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## **Development of Internet Banking as the Innovative Distribution Channel and Turkey Example**

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### **Abstract**

The banking industry is one of the fastest sectors realizing the developments and changes in the field of technology innovation. Demand on web based banking products increased as a result of expanding customer focused service understanding, decreasing attainability cost, its competitive market structure and consumers' wish to reach banking products fast, effective, productive way. Besides being periodically diversified, the innovative banking tools attract fast increasing demand in years. This study examines the development of web banking tools used in Turkish banking industry and products of these tools, and consumer reaction in this development level in economic framework. The study also investigates the effectiveness of Turkish banking industry by means of innovative products and processes made by web banking product channels used

in Turkey with a structural analysis. The study concluded finding out that the number of products used in web banking and consumers making use of these products noticeably increases in time. Overcoming clash between web infrastructure and banking industry security, diversification of banking products, strengthening the comprehension of tendency of using web banking, will be effective on speeding-up development of web banking increasingly.

**Keywords: Online banking; Central bank; Security; Risk; Convenience; Tangibles; E-payment; Reforms**

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## **INTRODUCTION**

The developments in the information technology make the changes of the banking sector in the international competition environment necessary indeed [1]. Electronic banking provides an important competition advantage to the banks in terms of time, location and cost. Recently, it is concentrated on the advance technologies that are the source of the electronic banking in the interbank competition. On the other hand, internet banking is the most important element of the electronic banking [2].

In the financial services sector where the new technologies have been easily and rapidly applied, when the computers that have previously used in the inter-office banking processes started in the automation of the banking services, internet banking have been rapidly developed particularly since 1990. In the first years when the internet banking provided in the first service, the concern of the consumers about the security of the system, the highest cost of having individual computers and costs that have been charged on the bank to provide such kind of services have delayed the dissemination of the internet bank [3].

When approaching to 2000s, the banking sector that closely monitors the new technologic developments has directed to the applications where the customer oriented, speed, time and cost advantage are highly considered due to the fact that competitive marketing structure has strengthen and the profit rates have decreased [4]. In this scope, the internet banking is intended to provide service to the large mass by concentrating on the activities to use the internet banking efficiently, solving the security problem and diversifying the banking products.

It is not possible to keep out the developments for Turkish banking system in the globalizing world. Nowadays, the banking sector in Turkey is one of the sectors where the information and communication technology have been widely used.

## LITERATURE REVIEW

By reviewing the factors that are effective for using the internet banking by the individuals who are living in Australia, it was determined by Sathiye [5] that these are the elements such as trust, awareness, and lack of information. According to Polatoğlu and Ekin [6] the study that was performed on a private bank that provides internet banking in Turkey and it was determined that the consumers saves time and costs from the internet processes however, they face with problems in terms of access to the internet and consequently, the educated people mostly prefer the internet services.

According to Karjoluoto et al. [7] the effect of using the internet banking was searched towards the consumers in Finland in accordance with the age group and was resulted that people who are older than 65 face with some problems when using the internet banking. The role of trust element was searched for the consumers in Korea in terms of using internet. It was achieved that secure use and benefit is on the first rank accordingly by Suh and Han [8]. The problems facing with internet banking in Thailand has reviewed by Rotchanakitumnuai and Speece [9] and it was defined that the most important problem is composed of security. Şafaklı [10] stated that When reviewing internet banking Northern Cyprus Turkish Republic, the banks apart from the foreign banks have not been providing internet service and it was achieved that the domestic banks could not provide such kind of services because of the financial inability, scale problem, non-recognition of the country in the international area.

In a study that was performed by Akıncı et al. [11] between the lecturers in the Turkish universities, most of them has introduced to the internet banking however, against the security and problem, they prefer the branch banking in terms of being helped and they do not have any sufficient information about the advantages of the internet banking in accordance with the data achieved as a result of this study.

