

Traces of Gambling Tendencies in Equity Market Investments

Sermaye Piyasası Yatırımlarında Kumar Eğilimlerinin İzleri

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Abstract: Investors may prefer to allocate funds to stock markets via fundamental analysis or technical analysis. They may want to base their decisions on some form of quantitative analysis. However, sometimes the assumption that investors are rational may not hold for equity markets for various reasons. Equity markets provide the fun and excitement for risk takers. Gamblers may voluntarily take part in financial markets with differing rationales and they may have significant impact on trading volumes of certain markets. This study aims to provide evidence for the presence of gambling in the equity markets mainly, in an IPO Index, watch list market and the stock market. To serve this purpose, gamblers impact on the trading volume of the stock market is studied. A cointegration analysis is performed to deny any long run relation of trading volume of BIST 100 index with various independent variables so that the lottery like, short term investment intentions of gamblers become clearer. Similarly, a multi regression is run to point out the substitution effect between total gambling revenues and trading volume of BIST 100 index. A statistically significant t-value of -2,70, shows the inverse relationship and favors substitution effect between other gambling instruments and stock market. The result also discredits discussions about increasing gambling activities helping markets to improve. Watch list market is also analyzed in terms of market capitalization. What variables drive this market is questioned in this paper and suspected determinants such as volume of the main market BIST 100, USD/TRY parity, level of employment, results of Economic outlook survey conducted by the Central Bank of Turkey and yield of 10-year treasury bonds are found to be statistically insignificant on the change in the watch list market. Thus, the market is found to be another instrument for gamblers by a regression analysis.

Structured Abstract: Stock markets in developing countries are not favored by public as bank deposits, foreign exchanges, real estate or gold. The safer instruments are preferred due to financial illiteracy, punitive past experiences or stories of acquaintants and any other reason. Still, stock markets attract attention who seek higher returns despite unfamiliarity, fragilities and uncertainties of the economy. Two options are available for the uninformed traders; one is to get informed, which requires effort and may be tedious, and the other is to act on hearsay or gut feeling which requires no effort. In the former case, investors may prefer to allocate funds to stock markets via fundamental analysis or technical analysis. They may want to base their decisions on some form of quantitative analysis. However, sometimes the assumption that investors are rational may not hold for

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equity markets for various reasons. For the latter case, equity markets provide the fun and excitement for risk takers. Gamblers may voluntarily take part in financial markets with differing rationales and they may have significant impact on trading volumes of certain markets. This study aims to provide evidence for the presence of gambling in the equity markets mainly, in an IPO Index, watch list market and the stock market. To serve this purpose, gamblers impact on the trading volume of the stock market is studied. Normally, rational investors consider long term relations when they trade. Prior to estimations, variables that may have linkages to gambling such as population excluded from labor force, IPO

Index returns and trade volume, and growth expectations are expected to deny any long term relation with the market volume. A cointegration analysis is performed to deny any long run relation of trading volume of BIST 100 index with the above mentioned independent variables so that the lottery like, short term investment intentions of gamblers become clearer. Normally, a maximum rank of 1 would show that at least one variable has a long term relation with the trading volume of BIST 100 but none exists. Similarly, a multi regression test is run to point out the substitution effect between total gambling revenues and trading volume of BIST 100 index. Gambling revenues are annual and are composed of IDDA revenues, TJK (horse races) and National Lottery revenues. Illegal gambling revenues and online website revenues are excluded as finding accurate data is hard if not impossible. When gamblers loose in casinos, they may try horse races. When they lose in horse races, betting on sport may attract them. How about stock market? Pay offs are secured by the governmental exchange commissions. Rules are simple and straight forward; buy low, sell higher. It may seem 50 % chance. In order to determine the presence of gamblers in the stock market, total revenues of gambling and the return of BIST 100 is regressed with the trading volume of the BIST100 Index. A positive relation is expected between gambling revenues and the trading volume of the Index but a statistically significant t-value of -2,70 at 5 % and the constant is also significant at 5% with a t value of 2.51. The results of the regression test show the inverse relationship between gambling revenues and the market volume and supports substitution effect between other gambling instruments and stock market. Some argue that gambling habits gradually diffuse in a society and it helps financial markets as new monies enter the market but results of this study also discredit these discussions about increasing gambling activities helping markets to improve. Watch list market is also analyzed in terms of market capitalization. What variables drive this market is questioned in this paper and suspected determinants such as volume of the main market BIST 100, USD/TRY parity, level of employment, results of Economic outlook survey conducted by the Central Bank of Turkey and yield of 10-year treasury bonds are found to be statistically insignificant on the change in the watch list market. Probably, some omitted variables may explain some portion of the change but as we have failed to detect any. In the light of our earlier findings in the IPO Index and the BIST100 Index, we offer gambling habits within the community to be a factor in explaining the drastic changes in this dangerous market. Making trades that promise a negative average return but a few unlikely jackpots cannot attract rational investors. Thus, the market is found to be another instrument for gamblers by a regression analysis.

