



## CUSTOMER PENETRATION TRENDS IN ONLINE BANKING: A TURKISH CASE

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Online banking, customer penetration, transaction volumes in banking.

### JEL Classification

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### ABSTRACT

Alternative delivery channels and self-service, branchless banking are swiftly replacing the main channels for banking services worldwide. This study seeks to investigate relational analyses between retail online banking market in Turkey transaction numbers, transaction volumes and customer numbers. Quarterly data is employed for the analysis. The market numbers are compared for different purposes in a time frame of 3 years between 2011 and 2014. The number of customers, the number of transactions for a 16 financial transactions of various types, the volume of transactions and the changes are considered for the analyses. The results support that the market for online banking and the penetration channels of the bank have a stable tendency for growth.

## 1. INTRODUCTION

Internet banking or online banking can be considered a remarkable development in the banking sector. The ability to carry out banking transactions through the Internet has empowered customers to execute their financial transactions within the comfort of their homes or mobile phones. The benefits or advantages of Internet banking are valuable for the banks and the customers. Online banking offers ease of access, secure transactions and 24-hour banking options. Online banking leads to productivity gains. Automating payments, minimizing the need to physically visit the bank and the ability to work as needed rather than on banking hours may decrease the time involved in performing routine banking activities. Conventional banking has always been slow and time-consuming. However, online banking has tremendously reduced the time required to process banking transactions.

This research aims to show how the number of customers and transactions have been changing over years considering the online banking market. The following section covers the literature survey about online banking. The later section explains the data analysis and findings. The final section summarizes the concluding remarks.

## **2. LITERATURE SURVEY**

Singer et al (2008) determines Citibank's response to cultural diversity in the dynamic, highly competitive global market for online banking facilities and services, and whether or not international online bank web sites are constructed in a manner sensitive to the culture of their host countries. Rod et al (2009) examine the relationships among three dimensions of service quality that influence overall internet banking service quality and its subsequent effect on customer satisfaction in a New Zealand banking context.

Yousafzai et al (2012) investigate our understanding of customers' actual internet banking behaviour by combining the construct of technology readiness with the technology acceptance model and demographics, such as age and gender, into one integrated framework.

Akhlaq et al (2013) examine the types of motivation that provokes an individual to trust and use the internet banking system in a low income country. In this paper, extrinsic and intrinsic motivations are studied. The results support that the motivations may build trust in an individual to accept internet banking technology.

Rajaobelina et al (2013) classify online banking customers using demographic and relationship-based variables and describe their profiles. Loureiro et al (2014) investigate the relationship between marketing factors of customer intentions to continue to use services and to recommend these services to others, and the technology acceptance factors of self-control, usefulness, customer value, technology-based service encounter satisfaction and reputation. Innovatively this study also compares the proposed model in two countries, Portugal and Austria.

Demoulin et al (2013) examine the effect of situational factors, related to transactions and waiting, on customers' cognitive and affective responses to service delivery time, including their service evaluations. Zuccaro et al (2010) present and discuss the development of a transaction-based model for segmenting users of internet banking. A random sample of clients of a large Canadian bank was employed in generating the hybrid segments. The basic transactional profile of the bank's clients was merged to Mosaic's financial segments contained in the generation of five database.

Unlike the traditional life-style and psychographic segmentation models, the hybrid segmentation model explored in this study may provide a better management through a more concrete and readily accessible client segments that can be employed for a variety of marketing strategies. Dimitriadis et al (2011) discuss the trust to be a key variable in understanding and predicting consumer behavior in the self-service technology and e-commerce contexts. The study seeks to investigate the possibility of using trust in two self-service bank channels: internet, and phone banking, to segment potential users of these channels.

Patsiotis et al (2012) examine internet banking adoption and resistance behaviour in Greece in order to develop profiles of adopters and non-adopters of the service. The aim of this study is to illustrate customers' resistance behaviour towards internet banking.

The existing literature does not consider the resistance behaviour of customers since the current studies have not clearly distinguished non-adoption from resistance. Consequently, they fail to recognize the types of non-adoption.

### 3. DATA AND METHODOLOGY

This research presents a unique comparison between the data of Turkish online banking market over a time frame of 12 quarters. The dataset covers quarterly internet banking transactions in the period of 2011 and 2013.

