

# **Impact Of Usd Credit Interest Rates, Libor Rates, Net Sales, Turkey’s Tourism Revenues On Total Liabilities Levels Of The Tourism Which Firms Quoted In Borsa Istanbul During 2001-2014 Period**

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**Abstract:** *Tourism sector is mostly important for all potential countries. In this study tourism firms in Turkey were studied aspect of total liabilities as the focus subject during 14 years period in 2001-2014. The firms were quoted in Borsa Istanbul in same years. As a result of two type of panel data analysis/study: total liabilities of analysed companies are in inverse relation with USD loan rates and Libor interest rates. In other words, it was determined that a reduction in USD loan rates and Libor interest rates would reflect positively on total liabilities. According to this, it can be said that companies would prefer to go into debt in case of a reduction in loan and libor interest rates. A positive relation between these companies’ “total liabilities” amount and “net sales” amount has been determined. The effect of an increase in one of them should be an increase on the other as well. These companies interaction with Turkey’s tourism income must be positive, as it is with their net sales. In other words, borrowing decisions of these companies are affected by a reduction in interest rates or Libor rates being low and their net sales amount.*

**Keywords:** *Tourism Firms, Total Liabilities, Credit Interest Rates, Libor* JEL Classification: *G15, G20, G21*

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## **I. Introduction**

Tourism sector in our country, as it is in the world, one of the most important sectors for like every country which has tourism capacity or potential.

Owing to structure of the tourism sector, countries’ or firms’ realized income is in globally accepted currencies. Consequently countries keep on their tourism revenues as USD or other available currencies.

Herewith, for firms/individuals in tourism sector, credit interest rates and Libor rates in market are usually very important in order to debt.

In this study, especially tourism sector firms selected as the way of revenues are mostly as foreign currency, USD, in Turkey. And all data used (total liabilities, net sales) are USD included Turkey’s tourism revenues.

## **II. Liabilities Level And Account Mean**

In financial accounting, a liability is defined as “the future sacrifices of economic benefits that the entity is obliged to make to other entities as a result of past transactions or other past events” (AASB, 2015; 2016.03.06). Liabilities provides economic benefits in the future to company by investing.

Generally, a liability is an obligation, a responsibility to owners/investors. Liabilities are usually categorized as “current” or “long-term”. A current liability is an amount owed that will become due within one year. A long-term liability is an amount owed that will not fall due within one year. These are situated on balance sheet.

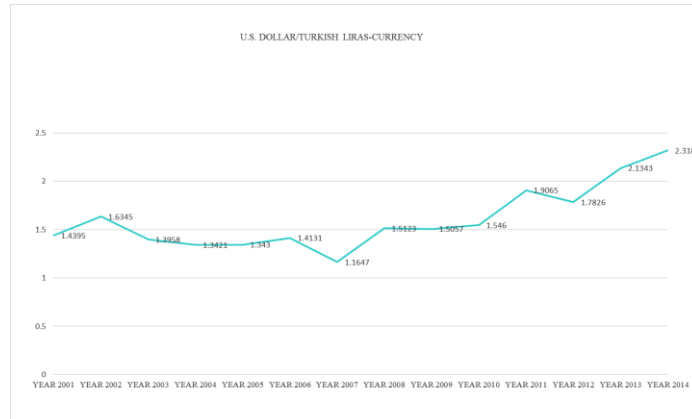
In this study liabilities regarded as totally (short term+long term liabilities).

## **III. Literature Review**

As a result of research, the similar study of Kahiloğulları and Karadeniz (2015) is acquired. “The study is to analyze financial structure and preference of lodging companies that issues traded in European and Turkish stock markets by using ratio analysis technique”. As a result of that study, “it is determined that Turkish lodging companies use mainly equity while European lodging companies prefer liabilities and debt to finance their activities. In respect to maturity of liabilities it is determined that European lodging companies prefer long term debt while Turkish lodging companies use short term liabilities. Finally, it is determined that European lodging companies use leasing but no Turkish lodging companies to choose leasing”.