Keywords: Stock Markets, Gambling, IPO Index, Watch List Market, Substitution Effect

Öz: Yatırımcılar gerek temel gerekse de teknik analiz yoluyla hisse senedi piyasalarına fonlarını yönlendirmeyi tercih edebilirler. Kararlarını bir çeşit nicelikseke analize dayandırmak isterlerse de, bazen yatırımcıların akılcı olduğu varsayımı çeşitli sebeplerden dolayı sermaye piyasalarında gerçekleşmez. Sermaye piyasaları risk almayı sevenlere ihtiyaç duydukları eğlenceyi ve heyecanı sağlarlar. Farklı nedenlerle kumarbazlar sermaye piyasalarında gönüllü olarak yer alırlar ve belli piyasaların işlem hacimlerine belirgin bir şekilde tesir ederler. Bu çalışmanın amacı, ana olarak halka arz endeksi ve gözüaltı pazarı olmak üzere, kumarın hisse senedi piyasasındaki varlığına dair kanıtlar sunmaktır. . Bu maksatla, kumarbazların hisse senedi piyasasının işlem hacmi üzerindeki etkisi incelenmiştir. Kumarbazların piyango vari, kısa vadeli yatırımlarını göz önüne sermek adına, çeşitli bağımsız değişkenlerle, BIST100 endeksinin işlem hacmi arasında herhangi bir uzun vadeli ilişkiyi inkar eden bir eşbütünleşme analizi ortaya konmuştur. Benzer şekilde, ikame etkisini ortaya koyan, BIST 100 endeksi ile toplam kumar geliri arasında bir çoklu regresyon analizi gerçekleştirilmiştir. İstatistiksel olarak anlamlı -2,70 t değeri ters orantılı ilişkiyi göstermektedir ve diğer kumar araçları ve hisse senedi piyasası arasında ikame etkisi bulunduğu görüşünü desteklemektedir. Sonuçlar aynı zamanda artan kumar etkinliklerinin piyasaları geliştirdiğine dair görüşü desteklemez. Gözüaltı pazarı da analiz edilmiş olup, bu piyasanın da kumarbazlar için bir araç teşkil ettiği regresyon analizi ile ortaya konmuştur.

Anahtar Kelimeler: Borsalar, Kumar, Halka Arz Endeksi, İzleme Listesi Piyasası, İkame Etkisi

Introduction

Financial markets are advancing and consequently offering new instruments to investors in developing markets such as stocks, warrants, options and futures. Structurally, derivatives have higher risk; therefore, they offer higher returns. Relatively poor trading volume in these markets may be due to financial illiteracy but for argument sake; even when the whole society is aware of the mechanisms of these financial tools, who will be allured by them is the question this paper tries to answer. Risk averse investors may continue to refrain from these investments but risk takers or gamblers that may have lost in other venues may try their chance in these markets. If the argument is valid, an excess demand by them may improve equity markets.

