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An Analysis of the Impact of Financial Technologies on the Banking Sector: Evidence from the UK and Turkey

by

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Abstract

This paper provides an analysis of the impact of financial technologies (FinTech) on the banking sectors in the UK and Turkey. It attempts to understand how financial technologies disrupt and improve the banking sectors by making it more sustainable and efficient from the viewpoint of a total of 17 Financial Services organisations in the UK and Turkey. This study believes that as London has successfully embraced and developed a FinTech ecosystem; other financial cities around the world, like İstanbul in Turkey, should learn from London and take it as a model to be replicated for fostering their own FinTech ecosystems which will significantly contribute to the development of their banking sectors. Findings from the semi-structured interviews with a total of 17 financial organisations in the UK and Turkey have significantly contributed to the creation of a development model for the FinTech sector and provided valuable insights on how to accelerate the FinTech sector in London and how to develop the FinTech sector in İstanbul.

Key words: Financial Technology • FinTech • United Kingdom • Turkey • Banking • Innovation • Ecosystem • Banking Technologies • London • İstanbul

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Glossary of Terms

BAT	The Banks Association of Turkey
ATM	Automated Teller Machine
B2B	Business to Business
B2C	Business to Consumer
BBA	British Bankers' Association
BN	Billion
BOE	Bank of England
BRSA	Banking Regulation and Supervision Agency
CBRT	Central Bank of the Republic of Turkey
CMB	Capital Markets Board of Turkey
EU	European Union
FC	Funding Circle
FCA	Financial Conduct Authority
FINTECH	Financial Technologies
FSA	Financial Services Authority
FX	Foreign Exchange
GDP	Gross Domestic Product
GEN-Y	Generation Y
GFC	Global Financial Crisis
ICT	Information and Communication Technology
IFC-I	Istanbul Financial Center Initiative
IT	Information technology
LIBOR	London Interbank Offered Rate
M	Million
NFC	Near Field Communication
NY	New York
P2P	Peer-to-Peer
POS	Point of Sale
PR	Public Relations
R&D	Research and Development
RBS	Royal Bank of Scotland
SME	Small and Medium-sized Enterprises
STP	Science and Technology Park
UK	United Kingdom
US	United States
VC	Venture Capital

1. Introduction

After the Global Financial Crisis (GFC) in 2008, consumer experience has become the heart of the banking sector and banks have realised that welcoming innovation and creating relations with entrepreneurs provide them with the competitive advantage they need to minimise their financial and regulatory constraints while helping them to increase customer satisfaction (Lawrence, 2014).

The financial technology (FinTech) sector has become one of the fastest growing entrepreneurial areas for start-ups looking at “disrupting” traditional banking. Over the past few years, the FinTech sector has been growing significantly in the UK, and London has become one of the world’s leading centres providing a great infrastructure for FinTech start-ups. Many traditional banks in the UK have realised that this development is an opportunity for them to integrate innovative solutions quickly into their operations either for better efficiency or customer service.

The main objective of this dissertation is to investigate how the FinTech sector disrupts and improves the banking sector by making it more sustainable and efficient. This study believes that as London has successfully embraced and developed a FinTech ecosystem; other financial cities around the world, like İstanbul in Turkey as suggested in this study, should learn from London and take it as a model to be replicated for fostering their own FinTech ecosystems which will significantly contribute to the development of their banking sectors.

This dissertation has been divided into four parts. The first part is Introduction, which provides the definition of FinTech, an overview of the banking industries in the UK and Turkey, technology developments in the banking industries in the UK and Turkey, overview of the FinTech sectors in the UK and Turkey and examples of partnerships between the banking sector and FinTech sector from the UK and Turkey.

The second part is Research Methodology, which provides information about the research methodology, data collection and questionnaire design.

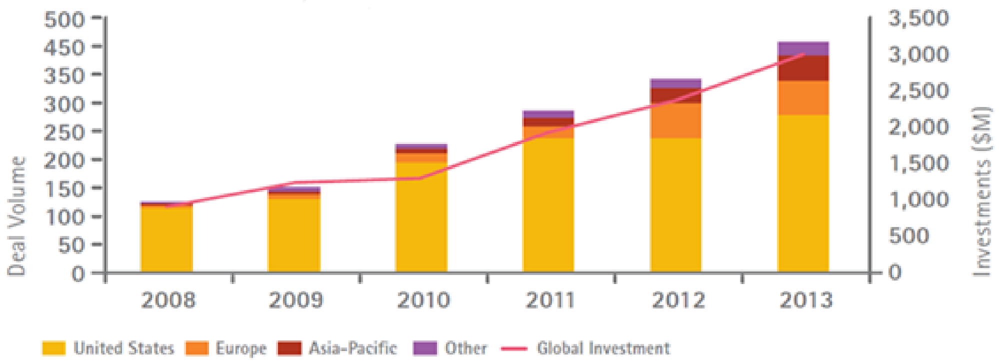
The third part is Major Findings and Analysis, which provides the findings from interviews with organisations in the United Kingdom and Turkey.

Finally, the fourth part is Conclusion and Recommendations, which presents my conclusion of the findings from interviews and managerial implications. The managerial implications part provides SWOT analysis of the FinTech sector both in London and in İstanbul, a development model for the FinTech sector, recommendations for accelerating the FinTech sector in London and recommendations for developing the FinTech sector in İstanbul.

1.1. Definition of FinTech

In their recent report about the FinTech industry, Accenture (2014a) indicated that global investment made in FinTech companies has boomed from under $930m in 2008 to more than $2.97bn in 2013. Moreover, the report stated that due to the new trends and continuous changes happening in financial services, which have been triggered by developing technology, changing consumer behaviour, regulatory needs and necessity to decrease cost; it’s expected that the amount invested in FinTech companies will continue to increase globally.

Figure 1.
Global FinTech Financing Activity



Source: Accenture (2014)

Lawrence (2014) indicated that after the GFC in 2008, consumer experience has become the heart of the banking sector and banks have realised that welcoming innovation and creating relations with entrepreneurs provide them with the competitive advantage they needed to minimise their financial and regulatory constraints while helping them to increase customer satisfaction.