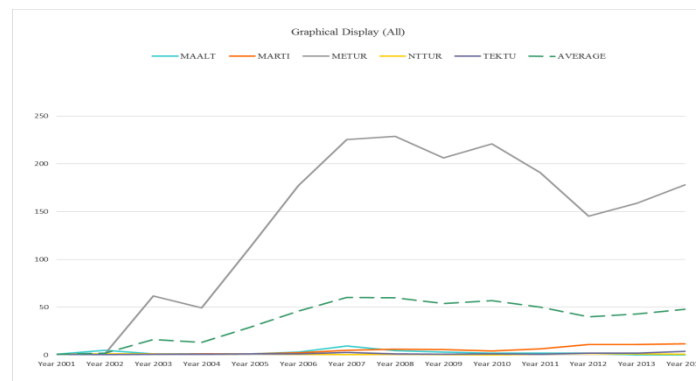
#### IV. Graphical Analysis

In order to see 2001-2014 for 14 years period as graphically these graphics are created. According to graphic 1 currency is shifted %61.09 from 2001 to 2014.



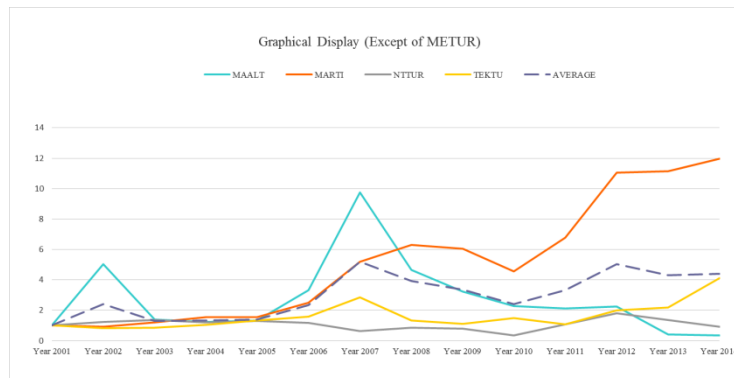
**Graphic 1 :USD and Turkish Liras Currency in 2001-2014**

It can be seen in the graphic 2 of 5 companies' total liabilities . METUR's total liabilities level is highly changed according to others. Because of that, graphic 3 is created as except of METUR.



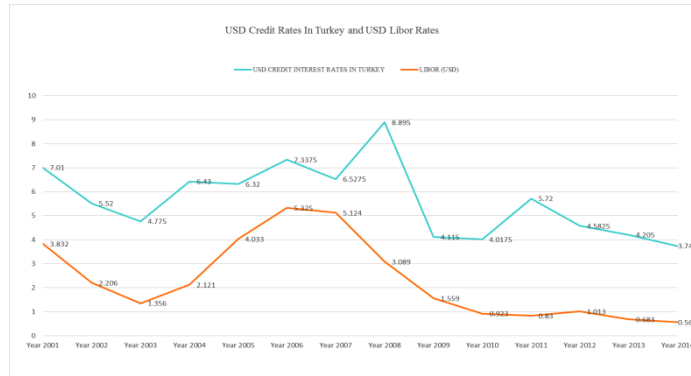
**Graphic 2 :Total Liabilities of Companies in 2001-2014**

It can be seen is graphic 3, 14 years trend of 4 companies' liabilities (except of METUR) and average of them. In particular, there is a continuing upward trend in MARTI. After 2007, there are first fall and then continuity in others.