Gamblers enjoy the game they win at and try to change track when they start to loose. Eventually, when they run out of gambling venues like casinos, race tracks, online sites etc. for the pursuit of change of luck, their attention may likely turn to equity markets where reaping the profit is secured by regulators that may lack in online websites. Gambling is a social phenomenon usually associated with sin by religion. The way religion tolerates gambling is found to be effective in financial markets and protestants are found to be stricter on gambling than Catholics (Kumar et al, 2011). It takes time for gambling to diffuse among a society and this paper aims to shed light to the gradual effects of gambling in terms of equity market development in a Muslim society.

IPOs do have a lottery structure that may attract gamblers but also long-run investors who believe in the future of these companies. Brokerage houses loose trade at times when large sum lotteries are drawn (Dorn et al, 2015) that one may construe the transitive nature of stock markets and gambling. One of the aim of this paper is to shed light to the long term relations of IPO Index. Denying any cointegration, short run motives of gamblers are expected to be detected.

This study aims to validate the presence of gamblers in Istanbul Stock Exchange. Explanatory power of gambling revenues on the trading volume of BIST 100 Index is analyzed. The paper provides evidence that stock markets may substitute well for gambling venues despite the arguments about gradual increase in the gambling habit in a society is expected to increase the trading volume and volatility, everything else held constant.

Total official gambling revenues and BIST volume relation is also analyzed and the positive or negative effect of gambling on the depth of the market is discussed in the second part. This study neglects the cultural, religious and social aspects as data gathering is problematic if not impossible.

Similarly, Watch List market is a high risk market where risk averse investors refrain from due its embedded default risk. If the company is delisted from this market and return to its earlier or a higher rank index, the stock offers high returns for gamblers. However, significant portion of the index go bankrupt and Investors lose everything. This bullet structure of this market is of interest for this paper The last part aims to find a statistically significant determinant other than gambling motivations.

1. History of Gambling in Turkey

The first lottery was drawn in 1926 and the right to regulate was given o Turkish Aviation Association. In 1939, general directorate of national lottery was authorized to regulate lotteries by law. The lottery was almost the sole instrument to gamble. It can be inferred that gambling was not relatively spread among the nation despite its historical roots. Casinos have started their operations in 1985 and had grown rapidly in Turkey till the decree that abolish their presence in 1998. The rationale behind the ban was to protect citizens from increasing number of suicides, family issues, social and religious unrest in the nation. The ban is opposed by the parties that emphasize the income and employment loss, however, the ban stands as of to date. Horse races and lotteries were allowed but the volume of these were relatively small. Inevitably, underground venues have taken

the place of regulated casinos. Figure 1 clearly depicts growth of IDDAA in terms of market share and the reason why this study has elected the starting date of IDDAA as a breakthrough in terms of diffusion of gambling in the society.