Lawrence (2014) stated that the FinTech sector provides technologies and software for ensuring the smooth operations of banking and financial services industries. FinTech includes areas such as money transfer, payment systems, crowd funding, loans and asset management and are created by the technology companies and start-ups which are looking at disrupting the traditional operations of banks and financial organisations. Antle (2013) indicated that definition of FinTech, which is simply the technology innovations supporting financial services companies and their customers, has been changed recently. Boteler (2014) stated that in the past only back and middle offices used and benefited from financial technologies for saving money while front offices were human-driven and relationship-based. However, nowadays FinTech includes back, middle and front office operations and customer groups benefiting from these technologies have been extended; including asset managers, advisors, hedge funds, big companies and small and medium enterprises (SMEs).

National Digital Research Centre (NDRC) (2014) indicated that financial organisations could utilise financial technologies in payments and transactions, digital wallets, mobile and retail banking, peer-to-peer (P2P) lending, crowd funding, digital and alternative currencies, trading and foreign exchange (FX), commodities markets, risk and compliance, security and privacy, financial advisory services and insurance. Münch (2014) stated that FinTech companies have been helping banks to strengthen their competitive advantage by enabling them to reduce their costs significantly. Unlike traditional banks which have considerable amount of overheads and commitments, FinTech companies are able to generate savings through innovating and adapting by being smaller, more agile and quicker than banks.

NDRC (2014) indicated that there are 4 main customer groups FinTech companies have been serving. The first group is identified under business to business (B2B) segment, including the large and long-established financial institutions, which are governed by regulation, with complex value chains and long sales cycles. The second group is also identified under B2B segment which includes the customers of financial organisations, advisors, brokers, asset managers, corporates and SMEs. The third group is identified under business to consumer (B2C) segment, including small businesses which bank differently and seek for value and alternative capital sources. The last group is identified under B2C segment and includes consumers who prefer online banking over physical branches and who search for the best deal in the market for their financial needs.

1.2. Literature Review

There is a lack of focus on the FinTech sector in the literature. However, as the FinTech sector has been growing and developing recently, it's expected to see an increase in the number of scholars studying FinTech in the future. This part of the study reviews the current literature regarding banking technologies and sub-sectors of FinTech.

Ibrahim et al. (2006) analysed the consumers' perceptions on electronic service delivery in retail banking in the United Kingdom (UK). The study of Boyacioglu et al. (2010) showed that Turkish banks perform very well in offering online banking products and services. Sayar and Wolfe (2007) compared internet banking services in Turkey and the UK and found that Turkish banks provide wider range of services through internet branches than UK banks. Yousafzai and Yani-de-Soriano (2012) studied the customer-specific factors affecting the adoption of internet banking. Wang et al. (2014) indicated that perceived ease of use and perceived usefulness of online banking services by customers are positively correlated to the adoption of online banking services in Taiwan. Pala and Kartal (2010) stated that the main factors affecting customers to start using internet banking are time, convenience, cost, service quality and security in Turkey. The study of Bayrakdaroglu (2012) showed that security and privacy are the main factors affecting the use of internet banking in Turkey. The study of Aktan et al. (2009) concluded that internet usage in financial services has been growing significantly in Turkey with its young population. Bidar et al. (2014) found that perceived usefulness, compatibility, and social influence are positively affecting mobile banking adoption in Turkey. Koenig-Lewis et al. (2010) indicated that compatibility, perceived usefulness, and risk are important factors for adopting mobile banking services. The study of Tiwari et al. (2007) showed that mobile channels can become an essential part of the multi-channel strategies of banks. Singh et al. (2014) analysed the importance of mobile banking in financial inclusion. The study of Harasim and

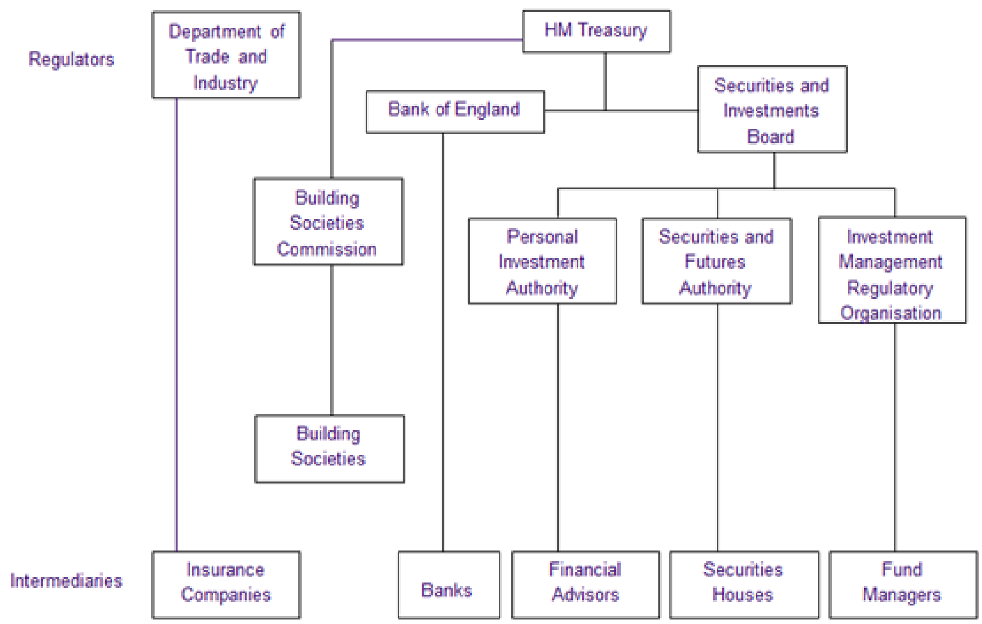
Klimontowicz (2013) suggested that in order to achieve a successful adoption of payment innovations among customers, banks should encourage different retail payment instruments/methods among customers. Ozkan et al. (2009) found that security, advantage and web assurance seals are necessary for customers to adopt an electronic payment system. Papadopoulos (2007) indicated that electronic money is an on-going scheme and suggested that innovative technologies may provide new solutions, increase convenience and decrease costs. Lim (2013) analysed P2P platforms and indicated that banks have to recognise that P2P platforms will continue to exist in consumer lending world.