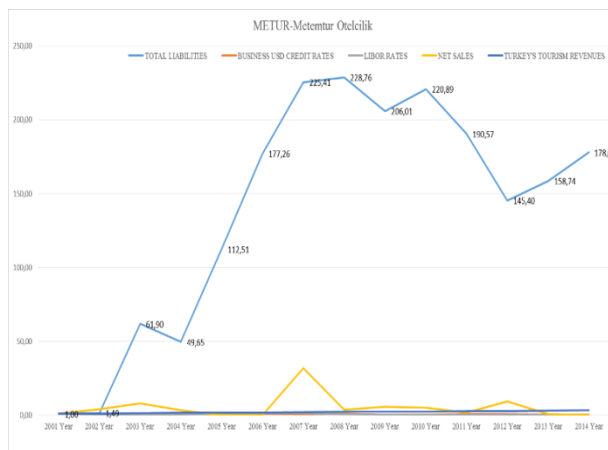
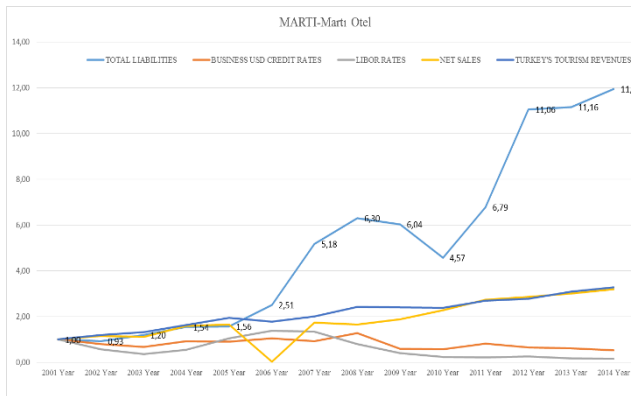
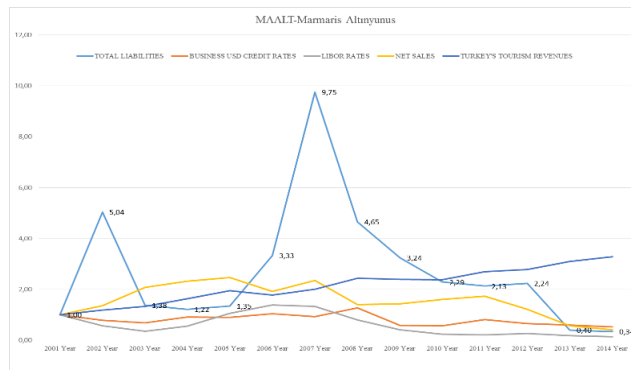
**Graphic 3:Total Liabilities of Companies in 2001-2014 (Except of METUR)**

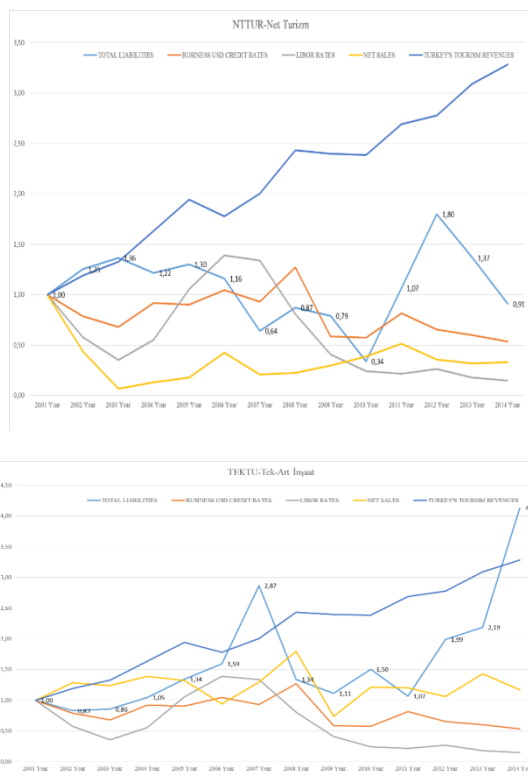
When graphic 2-3 and 4 study together, dept level started to getting higher during 2006 and 2007. As shown in graphic 4 credit and libor rates got decrease 2006-2007 period. These indexes show that by depending on interest rates, borrowing demand gets higher.