Flavian et al. [12] determined the factors of security, income level, age and gender are playing role for the consumers to use the internet banking. Sanmugam [13] achieved that social norms are playing important role in the dissemination of the internet banking. The important factors that are effective for using the internet banking in Jamaica have examined by Reid [14] and It was determined that the factors of security, income level, age and gender are playing role for the consumers to use the internet banking.

According to Malhotra and Singh [15] the results of a study in India, the foreign capital private banks are more effective than state banks in internet banking services and this is related to the bank experience, financial product variety and size of the bank.

Chong et al. [16] described the result of an analysis that was made in Vietnam, the factors are effective on internet banking such as trust, easy access and governmental support. According to Omar et al. [17] results of an analysis that was carried out in Pakistan, the required factor to prefer the internet banking instead of the branch banking is the trust, easy access, speed, process costs and relevant factors. In a study that was made by Akin and Karaboğa [18] about the preference of the consumers on internet banking, it was achieved that the banking process could be used easily and could be made every place as well as there are sufficient information. In the dissemination of using the internet banking, it is more than important to develop the security of the websites, design of the websites, easy access, full process and accurate process and customer satisfaction accordingly by Yıldız and Karadirek [19].

## **ADVANTAGES AND DISADVANTAGES OF INTERNET BANKING**

While internet banking has been increasing the efficiency and effectiveness in the banking sector, it also increases the consumer satisfaction. Thanks to the new technologies and internet development, new product and distribution channels in the electronic banking have been appeared. Today, Due to the ATMs, telephone banking and internet banking services, POS machines, Electronic Fund Transfer (EFT) processes, credit cards, kiosk banks, WAP banking, Palm banking and other new product and distribution channels that have been alternatively developed in the branch banking [20], the consumers could perform their processes and banking activities without going to the bank except the drawing cash.

Thanks to the advantages such as the cost-efficiency in the internet process, carry off, product variety, increasing the customer focus, decreasing the expenditures of the branch, staff and rents, providing services without depending on the geographic region and time [21], the roles of the electronic banking that has been widely disseminated around the world for the banks and consumers [22] has been increasing to change the habits of the consumers [23]. It is more than important to transfer the information that has been organized under the direction of the requirements, easily access, and time saving to be provided by the internet services for the development of the electronic banking. It is considered that the services that have been designed only by considering the demands and the requirements of the consumers will increase the internet use in the banking services of the customers [24].

Internet banking has some risks apart from the facilities. This risk that could be defined as security risk is to access to the private information and accounts of the account holders by people in bad faith [25].

Such kind of actions could be in different ways such as inattention of account holder, sharing private information with others or ill-affected banking staff so that

they could use the information achieved and it could occur because of hackers so they could access to the computers of the account holders by using the spy programs [26].

In order to remove the risks about the security issue of the internet banking, the consumers who use the banks and internet banking take various precautions. The banks have applied for additional precautions to define the identity and by establishing firewalls, they have attempted to protect the system against the attacks and on the other hand, the consumers attempt not to share their private information with others, they use the antivirus programs on their computers regularly as well as they attempt to minimize the risks by taking precautions such as electronic signature, keeping short the internet using, virtual keyboard using [27].

## **HISTORICAL DEVELOPMENT OF THE INTERNET BANKING IN THE WORLD**

Internet banking appeared by the telephone banking in the first time in 1980s and it increased when internet was using at homes [28]. In these years, banking and finance companies in Europe and U.S.A started to work on the concept of the “home banking”. Due to the fact that computer and internet were not common previously, it was directed to the telephone banking [29].

The first internet banking application was started in U.S.A in 1996 and then, the eminent banks such as Citibank and Wells Fargo started to provide this service to their customers in 2001 [30]. On the other hand, in Singapore, DPS bank started to internet banking services in 1997. This bank was followed by the UOB and OCBC [31]. Such activities had started in Turkey based on the technological developments in 1990s in parallel to the developments in the world [21].

