670696	0,0919804	3,99	0.000
Revenues	-0,4500679	0,1269821	-3,54	0.000
Total Receivable	0,2253541	0,0966314	2,33	0.020
Total Inventory	0,101646	0,0534814	1,9	0.050
Total Cash	-0,0700557	0,029956	-2,34	0.019

Constant	-0,4671731	0,4617272	-1,01	0.312

Panel data analysis was performed with 88 observations of 11 companies. The explanation power of the model (%54) is quite high compared to similar studies. Therefore, the model is statistically significant. According to analysis results, there is a positive relationship between financial leverage ratio and total liabilities. When financial leverage ratio increases by 1%, total liabilities increase by 36%. Financial leverage ratio increases with an increase in liabilities; therefore, the positive relationship between the two is an expected result. Companies must pay attention over indebtedness. If they cannot pay due debts, they may face liquidity risk.

The other result shows there is a negative relationship between sales revenue and financial leverage ratio. Sales revenues affect financial leverage ratio by 45%. The total liabilities to total assets ratio increase with a decrease in sales revenues. The total liabilities to total assets ratio decrease with an increase in sales revenues. More cash is earned as sales revenues increase. However, it is important to evaluate the cash obtained from sales in the best. Thus, liabilities can be paid.

The total receivables increase by 22%, as the financial leverage increases by 1%. Therefore, the financial leverage ratio increases with an increase in trade receivables. Moreover, the financial leverage ratio is expected to decrease with a decrease in receivables because inventory is sold for cash at a profit and some of the inventory is purchased in cash and some on credit. If the companies collect their receivables on time, they do not have any liquidity risk.

When the company saleincreases, if the receivables increase more than cash, the company's cash assets have decreased. Therefore, there is a positive relationship between inventory and financial leverage ratio. A 1% increase in inventory results in a 10% increase in financial leverage ratio. Total inventory increases trade liabilities and reduces liquidity. Thus inventory turn rate should be high. There is a negative relationship between liquid assets and financial leverage ratio. A 1% reduction in liquid assets results in a 7% decrease in liabilities. When liabilities are paid off, liquid assets and financial leverage ratio decrease.

5. Conclusion

Liquidity plays an important role in the efficient management of liquid assets. The effective management of liquid assets increases liquidity. The signs that liquid assets are not effectively managed are as follows: paying liabilities before the due date, investing liquid assets, purchasing excess inventory or holding excess liquid assets. Liquidity risk plays a significant role in the determination of solvency. Receivables should be collected as quickly as possible and liability terms should be as long as possible. In this

way, liquidity increases. Thus, the level of financial security of companies with high liquidity levels is increasing.

When financial leverage ratio increases by 1%, total liabilities increase by 36%. Financial leverage ratio increases with an increase in liabilities; therefore, the positive relationship between the two is an expected result. Increasing the financial leverage to a certain level increases the company's profits. If the company earns less than the capital cost, companies must reduce the borrowing amount. The high cost of capital may adversely affect the financial structure.

There is a negative relationship between sales revenue and financial leverage ratio. Sales revenues affect financial leverage ratio by 45%. The total liabilities to total assets ratio increases with a decrease in sales revenues. The total liabilities to total assets ratio can decrease with an increase in sales revenues. Companies can obtain more liquidity as cash sales. Therefore, they can use the money from sales to pay their debts.

A 1% increase in financial leverage results in a 22% increase in total receivables. Therefore, financial leverage ratio increases with an increase in trade receivables. There is a positive relationship between inventory and financial leverage ratio. Although there is no direct relationship between the receivables and the financial leverage, the possibility of the company to pay financial liabilities decreases if the receivables cannot be collected.

A 1% increase in inventory results in a 10% increase in financial leverage ratio. There is a negative relationship between liquid assets and financial leverage ratio. Buying inventory, trade liabilities can increase.As the inventories have a low cash conversion rate, optimum inventory availability can lower the financial leverage.