1.3. Overview of Banking Sectors

1.3.1. The Banking Sector in United Kingdom

Before 1997, Bank of England (BOE) was responsible for regulating and supervising the UK's banking sector while ensuring its stability.

Figure 2.
Structure of UK Financial Regulation Before October 1997

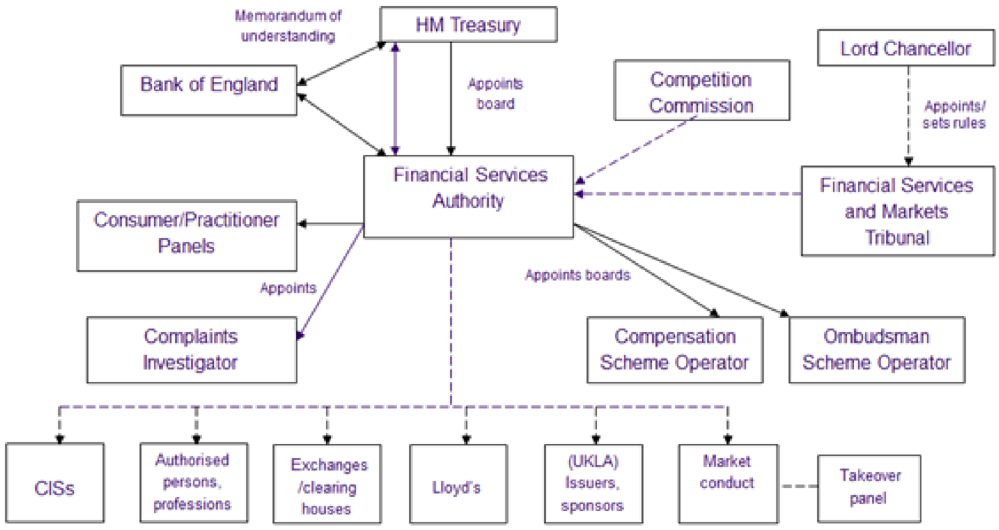


Note: Pension funds, for example, are ignored, as are friendly societies.

Source: Hall (2012)

Due to the banking and financial scandals occurred in the 1990's, the need for creating an independent supervisory authority apart from BOE arose. In order to serve this purpose, Financial Services and Markets Act became operational in 2001 and Financial Services Authority (FSA) was founded to supervise and regulate the UK's financial services sector and maintain confidence in the market (Krouse, 2011).

Figure 3.
The New Institutional Framework under Financial Services and Markets Act

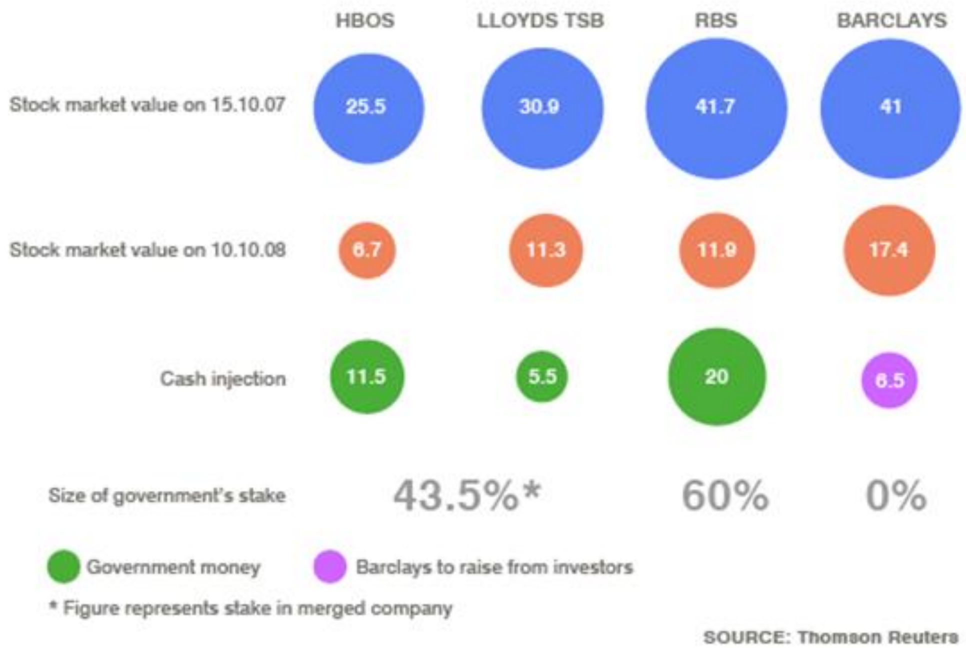


Source: Turing and Cramb, 2000

Source: Hall (2012)

UK banking system was strongly affected by the GFC in 2008, which was caused by the meltdown in the US sub-prime mortgage market. Some banks were collapsed and needed to be bailed out by UK Government. The failure of Northern Rock, caused by solvency and credit quality problems and the lack of securitised credit assets and wholesale funding availability, led to its nationalisation in 2008 (Turner, 2009). Bradford&Bingley and HBOS were also suffered from similar funding issues in 2008. Moreover, Royal Bank of Scotland (RBS) failed due to its weak capital position, over-reliance on risky short-term wholesale funding and huge losses in credit trading activities (FSA, 2011). As a result of poor management decisions, regulation and supervisory approach, RBS reported the biggest loss, £24.1bn for 2008, in British corporate history. In order to decrease the effects of troubled banks to financial system, UK Government performed the UK's biggest nationalisations and injected £37bn of taxpayers' money into RBS, Lloyds TSB and HBOS (Anon., 2008).