## **DEVELOPMENT OF THE INTERNET BANKING IN TURKEY**

Together with the proclamation of the Republic in Turkey, in order to establish the national banking sector, the state had undertaken the effective role in the financial system. In that period, the private capital banks and public capital banks had added to the foreign capital banks. At the beginning of 1980s, along with the economic and financial liberalization, the important changes occurred in Turkish banking sector. When removing the restrictions in the interest rate and foreign exchange rates, the speed and rate of the structural changes in the sector had increased [32].

At the end of 1980s, in addition to such structural and reformist changes, the credit cards, ATMs, telephone banking and other banking changes created by the technologic developments had increased the profit rate of the banks [33].

Until the end of 1980s, while the ground of the Turkish banking sector was composed of bank branches, in 1987, Türkiye İş Bank started to internet banking applications by introducing ATMs to the market. On the other hand, using the telephone, POS machines and internet services that are the other banking tools had introduced by Türkiye İş Bank in the midst 1990s [6]. In the same year, Garanti Bank started to internet banking services. Following the Garanti Bank, Osmanlı Bank, Pamukbank, Esbank, Akbank and Yapı Kredi Bank introduced electronic banking services to the consumers [21].

However, in these years, the financial structure of the banking sector had affected negatively by the economic developments in the country. Due to the increasing public section loan and using the public banking resources in the budget finance, the banks were forced to act in high risky environments. When approaching to 2000s, the banking sector faced with the crisis. In order to reconstruct the sector and to solve the structural problems in the financial sense, the amendments were made in the bank law. In addition to the reconstruction process, when the globalizing trends had increased, in order to provide integration of the Turkish banks to the international markets, the changes were performed in the service and product quality [32].

Nowadays, Turkish banks have been making major investments in the internet banking. Although many banks have been providing internet banks, because of the reasons so that the consumers are not used to internet banking and concerns about the security, the dissemination of the internet banking in Turkey is kept limited [34].

### **The Research Finding in Turkish Banking Sector towards Internet Usage**

Internet Banking is a distribution channel where banking services are provided on the internet. Internet banking could provide the entire services that could be provided by branch banking easily and rapidly independent from the time and location. The internet banking could be used in any place around the world through a computer having internet access for 24 hours. By considering such advantages, when reviewing the internet use in Turkish banking sector, some findings towards electronic banking are as follows (Figure 1).

The number of ATM located in Turkey in 2010 was 24 thousand and reached to 46 thousands in 2014. On the other hand, the number of POS machine was 1739 in 2010 and reached to 2389 thousands in 2014. Additionally, the number of bank card was 64.662 in 2010 but it was reached to 105.513 in 2014. In 2010, the number of credit card was 44.393 and reached to 57.007 in 2014. During six years period between 2009 and 2014, the number of ATM, POS machines, bank cards have shown an effective increase year by year. This situation shows that Turkish banking industry has a positive reaction towards innovative tools (Figure

2).

When reviewing the active customer numbers who use the internet banking as of years; while it was stable from 2005 to 2006, as of 2006, it has increased from 2006 to 2014. It can be observed that the number of active internet banking users in Turkey has increased approximately five times within the past 8 years between 2006 and 2014. This figure is an important indicator, which puts forward the dynamic and compatible structure of internet banking users towards innovation (Figure 3).