**Graphic 4:** USD Credit Rates In Turkey and Libor Rates in 2001-2014

In this instance, how is change trend (in year according to previous one)? It can be seen in graphic 5: In MAALT, MARTI and especially in METUR year on year growth rate of total liabilities are obvious. In NTTUR and TEKTU fluctuating trend were observed.





**Graphic 5:**Change Trends of Companies (MAALT, MARTI, METUR, NTTUR, TEKTU) in 2001-2014

## V. Methodology

According to Maddala (2001), Panel (data) analysis is a statistical method, widely used in social science, epidemiology, and econometrics, which deals with two and “n”-dimensional (in and by the - cross sectional/times series time) panel data.

“The data are usually collected over time and over the same individuals and then a regression is run over these two dimensions. Multidimensional analysis is an econometric method in which data are collected over more than two dimensions (typically, time, individuals, and some third dimension)” (Davies and Lahiri, 1995:68).

According to the explanation in summary of Bilginoğlu and Maraş (2011) who benefited from many resources, panel data set and panel data management have some important advantages. Some of these advantages are followings:

- Panel data enables multiple observations to be carried out related to each individual's changes in the course of time who is in the sample;
- Panel data can be used for creating and testing more complicated behavioural models than time series and cross sectional data;
- Panel data can control heterogeneity of individuals, governments, countries or companies. Time series and cross sectional series alone, can not control heterogeneity;
- Panel data can be used when dealing with situation of not being congenerous in micro units. In any cross section, there are countless unmeasurable variables which influence behaviours of research subject units. Excluding these variables will lead to biased estimations. Panel data, on the other hand, can overcome this problem.
- Panel data can improve the degree of freedom by providing a large scope of data to researchers and can decrease the multicollinearity problem between explanatory variables.
- By creating a variability, Panel data decreases the multi linearity by means of combining the difference between one period to another and the difference between micro units;

Because panel data gained a very important position in connection to scientific researches in our day, panel data analysis had been used in this study to analyse the data as a result of this important position's effect.

### 5. 1.Panel Data Analysis On 5 Companies In Tourism Sector Between 2001-2014 Years

This study is on tourism companies which are quoted in Borsa İstanbul between 2001 and 2014. 14 years period of that companies are analyzed.

There are 13 companies in “restaurants and hotels” subsector in Borsa İstanbul. But 5 companies are selected for analysis, because, only these companies all datas could be acquired. The 5 companies as below:

**Table 1: 5 Firms In Study**

Number	Code	Company
1	MAALT	Marmaris Altinyunus Turistik Tesisler A.Ş.
2	MARTI	Martı Otel İşletmeleri A. Ş.
3	METUR	Metemtur Otelcilik ve Turizm İşletmeleri A. Ş.
4	NTTUR	Net Turizm Ticaret ve Sanayi A. Ş.
5	TEKTU	Tek-Art İnşaat Ticaret Turizm Sanayi ve Yatırımlar A. Ş.

Source:www.kap.gov.tr (02.03.2016)

In this study, “total liabilities level of these companies”, “USD credit interest rates”, “libor rates”, “net sales of these companies”, “tourism revenues of Turkey” is analysed by panel data analysis by e-views 8 program.

Especially, as dependant variable: “total liabilities level of these companies”; as independant variables: “USD credit interest rates”, “libor rates”, “net sales of these companies”, “tourism revenues of Turkey”. Impact of independant variables on dependant variable “total liabilities of these companies” is analyzed.

Due to size of table it could not be added in article. If any reader wants it can be send.

Panel data analysis is performed on totally 350 datas of 14 years of per companies.

USD Business Credit Interest Rates (CRED); Libor Rates (LIBOR); Net Sales of Companies (SALES); Turkey's Tourism Revenues per Year (REVENUE) used in panel data analysis.