Table 1 covers 16 different types of financial and investment transactions between 2011 and 2013. It shows total number of transactions per year, maximum and minimum volume of transactions performed in quarters and average volume of transactions per quarter. The most common performed transactions can be listed as money transfers, utility and bill payments by far. The highest volume of transactions belong to money transfers, time deposits and common stock orders.

**Table 1: Online Financial and Investment Transactions in the Market**

Statistics of Data	Number of Transactions (1000)			Max Amount			Average Amount (millionTL, quarterly)		
				Min Amount (millionTL, quarterly)					
	2011	2012	2013	2011	2012	2013	2011	2012	2013
<b>Financial Transactions</b>									
Money Transfers	103131	123537	137333	50967	60598	69166	46592	54002	66054
				42986	48281	59194			
Consumer Loan Payments	3025	4325	6543	616	1222	1345	514	908	1161
				455	645	986			
MTV and Tax Payments	10802	12428	14037	814	943	1146	668	812	1008
				594	680	857			
SGK Payments	3464	4140	4981	539	831	1011	486	650	860
				440	524	615			
Utility and Bill Payments	58088	72693	83786	1143	1406	2357	938	1278	1798
				6448	1173	1530			
Card Payments and Transactions	31992	36894	40945	879	7747	9396	5793	7251	8833
				5235	6586	8045			
Other Payments	21186	25205	24917	478	392	521	344	351	432
				271	323	370			
Other Financial Transactions	6118	8171	8857	5662	6195	11903	4131	5305	5827
				2751	4425	3408			
<b>Investment Transactions</b>									
Funds (buy and sell)	9152	8446	7870	11546	10093	10932	10184	9183	9912
				9347	8255	9370			
FX (buy and sell)	6457	6342	5734	13492	7640	8227	9880	6895	7223
				6515	6066	5047			
Time Deposit (open and	2299	2695	2826	13663	20594	24508	13057	16662	22857

close)					12340	13170	20703				
Common Stocks (orders)	21547	19626	27430		25743	20864	26488		22700	17347	25027
					17479	9310	23323				
Repo	417	305	284		3020	1916	1855		2663	1667	1701
					2428	1548	1490				
Bonds (buy and sell)	343	316	234		1202	1060	993		1103	858	781
					951	656	520				
Gold (buy and sell)	1473	1916	2537		4019	1883	2914		2010	1624	2346
					561	1462	1593				
Derivative Products (orders)	1067	1694	1760		3850	8302	9835		3602	6388	6547
					3327	3751	4539				

Source: The Banks Association of Turkey

Table 2 presents eight financial transaction types with yearly total number of transactions and their volumes in TL amounts. All transaction and volume numbers have a tendency for growth in time. Money transfer is the leading transaction type both in terms of number and volume of transactions. Therefore, money transfer will be considered as the specific transaction type for analyses in the following pages.

**Table 2: Online Number of Transactions and Amounts in the Market**

	Number of Transactions(1000)			Amount (millionTL)		
	2011	2012	2013	2011	2012	2013
<b>Financial Transactions</b>						
Money Transfers	103131	123537	137333	186369	216007	264216
Consumer Loan Payments	3025	4325	6543	2054	3633	4642
MTV and Tax Payments	10802	12428	14037	2673	3246	4034
SGK Payments	3464	4140	4981	1944	2601	3440
Utility and Bill Payments	58088	72693	83786	3750	5113	7193
Card Payments and Transactions	31992	36894	40945	23170	29006	35331
Other Payments	21186	25205	24917	1375	1403	1726
Other Financial Transactions	6118	8171	8857	16523	21218	23309

Source: The Banks Association of Turkey

Table 3 shows number of online money transfer transactions, and volumes from 2011 to 2013 in quarters. The rates of change are also included for the same period. The numbers have an unstable rate of growth when quarterly periods are considered and 2012, Q4 has the highest growth rate. Graph1 represents table 3 in a visual format.