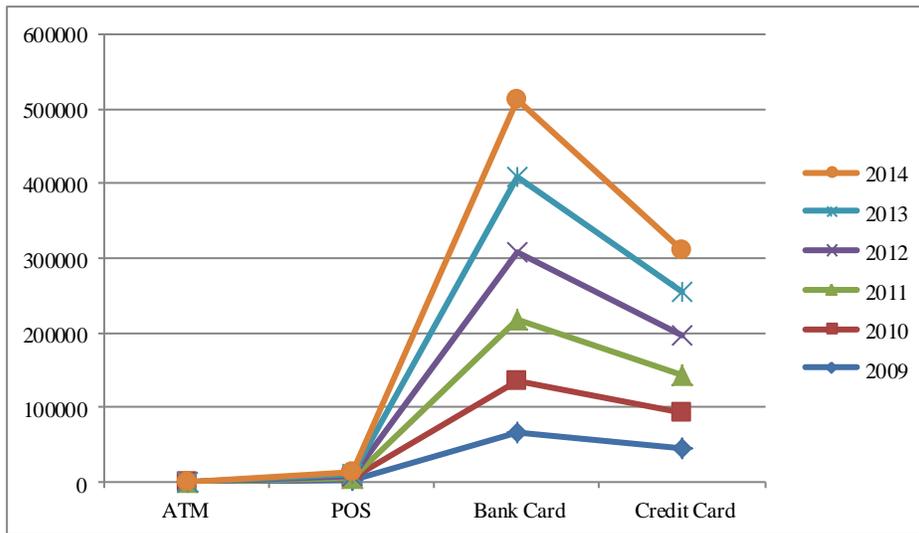


Figure 1: Number of ATM, POS, Bank Card and Credit Card (Thousand) [35]

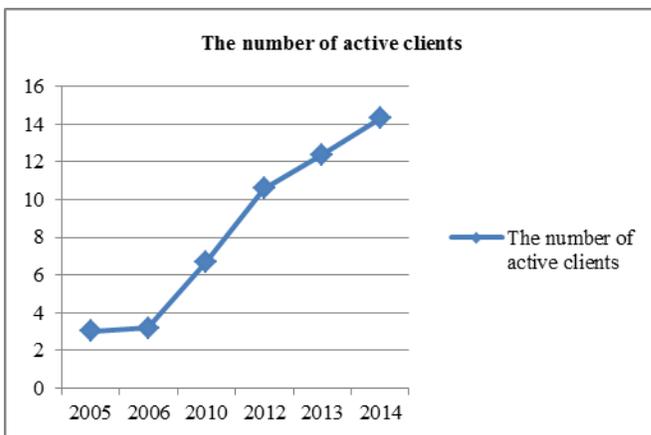


Figure 2: Active customer number to use internet banking (million) [36]

When reviewing the process volume of the internet banking; apart from small deviation occurred in 2012, a continuous increasing trend was observed between

2005 and 2014. This indicates a high level increase of nearly six times in Turkey. We can see that, the internet banking tools in Turkey give an effective reaction to innovation, which leads to process volume increase. This figure also shows that, Turkish banking industry has a high compatibility with the development of innovative banking tools, by means of world trade, international finance and electronic trade (Table 1).

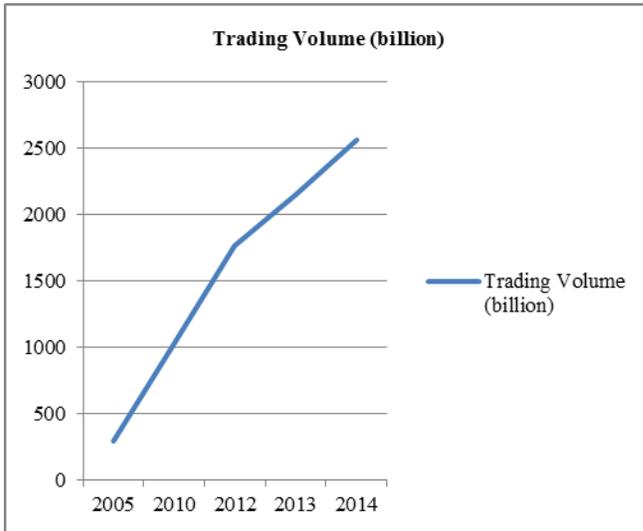


Figure 3: Internet Banking Process Volume (billion TL) [36]