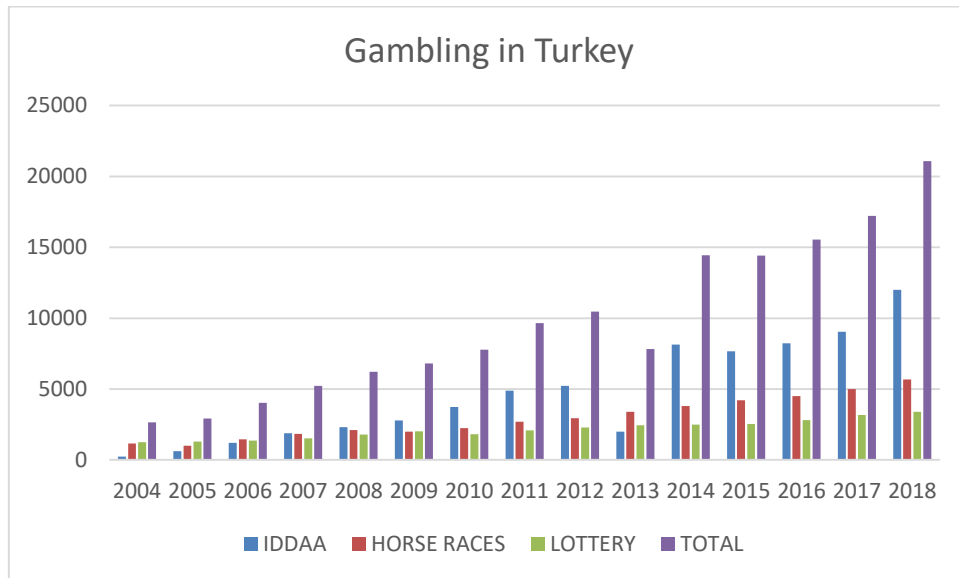


Figure 1: Gambling Revenues in Turkey, 2004-2018

Source: Generated by authors from TJK, National Lottery and Spor Toto Websites

The substantial change has occurred in April 2004, when IDDAA, sports betting, is allowed. The tendency to gamble in Turkish Culture can be inferred from the graph in Figure 2. Popularity of betting on sports matches have increased significantly in recent decades.

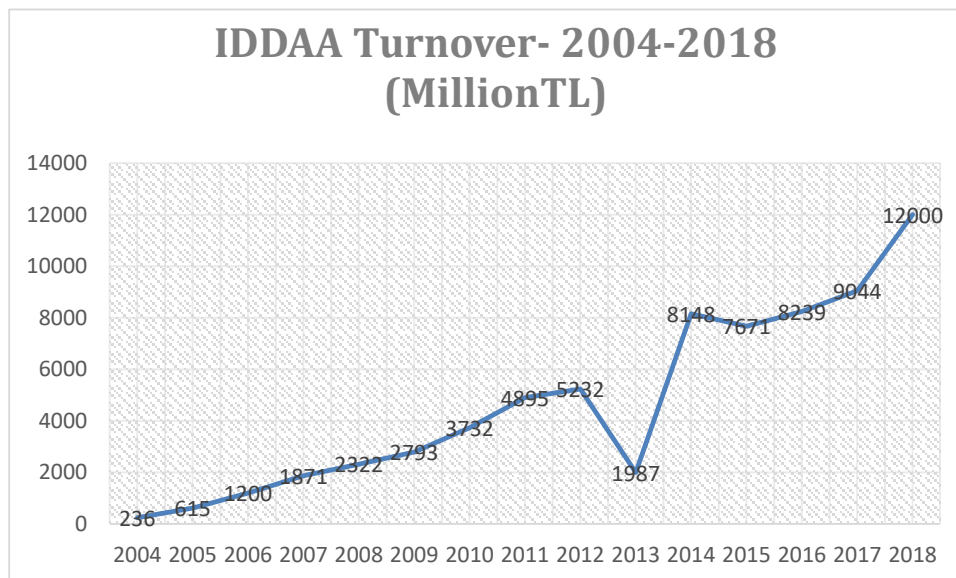


Figure 2: Official Sports Betting Turnovers, 2004-2017

Source: Spor Toto

2. Literature Review of Gambling in Equity Markets

Gambling dispersion in a society or culture is among the determinants of volatility in equity markets from a behavioral finance point of view. In a Country where online gambling is legal, gaming institutions are strong, and higher gambling loss is evident per person; one can expect relatively higher volatility in equity markets. Similar inference is made via cross sectional regression analysis of 32 countries with 211 ADRs. Interestingly, one percent increase in the number of gaming institutions in the home country is associated with an increase in volatility are found to be 5.4% to 7.9%; Whereas, one percent increase in gambling losses increases volatility by more than 20%. Moreover, countries that allow legal online gambling have ADR volatility that is about 8% higher. (Blau & Whitby, 2020). Past negative returns are found to be stronger in predicting future volatility than positive returns (Patton & Sheppard, 2015), which may indicate presence of risk takers looking for losing tables for a fresh start.