A 1% reduction in cash et al. results in a 7% decrease in liabilities. When liabilities are paid off, cash et al. decrease. It is recommended that the cash assets be at a sufficient level. Having more than enough cash is deprived of alternative earnings.

An increase in automotive companies' profit and profitability increases their liquidity. The automotive companies' high receivables, inventories, liabilities and fixed assets require the effective management of liquid assets. The effective management of total assets leads to an increase in liquidity, and thus, in profit and profitability. Liquidity can positively affect the value of companies. The liquidity of the stocks of automotive companies traded in the stock market can be studied in the next in literature. Further research on working capital management in automotive companies and factors affecting their value will contribute to the literature.

Reference

Akan, N. B. (2008). Likidite Riski Olcumu. Bankacilar Dergisi(66), 66-81.

Akbulut, R. (2011). IMKB'de imalat sektorundeki isletmelerde isletme sermayesi yonetiminin karlılık uzerindeki etkisini olcmeye yonelik bir arastırma. İstanbul Universitesi Isletme Fakultesi Dergisi, 40(2), 195-206.

Akdogan, N., & Tenker, N. (2007). Finansal Tablolar ve Mali Analiz Teknikleri. Ankara: Gazi Kitabevi.

Aksoy, A., & Yalcıner, K. (2008). Isletme Sermayesi Yonetimi. Ankara: Gazi Kitabevi.

Bayburt, N. (2007). Isletmelerde Performans Degerlendirmenin Onemi ve Performans Gostergeleri Arasındaki İliskiler. Sosyal Siyaset Konferansları Dergisi, 0(53), 577-592.

Baum, C. F., Schäfer, D. &Talavera, O. (2006). The Effects of Short-Term Liabilities on Profitability: The Case of Germany, The Quarterly Journal of Economics, 132(1), 317-365.

Benmelech, E., Meisenzahl, R. R. & Ramcharan, R. (2017). The Real Effects of Liquidity During the Financial Crisis: Evidence From Automobiles, Short-Term Liabilities on Profitability: The Case of Germany, DIW Discussion Papers, No. 635, Deutsches Institut fur Wirtschaftsforschung (DIW), Berlin.

Campello, M., Harvey, E. G., Graham, J. R., & R.Harvey, C. (2011). Liquidity Management and Corporate Investment During a Financial Crisis. The Review of Financial Studies, 24(6), 1944–1979.

Cagdas, B., & Gursoy, C. T. (2003). Sirketlerde finansal risk yonetimi amacli bir modelin gelistirilmesi yontem ve asamalar. İTÜ Muhendislik Dergisi, 2(3), 55-64.

Ercan, M. K., & Ban, U. (2008). Finansal Yonetim. Ankara : Gazi Kitabevi.

Isıl, G., &Ozkan, N. (2015). Islami Bankalarda Likidite Riski Yonetimi: Türkiye'de Katilim BankaciligiUzerine Ampirik Bir Uygulama. International Journal of Islamic Economics and Finance Studies, 1(2), 23-37.

Jose, M. L., Lancaster, C., & Stevens, J. L. (1996). Corporate returns and cash conversion cycles. Journal of Economics and Finance, 6, 20-33.

Karadeniz, E., Kosan, L., & Kahilogulları, S. (2014). Borsa Istanbul'da Islem Goren Spor Sirketlerinin Finansal Performansının Oran Yontemiyle Analizi. Cukurova Universitesi Sosyal Bilimler Enstitusu Dergisi, 23(2), 129-144.

Kocoglu, S., Cevik, Y. E., & Tanrioven, C. (2016). Bitcoin Piyasalarinin Etkinligi, Likiditesi ve Oynakligi,Isletme Arastırmaları Dergisi, 8(2), 77-97.

Okka, O. (2010). Finansal Yonetim. Ankara: Nobel Yayıncılık.

Poyraz, E. (2012). Isletme Sermayesi Finanslama Stratejilerinin Karlılık Oranları Uzerindeki Etkisi (Akbank T.A.S. Uygulaması). Dokuz Eylul Universitesi Iktisadi ve Idari Bilimler Fakultesi Dergisi, 27(1), 47-56.