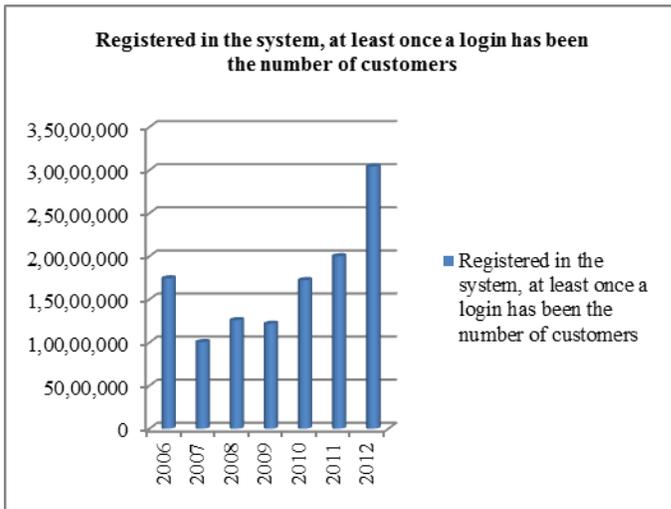


Figure 4: The number of customers who log in at least one time in the total system as individual and corporate [36]

When reviewing non-financial process that was made by internet banking; the credit card application made in 2006, additional credit card application, regular payment order, invoice payment order and other non-financial process total

increased from 293.441 to 771.780 in 2014. Number of regular payment order by internet banking increased four times, and credit card application increased almost three times between 2006 and 2014 (Table 2).

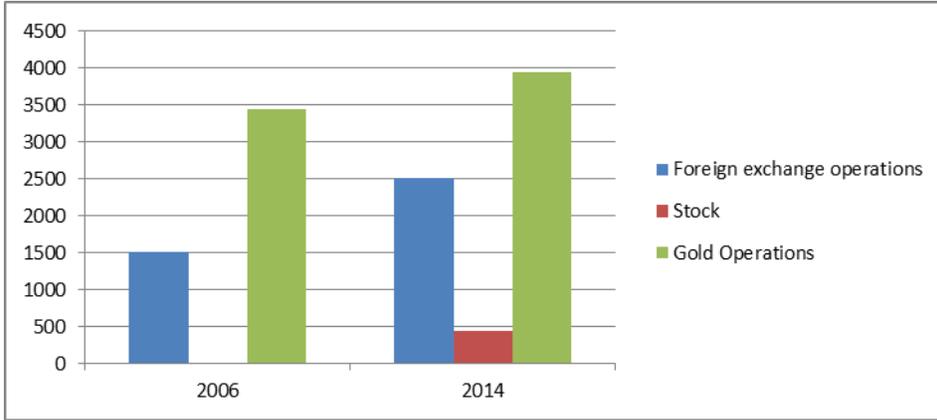


Figure 5: Process number change of internet banking investment process (thousand) (2006-2014 December)

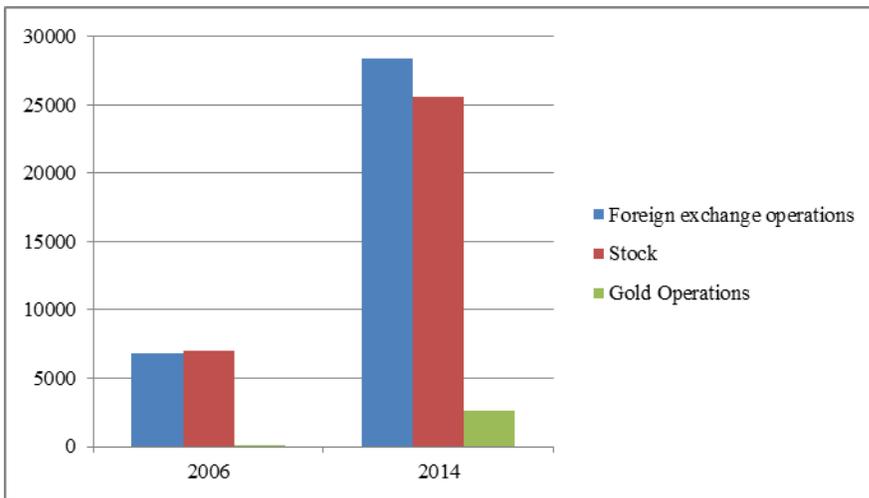


Figure 6: Process Value Change of Internet Banking Investment Process (2006-2014 December) (million TL)

The internet banking that help its customers to perform their processes 24 hours and to keep their portfolios during 24 hours has also decreased the costs of the banks and minimized the workload of the branches. The cost of the processes that have been performed by internet is at the rate of 1% of the process costs that have been carried out by branches. While maintaining opportunity to reach financial processes permanently, the development in internet banking usage also

maintains comparative advantage by giving cost advantage and usage ease (Figure 4).