Low probability gains may be favored by gamblers which may result in securities with right skewed return distributions to deviate much from their intrinsic values (Berberis & Huang, 2008). It can be inferred that gamblers seek skewness in the distribution of returns despite average lower returns which violates the assumption that all investors are rational, they prefer more to less. Initial Public Offerings (IPOs) offer skewness to these investors and these issues are found to be lottery like (Green & Hwang, 2012)

Over the counter (OTC) stocks also exhibit positive skewness and have lower average returns, -2 % monthly alphas. Still, they attract attention by risk takers due to their extreme positive skewness. (Eraker and Ready, 2015). Similarly, since 2013, hundreds of Initial coin offerings (ICOs) have attracted a pool of investors due their lottery like nature. Only in 2018, 7.8 billion USD is raised via 254 ICOs which may as well indicate the gambling tendency (Fisch, 2019).

Option markets may serve as a black jack table if needs be. The payoff structures and the leverage embedded in these contracts allure informed gamblers. The premiums of these options may also over valued due to their lottery like features (Byun & Kim, 2016).

Gambling may also take many forms; horse racing, lotteries, betting on sports etc. Gambling habits in a society may alter risk tolerance levels of investors and trading routines in financial markets; higher trading activity leads to higher volatility (Shiller, 2000). Gambling tendency and stock market volatility relation has not been assessed widely in the literature maybe because it is hard to quantify the will to gamble. However, some studies put forth the fact that asset prices' volatility is higher than their expected volatility which may be attributable to the gambling tendencies of investors (LeRoy and Porter, 1981; Flavin, 1983). Similarly, volatility risk has been found significant for S&P 500 index; implied volatilities generally provide upward biased forecasts of future realized volatilities (Chernov, 2007; Bolerslev & Zhou, 2006). But prior studies also have provided evidence that there is a positive statistically significant link between trading activity and volatility (Schwert, 1989; Jones et al., 1994).

3. Structure of Istanbul Stock Exchange

Istanbul Stock exchange offers BIST 30, BIST 50 and BIST 100 for investors. Similar to her rivals, the exchange informs about the robustness of the shares via their listings. Investors may adjust their trades based on these listings and their risk tolerance levels. Delisting of shares from these indexes may signal poorer performance especially for risk averse investors. Similarly, watch list market is created to warn investors for the increased risks embedded in the shares involved. The increased risks are perceived differently by gamblers who focus on the higher return potential. BIST IPO Index is an interesting index for our paper to pin gambling activity in the market.

3.1. Watch list Market

Watch list market is composed of stocks that are close to bankruptcy. Stock exchange commission explicitly warns investors regarding with the stocks in watch list market. Once a stock

is listed in the market, a risk averse investors are expected to disinvest in these shares. However, these stocks have an embedded option in themselves;

Any stock may be moved to watch list market if they have negative audit reports; the company applied for chapter 11 or chapter 7; operations are halted for more than three months; negative net income in five consecutive years without a fair explanation; Equity to capital ratio to remain below 0.50; receivables from the affiliated parties to pass half of the total assets in the last two year's balance sheets; loss of two third of fixed assets. Similarly, the stocks in watch list market may regain their earlier status by improving their ratios and financial strength. The gamble here may be the betting on the likelihood of this come back via so called penny stocks.

3.2 BIST IPO (XHARZ) Index

BIST IPO index is composed of stocks that are included in Index on the first trading day and they remain in the index for 2 years¹. A capping ratio of 20% is applied as from the December 2, 2013 to the BIST IPO Index. When there is a change in the scope of the index, the weights of stocks are checked without capping. If there is a stock whose weight is greater than 20 %, the weight is decreased to 20 % using the weighting factor (BIST). Stocks traded in IPO index may provide an opportunity for gamblers as some of these stocks had had extraordinary returns in their initial trading days. The presence of higher average trading volume in the initial trading days of IPOs than overall average trading volume of a particular stock may indicate the bets of gamblers in the stock market.