The econometric model is:

$$LIAB_{it} = \beta_0 + \beta_1 CRED_{it} + \beta_2 LIBOR_{it} + \beta_3 SALES_{it} + \beta_4 REVENUE_{it} + \varepsilon_{it}$$

In first step pooled least squares of companies between 2001-2014 is calculated:

**Table 2: Pooled Least Squares of Companies Between 2001-2014**

Dependent Variable: Liabilities Level of Companies (LIAB)	Coefficient	Std. Error	t	P> t
USD Business Credit Interest Rates (CRED)	-3314759.	2736892.	-1.211140	0.2302
Libor Rates (LIBOR)	1050539.	3554911.	0.295518	0.7685
Net Sales of Companies (SALES)	2.439023	0.258917	9.420088	0.0000
Turkey's Tourism Revenues per Year (REVENUE)	0.000814	0.000414	1.967279	0.0534
R <sup>2</sup>	0.603882			
Adjusted R <sup>2</sup>	0.585876			
Method	Pooled Least Squares			
Study Year Period	2001-2014			
Study Company Count	5			
Study Year Count	14			
Total pool (balanced) observations	70			

In the second step, “fixed effect” and “random effect” parameters has been estimated by the model in order to find individual effects of the company.

Then, to select statistical optimal model whether random or fixed, Hausman test is performed.

Hypothesis are:

H<sub>0</sub> : Random effects model should be used.

H<sub>1</sub> : Fixed effects model should be used.

By Hausman test results, probability ( significance level ) values with table values (  $\alpha$  ) were compared Because of probability = 1.000 > 0.050, H<sub>0</sub> hypothesis is accepted. So there is random effect, the model must be estimate by random effect.

**Table 3:** Hausman Test Results of Companies Between 2001-2014

Hausmann Test	Coefficients		Variance	Prob.
	Fixed Effect	Random Effect		
USD Business Credit Interest Rates (CRED)	-329487.441152	-340656.001408	22036692.273438	0.0174
Libor Rates (LIBOR)	437670.379063	586844.356700	3931317892.246094	0.0174
Net Sales of Companies (SALES)	1.486649	1.843948	0.022554	0.0174
Turkey's Tourism Revenues per Year (REVENUE)	0.001469	0.001418	0.000000	0.0174
$\chi^2$ Chi-Sq. Statistic	0.0000			
$\chi^2$ (Chi-Sq. d.f.)	4			
Probability	1.0000			

According to result of Hausman test Random effect model has selected. Random effect results are as Table 4:

**Table 4:** Random Effect Results of Companies Between 2001-2014

Pooled EGLS (Cross-section random effects)					
Dependent Variable: Liabilities Level of Companies	Coefficient	Std. Error	t	P> t	
USD Business Credit Interest Rates (CRED)	-21429304	21182219	-1.011665	0.3154	
Libor Rates (LIBOR)	-340656.0	3082225.	-0.110523	0.9123	
Net Sales of Companies (SALES)	586844.4	2981603.	0.196822	0.8446	
Turkey's Tourism Revenues per Year (REVENUE)	1.843948	0.296461	6.219862	0.0000	
R <sup>2</sup>	0.443977				
Adjusted R <sup>2</sup>	0.409760				
F Statistics	12.97541				
Probability (F Statistics)	0.000000				

According to random effect results in table above, according to R<sup>2</sup> result there are effects of parameters in positive direction.

**According to application results;**

- It's determined that total liabilities of analysed companies are in inverse relation with USD loan rates and Libor interest rates. In other words, It was determined that a reduction in USD loan rates and Libor interest rates would reflect positively on total liabilities. According to this, it can be said that companies would prefer to go into debt in case of a reduction in loan and libor interest rates.
- A positive relation between these companies' "total liabilities" amount and "net sales" amount has been determined. The effect of an increase in one of them should be an increase on the other as well.
- These companies interaction with Turkey's tourism income must be positive, as it is with their net sales.