Richards, V. D., & Laughlin, E. J. (1980). A Cash Conversion Cycle Approach to Liquidity Analysis. Financial Management, 9(1), 32-38.

Saldanlı, A. (2012). Likidite ve Karlilik Arasindaki Iliski - IMKB 100 Imalat Sektorü Uzerine Ampirik Bir Calısma. Suleyman Demirel Universitesi Sosyal Bilimler Enstitusu Dergisi(16), 167-176.

Saleem, Q., & Rehman, R. U. (2011). Impacts of liquidity ratios on profitability (Case of oil and gas companies of Pakistan). Interdisciplinary Journal of Research in Business, 1(7), 95-98.

Senol, Z., & Karaca, S. S. (2017). Finansal Risklerin Firma Degeri Uzerine Etkisi: BIST Ornegi. Gazi İktisat Dergisi, 3(1), 1-18.

URL1. (2018). Anadolu Isuzu Otomotiv Sanayi ve Ticaret A.S., https://www.anadoluisuzu.com.tr/yatirimci-iliskileri/faaliyet-raporlari, (Date accessed: 01.11.2018).

URL2. (2018). Bosch Fren Sistemleri Sanayi Ticaret A.S., https://www.boschfren.com.tr/, (Date accessed: 01.11.2018).

URL3. (2018). DITAS Dogan Yedek Parca Imalat ve Teknik A.S., http://www.ditas.com.tr/yatirimci-iliskileri-raporlar-ve-sunumlar, (Date accessed: 01.11.2018).

URL4. (2018). Ege Endustri ve Ticaret A.S., http://egeendustri.com.tr/bilgi_toplumu_hizmetleri_yatirimci_iliskileri_birimi, (Date accessed :10.12.2018).

URL5. (2018). Federal-Mogul Izmit Piston ve Pim Uretim Tesisleri A.S., https://www.kap.org.tr/tr/sirket-bilgileri/ozet/951-federal-mogul-izmit-piston-ve-pim-uretim-tesisleri-a-s, (Date accessed: 01.11.2018).

URL6. (2018). Ford Otomotiv Sanayi A.S., https://www.fordotosan.com.tr/tr/yatirimcilar/yatirimci-iliskileri-anasayfasi, (Date accessed: 01.11.2018).

URL7. (2018). Karsan Otomotiv Sanayi ve Ticaret A.S., https://www.karsan.com.tr/tr/yatirimci-iliskileri/kurumsal-yonetim/ortaklik-yapisi-yatirimci-iliskileri, (Date accessed: 01.11.2018).

URL8. (2018). Katmerciler Arac Ustu Ekipman Sanayi ve Ticaret A.S., http://www.katmerciler.com.tr/L/TR/mid/363/g/363/Yatirimci-Iliskileri.html, (Date accessed: 01.11.2018).

URL9. (2018). Otokar Otomotiv ve Savunma Sanayi A.Ş., https://www.otokar.com.tr/tr/yatirimci-iliskileri, (Date accessed: 01.11.2018).

URL10. (2018). Persan Makine Parcalari Sanayi A.S., http://www.parsan.com/index.php/parsan-iletisim/, (Date accessed: 01.11.2018).

URL11.(2018). Tofas Turk Otomobil Fabrikasi A.S., https://tofas.com.tr/YatirimciIliskileri/GenelBakis/Pages/default.aspx, (Date accessed: 01.11.2018).

Wang, Y. J. (2002). Liquidity management, operating performance, and corporate value: evidence from Japan and Taiwan. Journal of Multinational Financial Management, 12(2), 159-169.

Yıldırım, B. D. (2011). Türkiye'nin Finansal Piyasa Likiditesi, Olcümü ve Analizi. Central Bank Review(11), 11-28.

Zengin, S., & Yuksel, S. (2016). Likidite riskini etkileyen faktorler: Türk bankacılık sektoruuzerine bir inceleme. Istanbul Ticaret Universitesi Sosyal Bilimler Dergisi, 77-95.