**Table 3: Online Money Transfers in the Market**

Money Transfers	2011				2012				2013			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Number of Transactions (1000)	24794	25498	24927	27911	29635	31191	29446	33264	33036	34747	33666	35884
Rate of Change % (transactions)	-	3	-2	12	6	5	-6	13	-1	5	-3	7
Amount (millionTL)	50967	42986	44255	48162	48281	53615	53513	60598	59194	67222	68634	69166
Rate of Change % (amount)	-	-16	3	9	0	4	0	13	-2	14	2	1

Source: The Banks Association of Turkey

**Graph 1: Online Money Transfers**

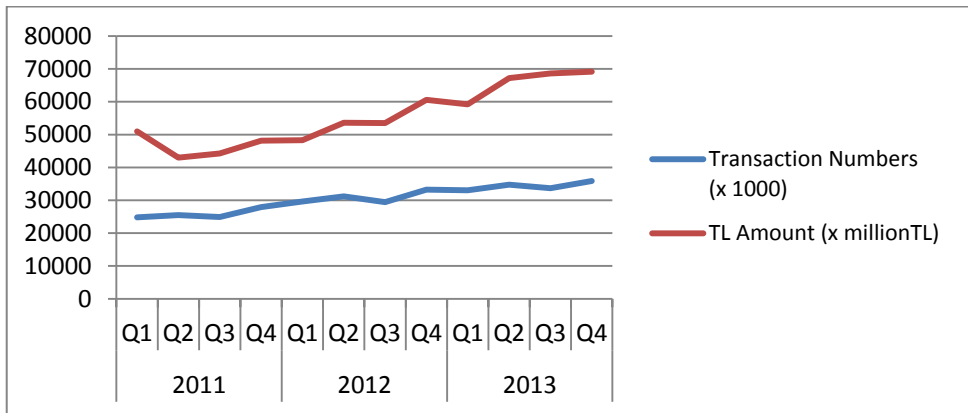


Table 4 presents quarterly market figures between 2011 and 2013 regarding the number of money transfer transactions and total number of active customers in the market in the same period. The rates of change are also included for the same period. Graph 2 represents Table 4 in a visual format.

**Table 4: Online Number of Transactions and Number of Customers in the Market**

Money Transfers (Market)	2011				2012				2013			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Number of Transactions (1000)	24794	25498	24927	27911	29635	31191	29445	33264	33036	34747	33666	35884
Rate of Change % (transactions)	-	3	-2	12	6	5	-6	13	-1	5	-3	7
Number of Customers (1000)	6505	6721	7066	7803	8485	8605	8975	9630	10246	10468	10975	11422
Rate of Change % (customers)	-	3	5	10	9	1	4	7	6	2	5	4

Source: The Banks Association of Turkey

**Graph 2: Number of Money Transfer Transactions and Number of Customers - Market**

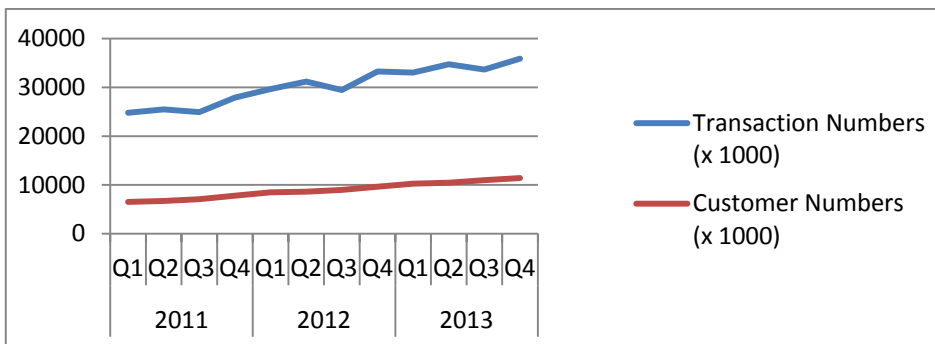


Table 5 shows the comparison of the average amount per money transfers in the market between 2011 and 2013. Average amount per transaction is calculated by dividing the total amount of transactions to total number of transactions for a year. We can observe how the money transfer basket changed over years with the resulting figures.