Figure 4.
Bank Values and Cash Injections (bn)



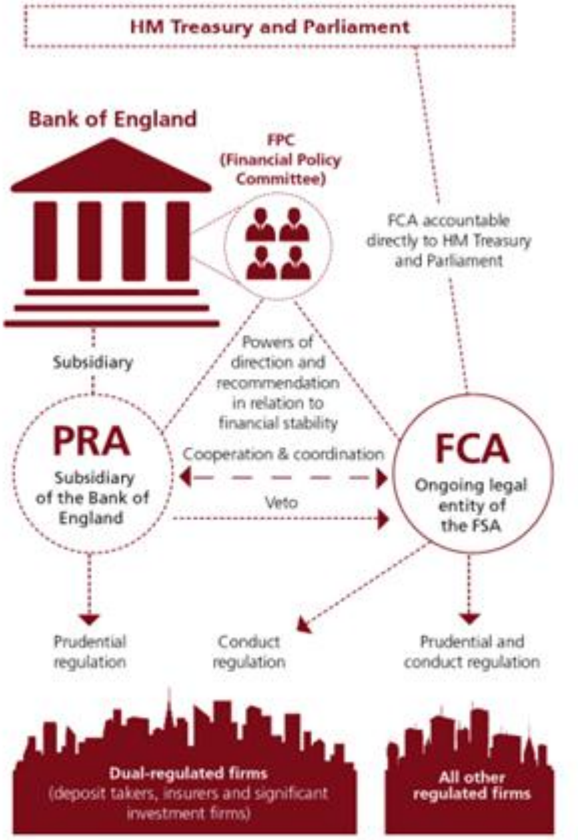
Source: BBC News (2008)

Banking Act was introduced in 2009 to provide guidance for dealing with troubled banks. It mainly focuses on the stabilisation options, bank insolvency and bank administration procedures. Moreover, The Turner Review was published in 2009 to recommend regulatory and supervisory changes regarding capital adequacy, liquidity, deposit insurance, resolution of UK banks, risk management and governance (Turner, 2009).

Independent Commission on Banking, Vickers Report, was published in 2011 in order to promote financial stability and competition in the UK banking sector through structural and non-structural reforms. In order for government not to bail out banks because of their investment banking related losses, ring-fencing the retail banking operations from bank's investment banking operations and establishing separate board of directors for them by 2019 is suggested (Jenkins et al., 2011).

As GFC revealed the weaknesses of FSA in regulating and supervising the financial sector, UK Government decided to create new regulatory bodies. With Financial Services Act 2012, FSA was abolished and Prudential Regulation Authority, which is responsible from micro-prudential regulation under BOE; Financial Conduct Authority (FCA), which is responsible from business conduct and market regulation; and Financial Policy Committee, which is responsible from macro-prudential regulation, were established in 2013 (The Chartered Insurance Institute, 2013).

Figure 5.
The New Regulatory Structure



Financial Conduct Authority Diagram, from FCA Business Plan 2013/14, p.58

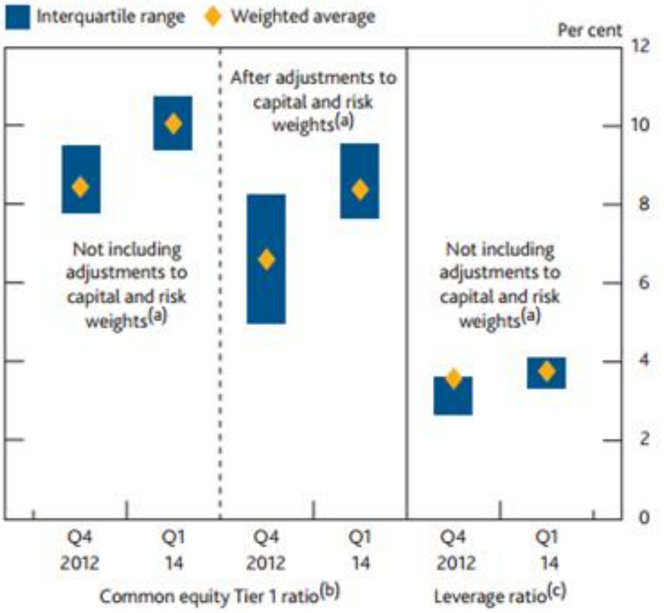
Source: The Chartered Insurance Institute (2013)

Parliamentary Commission on Banking Standards report was published in 2013 as a reaction to LIBOR scandal. It aims to define professional standards and culture of the UK banking sector by focusing on corporate governance, transparency and conflicts of interest (Saigol, 2013).

Financial Services (Banking Reform) Law entered into force in 2013 and aims to bring structural and cultural changes to UK banking system by ring-fencing the retail banking operations of banks, stimulating competition between financial services firms and imposing higher standards of conduct on banking industry (Osborne and Leadsom, 2014).

According to Bank of England (2014a), capital ratio of UK banks have increased between 2012 and 2014. Average unadjusted Common Equity Tier 1 ratio of UK banks increased to 10% between 2012 and 2014 while their leverage ratio increased to 3.8%. After the adjustments to capital and risk weights, average Common Equity Tier 1 ratio of banks increased to 8.4%.

Figure 6.
UK Banks' Capital and Leverage Ratio



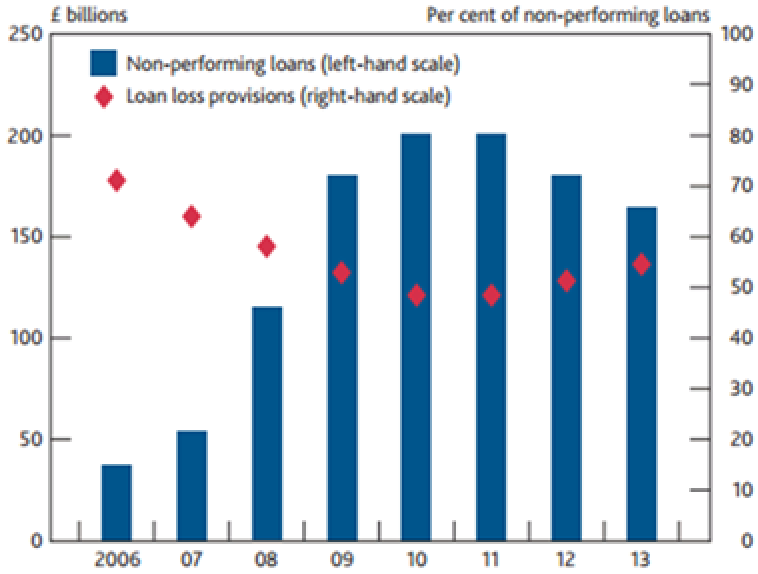
Sources: Prudential Regulation Authority (PRA), published accounts and Bank calculations.