Table 1: Non-financial process made by the internet banking [36]

Period	Number of process (thousand)					Total
	Credit card and additional card application	Credit application	Regular payment order	Invoice payment order	Other non-financial process	
December 2006	66	141	523	375	292.335	293.441
December 2007	147	501	660	780	148.284	150.371
December 2008	136	196	595	937	228.564	230.428
December 2009	438	433	866	1.538	249.963	253.238
December 2010	434	534	1.014	1.034	251.847	254.864
December 2011	347	777	1.551	928	533.621	537.224
December 2012	225	702	2.453	938	643.123	647.442
December 2013	173	419	1.990	1.060	799.021	802.662

It is observed that 39% of the total customers (individual and corporate) who at least one time log in and registered in the internet banking carried out internet banking process at least one time in October-December 2010. At the same time,

the number of total active customer has increased to 720 thousand people in the same period of previous year and increased to 341 thousand people in comparison with July-September. The increase in the number of individual and corporate customers registered to internet banking is important showing the development potential of internet banking. The number of motivated customers to use internet banking is an important sign showing future usage potential effectiveness. Developing safe usage policies has an importance by means of running the potential (Figure 5).

Table 2: Non-Financial E-Banking Transactions (2006-2014) [36]

	<b>Credit card and additional card applications</b>	<b>Applying for Credit</b>	<b>total non-financial</b>
<b>2006</b>	66	141	293.441
<b>2007</b>	147	501	150.371
<b>2008</b>	136	196	230.428
<b>2009</b>	409	319	253.238
<b>2010</b>	434	534	254.864
<b>2011</b>	347	777	537.224
<b>2012</b>	225	702	647.442
<b>2013</b>	173	419	802.662
<b>2014</b>	192	518	771.780

When reviewing Figure 5 that shows the number of internet banking investment process; while the number of golden process was 17 thousand in 2006, it was increased to 442 thousand in 2014 and at the same time, the foreign exchange process that was 1512 in 2006 has reached to 2519 as of December 2014. Within the framework of this information, it is seen that the internet banking has an increasing trend in terms of investment process as of years. The increase of internet banking investment process in Turkey within eight years puts forward the interest towards usage of internet tools within investment processes (Figure 6). When reviewing the investment process volume in terms of internet banking, the approximate investment process volume was 11 million so that these had been performed by internet banking in October- December 2014 has reached to 128 billion TL. The golden volume change, foreign exchange volume change and stock volume changes in the investment processes are shown in Figure 6 as of December 2006- 2014. Foreign exchange volume increased five times, stock

volume five times, and changing from 24 million Turkish Lira to 2557 million, gold volume increased over a hundred times between 2006 and 2014. The internet banking investment process volume has shown an important development by means of Turkish Lira. When the internet banking is reviewed for the investment processes, it is seen that the important development has been experienced by graphics as of years.

## **CONCLUSION**

The development of internet bank in the world started in the second period of 1990s. On the other hand, in 2000s, the using the internet banking has gained great speed around the world. In Turkey, the internet network has reached to great number of users in 2000s but it has not reached the same speed when considering the use of the internet as the distribution channel. The most important development in the internet using for the banking services was observed in 2012- 2014. In these years, the rate of using electronic bank has rapidly increased.