4. Data and Methodology

Data for IPO Index is monthly and from May 2012 to July 2020. Our data set is composed of 98 monthly data; independent variables, return of XHARZ Index; volume and return for BIST 100 Index; USD/TRY parity, interest rates on benchmark 10yr government bond, population not included in labor force, expected growth. Our dependent variable is the volume for XHARZ Index. Johansen cointegration test is applied to detect a long run relationship among variables.

Dataset for gambling is obtained from official web sites of TJK, IDDAA and National Lottery Agency for the period 2004-2018. Prior to 2004, There were no sports betting. The total of three biggest gambling instrument are used as the independent variable as well as the adjusted return of BIST 100. The data is annual and dependent variable is the volume of BIST 100. Authors have expected to find a significant negative coefficient for the total of gambling in explaining the change in the trading volume for BIST 100. The Model is as follows;

$$\text{Trading Volume BIST 100} = B_0 + B_1 \text{ Total Gambling} + B_2 \text{ Return XU100} + e \quad (1)$$

Data set for watch list market is monthly and from January 2017 to November 2019. The sample size is 35. Watch list market's market capitalization is regressed with BIST volume and several control factors after controlling for stationarity by first differencing when needed. The model is as follows;

$$\text{Market Capitalization Watch List Market} = B_0 + B_1 \text{ BISTVOL} + B_2 \text{ USD/TRY} + B_3 \text{ 10yr Treasury} + B_4 \text{ EMP} + B_5 \text{ Economic Outlook} + e \quad (2)$$

¹ If the number of stocks in the index falls below 5 due to the expiration of 2 years, the expired stock remains in the index until a new stock is included

5. Findings

Normally, rational investors consider long term relations when they trade. Prior to estimations, variables that may have linkages to gambling such as population excluded from labor force, IPO Index returns and trade volume, and growth expectations are expected to deny any long term relation with the market volume. A cointegration analysis is performed to deny any long run relation of trading volume of BIST 100 index with the above mentioned independent variables so that the lottery like, short term investment intentions of gamblers become clearer.

5.1. Cointegration Analysis of IPO Index (XHARZ)

Unit root is found in XHARZ return, BIST 100 return, population excluded from labor force and expected growth variables, they are non-stationary at level and first differences are taken to make them stationary. The remaining independent variables are delisted. Lag selection is depicted in Table 1, 3 out of five criteria favors four lags.

Table 1: Lag Selection

varsoc LNXHVOL, maxlog(8) exog(d.LNXHARZ d. LNB100RTRN d. LNPOP d. ExGrowth)								
Selection order criteria								
Sample: 9 -83								
				Number of obs =		75		
Lag	LL	LR	df	p	FPE	AIC	HQIC	SBIC
0	-110,4850				1,2737	3,0796	4,1413	3,2341
1	-87,7622	45,4450	1	0,000	0,7138	2,5003	2,57435*	2,68573*
2	-87,4186	0,6872	1	0,407	0,7265	2,5178	2,6042	2,7341
3	-86,6442	1,5489	1	0,213	0,7311	2,5238	2,6226	2,7710
4	-84,5081	4,2722*	1	0,039	0,70952*	2,49355*	2,6046	2,7717
5	-84,5008	0,0146	1	0,904	0,7289	2,5200	2,6434	2,8290
6	-84,4146	0,1724	1	0,678	0,7472	2,5444	2,6801	2,8843
7	-84,4033	0,0226	1	0,880	0,7677	2,5708	2,7188	2,9416
8	-83,8312	1,1441	1	0,285	0,7771	2,5822	2,7426	2,9839
Endogenous:		LNXHVOL						
Exogenous:		d.LNXHARZ d. LNB100RTRN d. LNPOP d. Ex Growth -cons						

When maximum rank is 1 and statistically significant, it can be inferred that there is one cointegration among variables. Our results help us to reject the null hypothesis 1 here below as the maximum rank is 0. IPO index volume and BIST 100 volume and some other control variables such as population excluded from labor force, growth expectations have no long term relations as shown in Table 2.

Hypothesis 1: Independent variables do have long run significant effect on the amount of average trading volume for stocks in the IPO Index.