(a) See www.bankofengland.co.uk/publications/pages/news/2013/081.aspx.
(b) Uses end-point CRD IV definitions.
(c) Calculated as end-point CRD IV Tier 1 capital divided by the leverage ratio exposure as defined by Basel 2010 proposals.

Source: Bank of England (2014)

Due to the improvements in UK banks’ asset quality, non-performing loans of major UK banks decreased to £165bn in 2013. At the same time, UK banks’ loan loss provisions stayed around £90bn.

Figure 7.
Major UK Banks’ Non-performing Loans and Provisions(a)



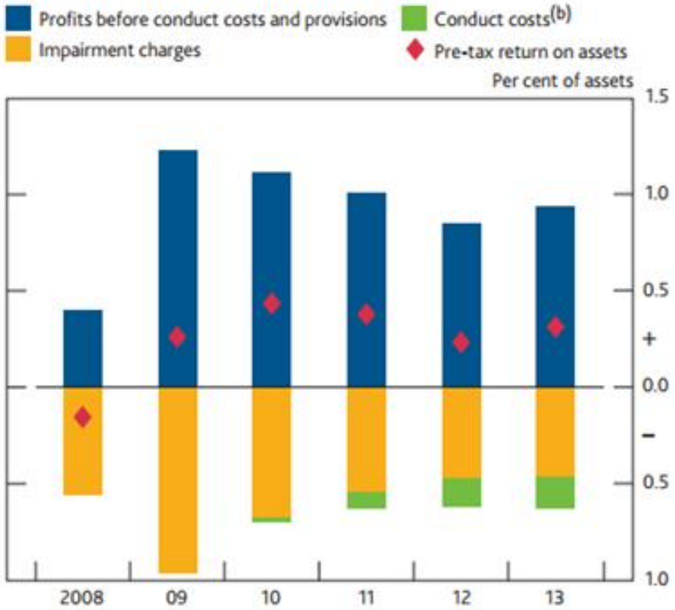
Sources: Bank of England, published accounts and Bank calculations.

(a) Non-performing loans are as reported by the major UK banks.

Source: Bank of England (2014)

Average profitability of UK banks stayed relatively low while their operating expenses increased to record levels in 2013.

Figure 8.
Major UK Banks' Pre-tax Return on Assets



Sources: Bank of England, published accounts and Bank calculations.

(a) Excludes Virgin Money.
(b) Includes provisions for customer redress related to mis-sold payment protection insurance and interest rate swaps, and regulatory fines relating to the manipulation of Libor and lapses in anti-money laundering controls.

Source: Bank of England (2014)

Major UK banks are among the largest banks in Europe. As of 2014, there are 314 banks registered in the UK (Bank of England, 2014b).

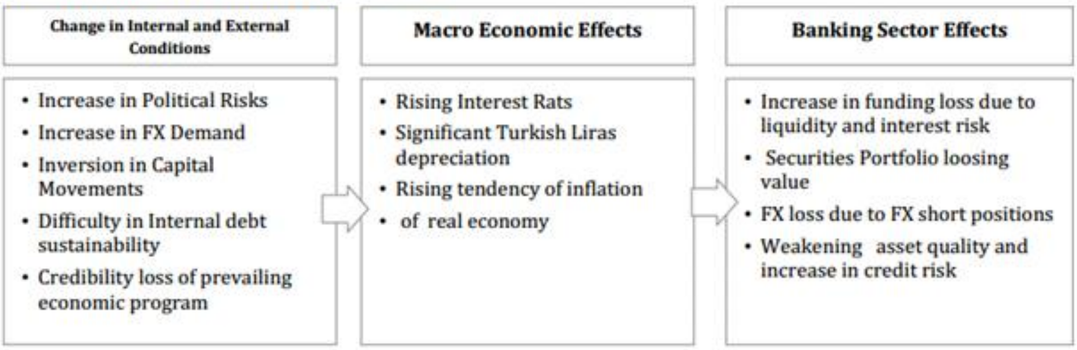
1.3.2. The Banking Sector in Turkey

According to Gorener and Choi (2013), the Turkish banking sector is divided into three major periods which are the pre-crisis period (1992–1998), the crisis period (1999–2003) and the post-crisis period (2004–2009). The pre-crisis period was shaped by financial deregulation which led to an increase in number of banks and a decrease in market concentration. As a result of weak regulation and discipline, number of banks in Turkey rose from 66 in 1990 and to 81 by the end of 1999. Moreover, macroeconomic instability and global crises during the 1990s damaged the Turkish banking sector. Before the occurrence of the biggest crisis in Turkey's history, financial system was supervised by Turkish

Treasury, Central Bank of the Republic of Turkey (CBRT), Capital Markets Board (CMB), Prime Ministry, and Ministry of Finance at the same time, which creates a lack of coordination between regulatory bodies. As Turkey's economy became vulnerable and its financial sector was getting weaker, a significant need for a supervisory and regulatory body arose. In order for one authority to supervise and regulate the entire sector, Banking Regulation and Supervision Agency (BRSA) was founded and started its operations in 2000 (Ozkan-Gunay and Tektas, 2006).

As a result of weak economic growth, unsustainable domestic debt, high inflationary environment and uncertainties in current account financing, the biggest twin crises occurred in Turkey's history in November 2000 and February 2001, which later created a systemic crisis in the Turkish banking sector (Gorener and Choi, 2013). According to BRSA (2001), Turkish banks were affected by three major shocks which were the rise in funding costs as a result of the increase in interest rates and maturity mismatch, capital losses as a result of mark-to-market decline in the value of government securities holdings and capital losses due to the change in foreign exchange rate and open foreign currency position. Eken and Kale (2013) indicated that during the crisis, the banking sector lost 22.7% of its assets based in $ while the number of banks, branches, and personnel reduced significantly.