The initial way to increase internet banking usage in Turkey is, to know users better and to investigate their attitude in detail. Increasing of demand towards internet banking, prevents banks open up new branches and operational staff expenditures, therefore, it makes low cost services fruitful and effective. In the forthcoming years, internet banking usage is expected to grow and lead banks to innovative and creative solutions as an effective competition component.

When comparing with other samples in the world, using the internet banking in Turkey has not reached to required level yet. When considering this position, in order to disseminate the electronic services, it is more than important to take some precautions. First of all, by taking into the consideration of each technologic system, the security problem must be solved. In this regard, it is also important to provide fast communication between bank and customer in case of extraordinary movements on the customer accounts. Apart from this, the mobile signature method that has been started to apply should be developed; the virtual keyboard should be used to prevent the unauthorized access to the information on the system. On the other hand, in order to improve the technologic literacy, it is considered that it would have positive effect when a commission created by Turkish Union of Banks states the importance of internet using in the banking by providing mini seminars for the customers. By the way, by taking into the consideration of the demographic classifications such as age, gender etc., it is more than important to facilitate the system using for disseminating the internet using in the sector.

Although Turkey has less internet usage ratios compared with developed countries, it has an increasing trend within the country. As of low or even free operational costs, developing telecommunication infrastructure and accessibility,

internet banking is expected to prevail and diversify more. According to the trend analysis results taken out from the data in this study; as internet banking is primarily preferred for credit card and invoice payments, it would be an important marketing strategy for banks to run their marketing operations in coordination with those suppliers.

It is possible to say that internet banking has increased by means of investment volume as well. Besides, internet is an inseparable element of e-commerce. Internet banking has gone through important developments and changes by means of functions. Geographical distances lost importance, thanks to the internet. The internet has given the opportunity to consumers to make choices in global market, and to producers to enter international market. Because of all these reasons, the development of internet banking will make it easier to integrate with all elements of international trade, and improve it. In this study, the rapid adaptation of Turkey to internet banking and strong change over years can be observed. Although there is still a long path to follow when compared with developed countries, it is meaningful to reflect the increase potential of internet banking in Turkey, and the integration development to the global trade and international finance.

## REFERENCES

1. Sohail MS, Shanmugham B (2003) E-banking and customer preferences in Malaysia: An Empirical Investigation. *Information Science* 1: 207-217.
2. Çatı K, Öncü MA, Kocoğlu CM (2007) A Research on internet banking evaluation of bank customers. *Knowledge, Economy and Management International Congress*.
3. ITEMSdergi.kmu.edu.tr/userfiles/file/aralik2007/PDF/7.pdf
4. İleri YY, İleri H (2011) Effects of internet banking and e-commerce on Turkish economy. *Selçuk University Journal of Social Sciences Vocational School* 1: 109-126.
5. Sathye M (1999) Adoption Of Internet Banking By Australian Consumers: An Empirical Investigation. *International Journal of Bank Marketing* 17: 324-334.
6. Polatoğlu, Vichuda N, Ekin S (2001) An Empirical Investigation of the Turkish Consumers' Acceptance of Internet Banking Services. *The International Journal of Bank Marketing* 19: 156-166.
7. Karjaluohto H, Mattila M, Pentto T (2002) Factors Underlying Attitude Formation Towards Online Banking in Finland. *International Journal of Bank Marketing* 20: 261-272.