In this respect, It is seen that an increase in borrowings/liabilities of these analysed companies is affected by the status of the net sales within the corporate body, as a company outside relation, a positive interaction or prospect has been seen in an increase in tourism income which includes these companies' data, as it did in net sales.

Also, It's seen that net sales has a positive effect in increasing liabilities of these companies, and reduction in USD loan rates and Libor interest rates has a positive effect as well.

In other words, borrowing decisions of these companies are affected by a reduction in interest rates or rates being low and their net sales amount.

**If the analysis by fixed effect:**

**Table 5:** Fixed Effect Results of Companies Between 2001-2014

Pooled EGLS (Cross-section Fixed effects)					
Dependent Variable: Liabilities Level of Companies	Coefficient	Std. Error	t	P> t	
USD Business Credit Interest Rates (CRED)	-329487.4	3082229.	-0.106899	0.9152	
Libor Rates (LIBOR)	437670.4	2982262.	0.146758	0.8838	
Net Sales of Companies (SALES)	1.486649	0.332329	4.473420	0.0000	
Turkey's Tourism Revenues per Year	0.001469	0.000499	2.941175	0.0046	

(REVENUE)			
R <sup>2</sup>	0.743213		
Adjusted R <sup>2</sup>	0.709536		
F Statistics	22.06889		
Probability (F Statistics)	0.000000		

According to random effect results in table above, according to R<sup>2</sup> (0.74) result there are effects of parameters in positive direction.

**According to application results;**

- It's determined that total liabilities of analysed companies are in inverse relation with only USD loan rates. In other words, it was determined that a reduction in USD loan rates would reflect positively on total liabilities. According to this, it can be said that companies would prefer to go into debt in case of a reduction in loan interest rates. That is different in Libor unlike loan interest rate (as conversely random effect test).
- A positive relation between these companies' "total liabilities" amount and "net sales" amount has been determined. The effect of an increase in one of them should be an increase on the other as well. Also these companies interaction with Turkey's tourism income must be positive, as it is with their net sales.

As a result, borrowing decisions of these companies are affected by a reduction in loan interest rates being low and their net sales amount.

**5. 2. As Alternative: Study On The Process Of Change**

In this step of study, same parameters regarded as process of change (change percentage).USD Business Credit Interest Rates (CRED); Libor Rates (LIBOR); Net Sales of Companies (SALES); Turkey's Tourism Revenues per Year (REVENUE) used in panel data analysis.

The econometric model is:

$$LIAB_{change} = \beta_0 + \beta_1 CRED_{change} + \beta_2 LIBOR_{change} + \beta_3 SALES_{change} + \beta_4 REVENUE_{change} + \epsilon_{change}$$

In first step pooled least squares of companies between 2001-2014 is calculated:

**Table 6:** Pooled Least Squares of Companies Between 2001-2014 For Change Percentage

Dependent Variable: Liabilities Level of Companies For Change Percentage (LIAB <sub>change</sub> )	Coefficient	Std. Error	t	P> t
USD Business Credit Interest Rates For Change Percentage (CRED <sub>change</sub> )	-12.63329	36.72644	-0.343984	0.7320
Libor Rates For Change Percentage (LIBOR <sub>change</sub> )	0.613611	26.61866	0.023052	0.9817
Net Sales of Companies For Change Percentage (SALES <sub>change</sub> )	7.803405	1.756207	4.443328	0.0000
Turkey's Tourism Revenues per Year For Change Percentage (REVENUE <sub>change</sub> )	11.65356	8.214514	1.418656	0.1607
R <sup>2</sup>	0.260164			
Adjusted R <sup>2</sup>	0.226535			
Method	Pooled Least Squares			
Study Year Period	2001-2014			
Study Company Count	5			
Study Year Count	14			
Total pool (balanced) observations	70			

In the second step, "fixed effect" and "random effect" parameters has been estimated by the model in order to find individual effects of the company. Then, to select statistical optimal model whether random or fixed, Hausman test is performed.

Hypothesis are:

H<sub>0</sub> : Random effects model should be used.