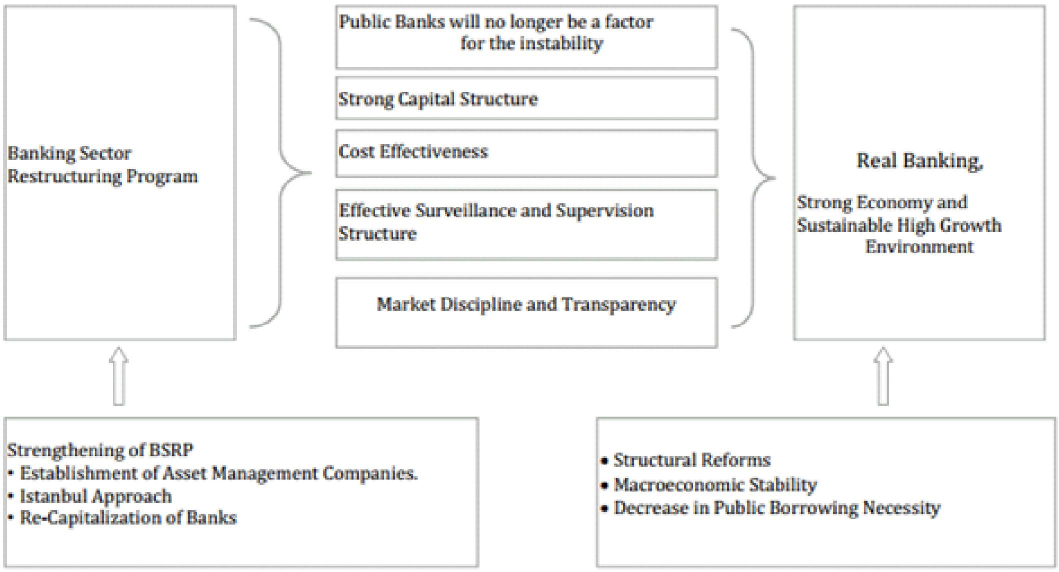
Figure 9.
February 2001 Crisis Process



Source: BRSA (2010)

The crisis period was shaped by re-regulation due to the rise in non-performing loans and negative profits. Important structural changes had taken place in the Turkish banking sector in order to create an environment with greater monetary and macroeconomic stability. Turkish Government took actions and adopted a new program, which is called "Transition to a Strong Economy" based on market-orientation and openness to world economy, for removing the confidence crisis and financial instability. Moreover, in order to transform the damaged banking sector into a resilient and competitive one, Banking Sector Restructuring Program (BSRP) was launched, which focused on restructuring public banks and bringing healthy structure to private banks, strengthening legal and institutional framework of banking supervision and resolution of banks through sale, merger, liquidation or transfer (BRSA, 2010a).

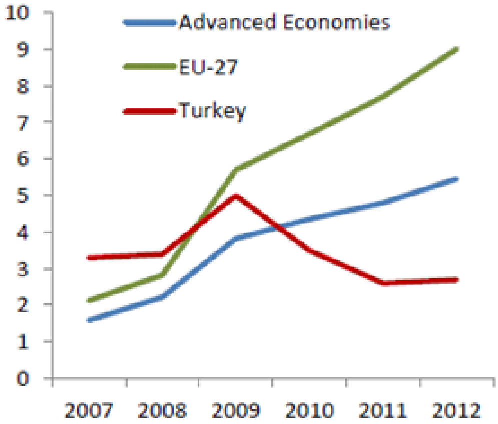
Figure 10.
Restructuring Program



Source: BRSA (2010)

With the help of these efforts, Turkey has achieved macroeconomic stability. In addition, the Turkish banking sector has become very sound due to its banking regulation and supervision and conservative banking practices. As a result, the sector has been growing constantly since 2004. BRSA (2010b) indicated that the Turkish banking sector has managed to attract global capital as a result of the positive developments in national and international environment after 2002.

Figure 11.
Nonperforming Loans to Total Loans (percent)



Source: IMF-Financial Soundness Indicators

Source: Aysan and Ermisoglu (2013)

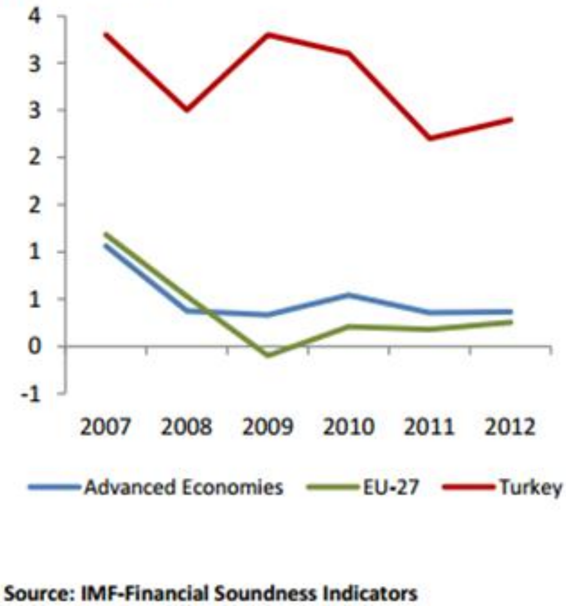
Figure 12.
Foreign Capital in the Banking Sector (bn TL)

Source: BRSA-CBRT

Source: Aysan and Ermisoglu (2013)

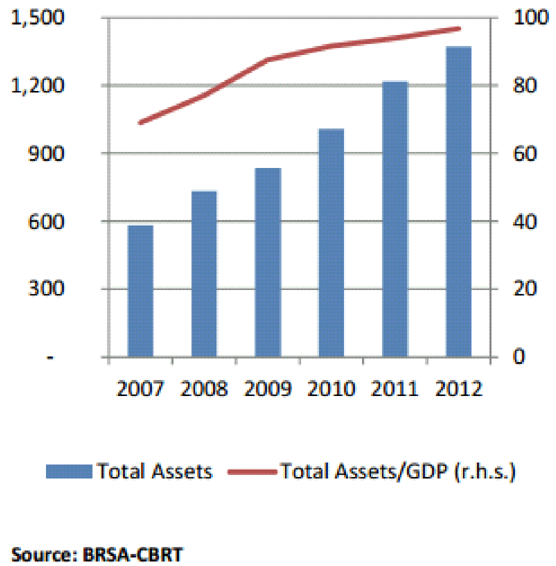
Structured reforms and political stability after the twin crises have helped Turkey to develop a robust banking system enabling Turkey to overcome GFC without a major damage and recover rapidly (Erdem, 2013). None of the banks in Turkey were needed to be bailed out during the GFC. Aysan and Ermisoglu (2013) indicated that Turkish banks are profitable, sound and well-capitalized and stated that during the GFC Turkish banks have maintained their asset quality for a long time without major gaps.