8. Suh B, Han I (2002) Effect Of Trust On Customer Acceptance Of Internet Banking. *Electronic Commerce Research and Applications* 1: 247-263.
9. Rotchanakitumnuai S, Speece M (2003) Barriers to Internet Banking Adoption: Aqualitative Study Among Corporate Customers in Thailand. *International Journal of Bank Marketing* 21: 312-323.
10. Şafaklı OV (2004) Evaluation of internet banking in TRNC in the EU process. *Congress on National Knowledge, Economy and Management*.
11. Akıncı A, Aksoy S, Atılğan E (2004) Adoption of Internet Banking Among Sophisticated Consumer Segments in an Advanced Developing Country. *The International Journal of Bank Marketing* 22: 212-232.
12. Flavian C, Guinaliu M, Torres E (2006) How Bricks and Mortar Attributes Affect Online Banking Adoption. *International Journal of Bank Marketing* 24: 406-423.
13. Sanmugam Annamalah (2007) Factors Determining Consumer Adoption of Internet Banking. *Social science research network*.
14. Reid M (2008) Integrating Trust and Computer Self-Efficacy with TAM: An Empirical Assessment of Customers' Acceptance of Banking Information Systems (BIS) in Jamaica. *Journal of Internet Banking and Commerce* 12: 1-16.
15. Malhotra P, Singh B (2009) Analysis of Internet Banking Offerings and Its Determinants in India. *Internet Research* 20: 87-106.
16. Chong A, Ooi K, Lin B, Tan B (2010) Online Banking Adoption: An Ampirical Analysis. *International Journal of Bank Marketing* 28: 267-287.
17. Omar AB, Naveed S, Khalid Z, Nazish B, Abdul W, et al. (2011) Customer Perception Towards Online Banking Services: Empirical Evidence from Pakistan. *Journal of Internet Banking and Commerce* 16: 1-24.
18. Akın F, Karaboğa K (2011) A research on assessment of factors effecting preference of the individual customers on internet banking: Bilecik example. *Marmara University* 1: 301-320.
19. Yıldız S, Karadirek G (2014) Electronic service quality perception: an assessment on individual internet banking users. *Gümüşhane University Electronic Journal of Social Sciences* 10: 302-329.
20. Ali (2012) The Factors Affecting Individuals Internet Banking Use On A

Field Study. Business and economic research journal.

21. Pala E, Kartal B (2010) A pilot research on bank customers' attitudes about internet banking. Management and Economy 2: 43-61.

22. Usta R (2005) A research on reasons of consumers not using internet banking. Journal of Doğuř University 6: 279-290.

23. Sanders M (2000) Global E-commerce Approaches Hypergrowth. Forrester Research, Cambridge, MA.

24. Aykaç SÖ, De Kervenoael R (2008) e-Banking in Turkey: Consumer experiences. National Marketing Congress.

25. [http://inet-tr.org.tr/inetconf13/kitap/icli\\_aslan\\_inet08.pdf](http://inet-tr.org.tr/inetconf13/kitap/icli_aslan_inet08.pdf)  
[http://inet-tr.org.tr/inetconf13/kitap/icli\\_aslan\\_inet08.pdf](http://inet-tr.org.tr/inetconf13/kitap/icli_aslan_inet08.pdf)

26. Bilgen M (2009) Responsibilities of banks due to damages caused by internet banking. Journal of Bankers 71: 78-97.

27. TBB (2015) Internet banking and security.

28. Cartwright IR (2000) Mastering Customer Relations. McMillan Master Series, London.

29. Sarel D, Marmorstein H (2003) Marketing Online Banking Services: The Voice of The Customer. Journal of Financial Services Marketing 8: 106-118.

30. Gefen D, Straub DW (2005) The Relative Importance of Perceived Ease-of-Use in IS Adoption: A Study of E-Commerce Adoption. Journal of the Association For Information Systems 1: 1-30.

31. Gerrard P, Cunningham JB, Devlin JF (2006) Why Consumers Are Not Using Internet Banking: A Qualitative Study. Journal of Services Marketing 20: 160-168.

32. Yıldırım O (2015) Historical Development, basic issues, fiscal risks and restructuring.

33. Özdemir S, Trott P, Hoecht A (2007) New Service Development: Insights from an Explorative Study into the Turkish Retail Banking Sector. Innovation: Management, Policy & Practice 9: 276-289.

34. Yardımcıođlu M, Kocamaz H, řerbetçi G (2012) Cyber internet banking application in the age of global communication. Symposium on regional problems and Turkey.

35. TBB (2015) Banking sector in Turkey (2009-2014 December).
36. TBB (2015) Banking sector in Turkey (1960-2014). Turkish Union of Banks Internet Banking Report.