H<sub>1</sub> : Fixed effects model should be used.

By Hausman test results, probability (significance level) values with table values (α) were compared. Because of probability = 0.000 < 0.050, H<sub>1</sub> hypothesis is accepted. So there is fixed effect, the model must be estimate by fixed effect.

**Table 7: Hausman Test Results of Companies Between 2001-2014 For Change Percentage**

Hausmann Test <sub>change</sub> (For Change Percentage)	Coefficients		Variance	Prob.
	Fixed Effect	Random Effect		
USD Business Credit Interest Rates For Change Percentage (CRED <sub>change</sub> )	7.905731	11.935875	0.545159	0.0000
Libor Rates For Change Percentage (LIBOR <sub>change</sub> )	12.235274	8.927515	0.367240	0.0000
Net Sales of Companies For Change Percentage (SALES <sub>change</sub> )	2.538642	3.877014	0.060122	0.0000
Turkey's Tourism Revenues per Year For Change Percentage (REVENUE <sub>change</sub> )	22.985459	22.556392	0.006179	0.0000
X <sup>2</sup> Chi-Sq. Statistic	29.793276			
X <sup>2</sup> (Chi-Sq. d.f.)	4			
Probability	0.00000			

According to result of Hausman test fixed effect model has selected. Fixed effect results are as Table 8:

**Table 8: Fixed Effect Results of Companies Between 2001-2014 For Change Percentage**

Pooled EGLS (Cross-section fixed effects)					
Dependent Variable: Liabilities Level of Companies For Change Percentage(LIAB <sub>change</sub> )	Coefficient	Std. Error	t	P> t	
USD Business Credit Interest Rates For Change Percentage (CRED <sub>change</sub> )	7.905731	28.73528	0.275123	0.7842	
Libor Rates For Change Percentage (LIBOR <sub>change</sub> )	12.23527	15.37325	0.795881	0.4292	
Net Sales of Companies For Change Percentage (SALES <sub>change</sub> )	2.538642	1.127038	2.252491	0.0279	
Turkey's Tourism Revenues per Year For Change Percentage (REVENUE <sub>change</sub> )	22.98546	6.917378	3.322857	0.0015	
R <sup>2</sup>	0.774236				
Adjusted R <sup>2</sup>	0.744627				
F Statistics	26.14919				
Probability (F Statistics)	0.000000				

According to random effect results in table above, according to R<sup>2</sup>(0.77) result there are effects of parameters in positive direction.

**According to application results;**

It's determined that change percentage of total liabilities in analysed companies are in same direction/positive relation with USD loan rates, Libor and net sales whereat Turkey's tourism revenues in 2001-2014.As a result, according to these result, borrowing decisions of these companies are affected by positive direction by them.

**VI. Evaluat □on And Result**

In our country, as it is in the world, because of the structure of the tourism sector, the income is realized in globally accepted currencies and because countries usually keep their tourism income in USD even though they have their own currencies, in this study the income and other accounting items of these analysed companies has been considered in USD as well.

In the first part of the study a panel data analysis has been performed by considering all data in USD and as a whole, and according to the inverse relation between these companies total liabilities and USD loan rates and Libor interest rates, it is concluded that loan and libor rates are considered when these companies decide to incur a debt and/or liability. These companies' net sales increase being in the same direction with the increase in their liabilities indicates that the companies which increase their sales can be more willing to incur a liability.

In the second part of the study a panel data analysis has been performed by growth rate (or change percentage) according to previous year. It's determined that change percentage of total liabilities in analysed companies are in same direction/positive relation with USD loan rates, Libor and net sales whereat Turkey's tourism revenues in 2001-2014.As a result, according to these result, borrowing decisions of these companies are affected by positive direction by them.



Because a country's tourism sector can be directly affected by many factors globally in a positive or negative way, a conclusion has been presented on the basis of financial data by ruling out some unusual factors during the period of 14 years, which this study covers.

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