Figure 13.
Return on Assets (percent)



Source: Aysan and Ermisoglu (2013)

Figure 14.
Total Assets



Source: Aysan and Ermisoglu (2013)

The Turkish banking sector fully adapted Basel II framework in 2012 and most of the draft regulations related to Basel III have been completed on time by the BRSA. According to the The Banks Association of Turkey (BAT) (2014a), there were 46 banks operating in Turkey at the end of June 2014.

Table 1.
Number of Banks and Branches in the System*

	June 2013		December 2013		June 2014	
	Banks	Branches	Banks	Branches	Banks	Branches
Deposit banks	**32**	**10,515**	**32**	**10,981**	**33**	**11,096**
State-owned banks	3	3,180	3	3,397	3	3,431
Privately-owned banks	12	5,235	11	5,339	11	5,395
Banks in the Fund**	1	1	1	1	1	1
Foreign banks	16	2,099	17	2,244	18	2,269
Development and inv. banks	**13**	**41**	**13**	**40**	**13**	**41**
Total	**45**	**10,556**	**45**	**11,021**	**46**	**11,137**

** Branches in foreign countries and Turkish Republic of Northern Cyprus are included.*
*** Banks under the Deposit Insurance Fund*

Source: BAT (2014)

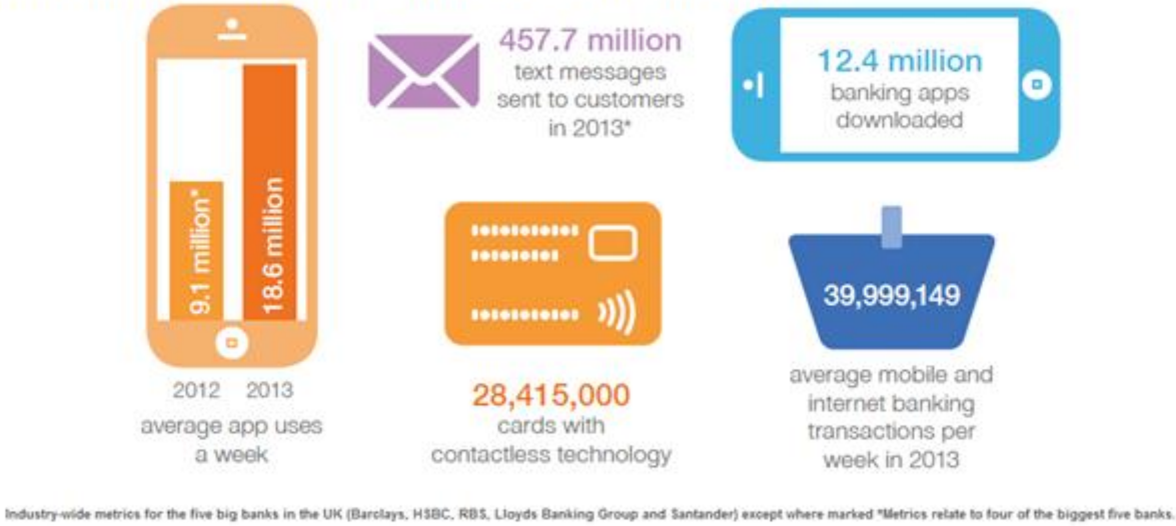
According to BRSA (2014), as of December 2013, asset size of Turkish banking industry is TL1.732bn while loans are composing 60.5% of total assets with TL1.047bn. Moreover, the sector's profit is TL24.732m while its return on assets and return on equities are respectively 1.6% and 14.2%. Finally, the sector's capital adequacy standard ratio is 15.3% and nonperforming loans ratio is 2.7% as of December 2013.

1.4. Adoption of New Technologies by Banking Sectors

1.4.1. Technology Developments in the UK Banking Sector

British Bankers’ Association (BBA) (2014) indicated that current transformation in the UK banking sector is driven by developing technology and banks have realised that in order to acquire new customers they have to develop innovative banking technologies enabling people to bank easier, securer and faster. In addition, innovative banking technologies have been enabling UK banks to communicate with their customers more effectively and to offer special services to them.

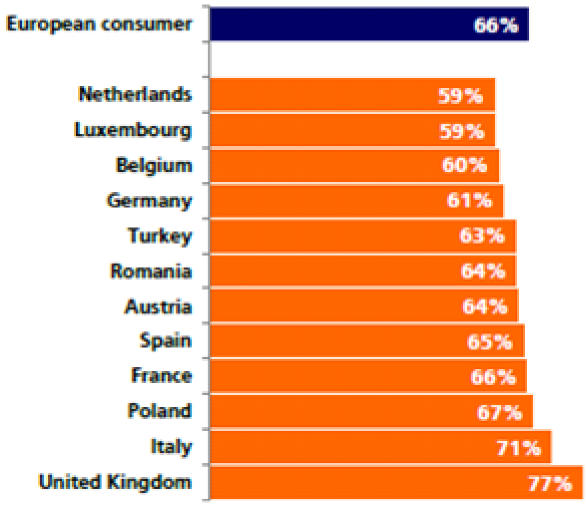
Figure 15.
Adoption of Banking Technology by UK Consumers



Source: British Bankers' Association (BBA) (2014)

Browne (2014) indicated that consumers in the UK have been embracing alternative banking channels, such as mobile and online banking, as these technologies provide them with greater flexibility when spending, moving and managing their money. According to the survey conducted by Avanade (2014), 93% of UK banks believe that mobile is the future while 36% of UK consumers from all age groups believe that they will use their mobile to do all banking transactions by 2020. According to ING International (2013), 77% of the people in the UK think that with the help of mobile banking they manage their money better.