**Table 5: Money Transfers - Market**

	Market		
	Number of Transactions (1000)	Amount (millionTL)	Average Amount per Transaction
Money Transfers	<b>2011</b>		
	103131	186369	1807
	<b>2012</b>		
	123537	216007	1749
	<b>2013</b>		
	137333	264216	1924

Source: The Banks Association of Turkey

#### 4. FINDINGS

The data analysed in this study consists of the Turkish local market. As a result of internet banking data analysis in the period of 2011-2013, it may be observed that the number of transactions has a tendency of rapid increase as more customers get familiar with online banking.(Table 1) Moreover, the consumer habits have changed as internet and mobile technologies get more affordable and their interfaces get more user friendly. (Table 4, Graph 2)

The highest number and volume of transactions are performed as money transfers among the 16 transaction types that are measured in Table 1. Therefore, money transfer data is considered as the specific transaction type for analyses in the following tables. Customers tend to use online banking for financial, payment transactions rather than investment purposes. (Table 1)

Although there is a similar growth tendency on both the number of transactions and the volumes of transactions, the rate of change in transaction numbers and volumes are not directly proportional. In fact, their directions are opposite in some quarters such as 2011-Q2 and 2013-Q3. The volume of transactions are increasing more than the number of transactions in total (Table 3, Graph 1) which shows that the average basket per transaction is increasing over years.(Table 5) The rates of change between number and volume of transactions also do not have a direct accordance with each other which shows that they are affected by other external factors.

A similar situation exists between the number of transactions and the number of customers too. Money transfer transaction numbers have an unsteady increasing rate whereas the number of customers in the market has a systematic increasing rate. Customer numbers in the market have doubled between 2011 and 2013.

Transaction numbers on the other hand increased 1.5 times in the same period. In fact transaction numbers have declined in several different quarters compared to the previous quarter. (Table 4, Graph 2)

## **5. CONCLUSIONS**

This research clearly shows how the online banking market has been increasing in size. It can be used to forecast where the market is heading for near future. It can be derived from the data analyzed that more customers are going to move from traditional banking to online banking facilities because of convenience. As consumers continue to become more comfortable conducting transactions online, branches will become less effective. This will lead financial services industry to invest and introduce more online tools to market.

However, as more customers are using online banking, the number and volumes of transactions performed by the new customers are not directly proportional to the number of new customers. Transaction numbers tend to have different and even independent growth rates. We can conclude that online banking usage experience of customers are directly affected by external economic factors that cause transaction numbers to increase and decrease at different times.

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## **APPENDICES**

### **A-1: Internet Banking Definitions**

Active Customers: A user that has logged in at least once in the past 3 months period.

Financial Transactions:

1. Money Transfers (Number of Transactions, Volumes)
  - a. EFT: Money transfers that have been made to another bank using the EFT system.
  - b. Remittance: Money transfers that have been made inside a bank including foreign currency transfers, transfers to own current accounts, and to third parties.
  - c. Foreign currency transfers using SWIFT or other payment systems such as MoneyGram or Western Union.
2. Payments (Number of Transactions, Volumes)
  - a. Bill Payments
  - b. Tax Payments (Customs, Motor Vehicles, Corporate, Municipality tax payments)
  - c. SSI Payments
  - d. Loan Payments (Consumer, Mortgage)
  - e. Other Payments (Mobile phone Topup, traffic fines, insurance payments, leasing, OGS, HGS, donations, gaming, cheque payments, educational payments, trade chamber payments, all other payments excluding taxes and previous titles.
3. Investment Transactions (Number of Transactions, Volumes)
  - a. Fund buy and sell transactions (Manual orders, automatic fund transactions are not included)
  - b. FX transactions (buy, sell and cross currency transactions)
  - c. Time deposits (opening and closing numbers)
  - d. Stock transactions (buy – sell orders)
  - e. Repo transactions
  - f. Bond and Bill buy – sell transactions (eurobonds included)
  - g. Gold buy – sell transactions
  - h. VOB orders
4. Credit Card Transactions (Transaction Numbers, Volumes)
  - a. Cash Advance
  - b. Debt payment
  - c. Debt payments of third parties' credit cards excluding EFTs to credit cards.
5. Other Financial Transactions (Transaction Numbers, Volumes)

Remittances between investment accounts and current / time deposit accounts, partial withdrawal or investment of time deposits, virtual POS transactions, virtual card transactions etc.