Hypothesis 1a: Independent variables do not have long run significant effect on the amount of average trading volume for stocks in the IPO Index.

It may be inferred that trading volume of the market is affected by short term intentions of investors which may be associated with gambling due to the lottery like structure of IPOs.

Table 2: Johansen test for Cointegration

vecrank LNB100VOL LNPOP LNXHVOL ExGrowth LNXHARZ, trend (constant) lags (4) max						
Johansen tests for cointegration						
Trend: constant			number of obs		79	
Sample: 1960m6 - 1966m12			Lags		4	
maximum rank	parms	LL	eigenvalue	trace statistic	5% value	Critical
0	80	348,8821	—	68.2762*	68.52	
1	89	362,9230	0,2992	40,295	47,21	
2	96	370,8707	0,1823	24,399	29,68	
3	101	378,6570	0,1789	8,826	15,41	
4	104	381,7629	0,0756	2,615	3,76	
5	105	383,0702	0,0326			
maximum rank	parms	LL	eigenvalue	Max statistic	5% value	Critical
0	80	348,8821	—	28,082	33,46	
1	89	362,9230	0,2992	15,895	27,07	
2	96	370,8707	0,1823	15,573	20,97	
3	101	378,6570	0,1789	6,212	14,07	
4	104	381,7629	0,0756	3,615	3,76	
5	105	383,0702	0,0326			

Table 2 clearly denies any long run relation among variables; Maximum rank 0 shows that there is no statistically significant cointegration. Null hypothesis that variables do not have significant long run effect on the amount of average trading volume cannot be rejected. By providing evidence that there is no cointegration among variables such as; market returns, market volume, growth expectations or population excluded from labor and trading volume XHARZ, the IPO index. It may be inferred that this IPO index is perceived as short-term, a lottery; investors' attention to this Index fades away by time and gambling motives remain towards these bets.

5.2. Multi Regression Analysis for Gambling vs BIST Volume

When gamblers loose in casinos, they may try horse races. When they lose in horse races, betting on sport may attract them. How about stock market? Pay offs are secured by the governmental exchange commissions. Rules are simple and straight forward; buy low, sell higher. It may seem 50 % chance. In order to determine the presence of gamblers in the stock market, total revenues of gambling and the return of BIST 100 is regressed with the trading volume of the BIST100 Index.

Detecting substitution effect between gambling revenues and volume of the market is aimed via a multi regression analysis. Substitution effect is found to be significant between lotteries and stocks in an earlier study. One standard deviation increase in jackpot size has reduced the volume of trading by 2.3 % (Gao and Lin, 2015). Similarly, the inverse relation is present for our sample data. The null hypothesis here below is rejected with 95% confidence.

Hypothesis 2: Total Gambling revenues have a positive impact on the trading volume of BIST30

Hypothesis 2a: Total Gambling revenues have a negative impact on the trading volume of BIST30

Table 3: BIST Volume and Total Gambling Turnover

Prais Winsten AR(1) regression -- iterated estimates				Number of obs	15
				F(2,12)	7,56
				Prob>F	0,0075
				R-squared	0,5575
				Adj R squared	0,4838
				Root MSE	0,5755
Source	SS	df	MS		
Model	5,00851574	2	2,50425787		
Residual	3,97483266	12	0,33123606		
Total	8,98334840	14	0,64166774		
BIST100VOL	Coef	Std. Error	t	P> t	95 % Conf. Interval
		0,646996			
Return XU100	-0,9300117	0	1,44	0,176	-0,4796714 2,3396950
		0,000020			
Total Gamb. Rev.	-0,0000555	6	-2,70	0,019	-0,0001004 -0,0000106
		0,278197			
_cons	0,6976094	3	2,51	0,028	0,0914696 1,2027490
rho	-0,6343192				
Durbin Watson statistics (original)			2,014070		
Durbin Watson statistics (transformed)			2,056155		

A change in total revenues of gambling can explain the change in the trading volume in BIST at 5 % with a t-value of -2,70. The negative sign indicates the substitution effect. Constant is also statistically significant at 5 %. Whereas, BIST100 return is statistically insignificant even at 10 percent but still the positive sign of returns may indicate the tempting function of past returns for investors.

5.3. Watch List Market's Capitalization Determinants

What variables drive this market is questioned in this paper and suspected determinants such as volume of the main market BIST 100, USD/TRY parity, level of employment, results of Economic outlook survey conducted by the Central Bank of Turkey and yield of 10-year treasury bonds are found to be statistically insignificant on the change in the watch list market. Probably, some omitted variables may explain some portion of the change but as we have failed to detect any. In the light of our earlier findings in the IPO Index and the BIST100 Index, we offer gambling habits within the community to be a factor in explaining the drastic changes in this dangerous market.

GIPMCAP stands for the market capitalization of the watch list market in Table 4. Changes in the Watch list market capitalization may be explained by various determinants but the results obtained show that there is no statistically significant independent variable for our sample. All of them are insignificant even at 10 %. It can be inferred that gamblers dominate this relatively small market despite its risks as shown in Table 4.

Table 4: Regression Analysis for the Watch List Market

Prais Winsten AR(1) regression -- iterated estimates				Number of obs	34
				F(5,28)	7,56
Source	SS	df	MS	Prob>F	0,8278
Model	1,98E+18	5	3,96E+17	R-squared	0,0704
Residual	2,61E+19	28	9,33E+17	Adj R squared	-0,0956
Total	2,81E+19	33	8,52E+17	Root MSE	9,70E+08
GIPMCAP	Coef	Std. Error	t	P> t	95 % Conf. Interval
BISTVOL	-0,1201531	0,089037	-1,35	0,188	-0,2025361 0,06222
USD/TRY	3,50E+08	3,36E+09	0,1	0,918	-6,54E+09 7,24E+09
Employment	2,56E+07	4,64E+07	0,55	0,585	-6,94E+07 1,21E+08
Econ. Outlook	4064293	2,06E+07	0,2	0,845	-3,82E+07 4,64E+07
10 yr treasury	1,63E+08	2,54E+09	0,06	0,949	-5,04E+09 5,37E+09
_cons	6,91E+08	5,72E+08	1,21	0,217	-4,80E+08 1,86E+09
rho	0,300683				
Durbin Watson statistics (original)			2,01407		
Durbin Watson statistics (transformed)			2,056155		

Volume of the main market does not affect the trades in watch list market as t value is -1,35. Minus sign may indicate a substitution effect even between the BIST100 and watch list market for gamblers. Usd/Try parity, level of employment, results of the economic outlook survey, yield of 10 year treasury bonds issued by Turkish Central Bank and the constant do not have statistically significant impact on the change of market capitalization for the watch list market. Thus, our analysis supports the presence of gamblers in the stock market, the rationale for gamblers to bet in equity markets can be a further study subject.

Conclusion

Gambling is a social, cultural, religious and economic phenomenon that plays a role in the development of financial markets as these markets are regulated and payoffs are guaranteed by exchange commissions or clearing houses. Gamblers may face difficulty in collecting their receivables when they gamble or the jackpot or the amount they win may be heavily taxed. They may believe they are not compensated fully. They may even select to gamble in stock market for a change or fun. This study provides evidence that due to any of these reasons financial markets serve as a substitute.

A negative impact of gambling revenues on trading volume of BIST 100 Index is stated via multi regression analysis. Substitution effect is clear and statistically significant for the sample period. Our paper deviates from papers that support the idea that increasing gambling tendencies in a society helps financial markets to improve but support substitution.

IPO is index is found to be attracting gamblers rather than long term investments via a cointegration analysis. Most of the companies in the IPO index are small in capitalization and offer speculative future gains in the long run but also offer a short term gain in the first few trading days. This study provides evidence that long term motives are not statistically significant. Investing in the watch list market had no explanation other than gambling motives as well. The unlikely but jackpot feature of this market serve as a blackjack table.

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