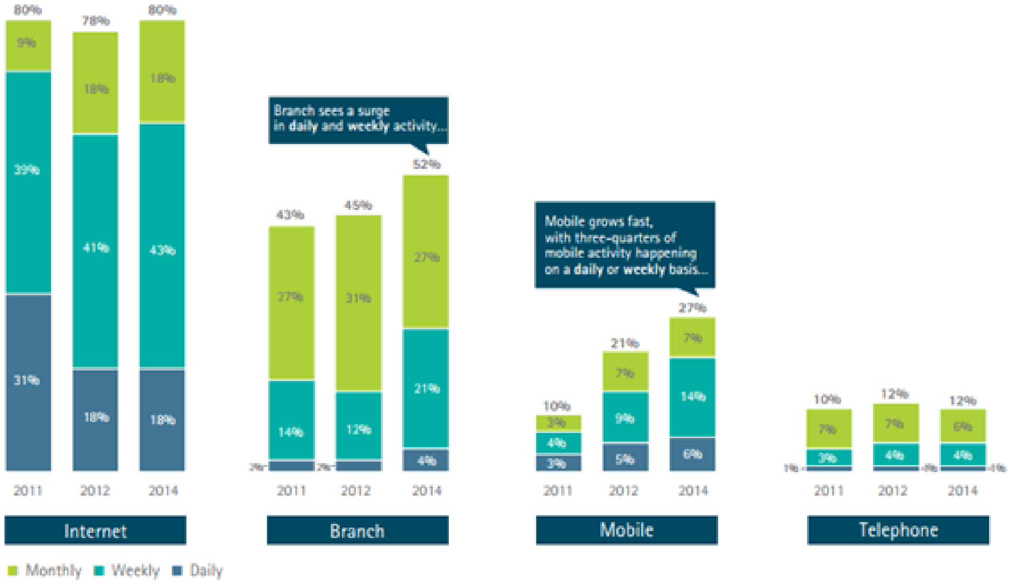
Figure 16.
Responses to the Question: "Do You Feel More in Control of Your Money Because You Use Mobile Banking?" (percent who answered "yes")



Source: ING International (2013)

Accenture (2014b) indicated that mobile banking usage in the UK has been growing fast as three-quarters of mobile activity happening on a daily or weekly basis. Moreover, monthly mobile banking usage has increased from 21% to 27% between 2012 and 2014. On the other hand, Genpact and YouGov (2014) showed that 75% of UK Gen-Y consumers, who are aged between 25 and 34 and have grown up with the Internet, prefer using online banking and mobile banking applications while 13% of them prefer visiting a bank branch to make their transactions.

Figure 17.
Daily, Weekly and Monthly Aggregate Usage of Banking Channels by UK Customers, 2011-2014



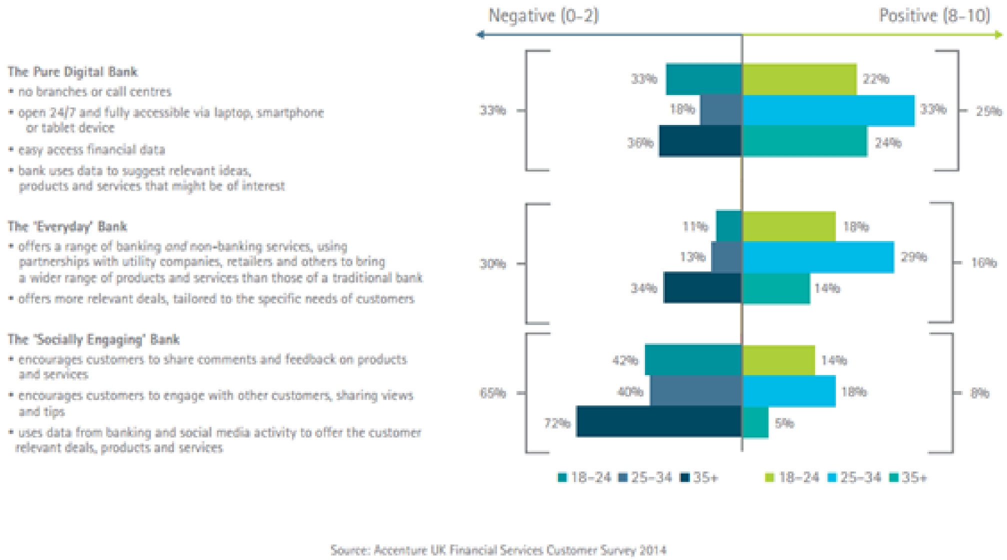
Source: Accenture UK Financial Services Customer Surveys 2011, 2012 and 2014

Source: Accenture (2014)

The UK banking sector is taking relevant steps to adapt to changing behaviours of consumers and banking trends. For example, in 2012 Barclays launched its own payment application, Pingit, which allows sending and receiving money by using mobile number, without sharing bank account details. Moreover, Pingit enables customers to purchase goods and services faster and easier by scanning a QR code or by using Pingit at the checkout without entering card details. Winch (2014) reported that Pingit has been downloaded more than 2.5m times by UK consumers. Evans (2013) indicated that NatWest and Lloyds Banking Group took a step to upgrade their existing ATMs and in-branch cash and deposit machines and decided to launch talking cash machines to provide the blind or partially sighted people in the UK with independence when they withdraw money from ATMs. On the other hand, Anon. (2014a) reported that Barclays collaborates with a charity in order to teach and train the older generation how to the benefit from the internet and smart devices in their daily lives. Martin (2013) stated that UK Government is planning to launch cheque imaging technology which will enable banks to verify and clear a cheque from an image, instead of using the original paper copy. With the new technology customers will be able to deposit a cheque by taking its photo on the smartphone and send it to their bank.

Bachelor (2014) reported that Atom Bank, the UK's first "digital only" bank, will be launched in 2015 and will be providing all the products and services any high street bank provides for their retail and business customers. Accenture (2014b) found that one in four UK current account customers would think of using a pure digital bank while one in three UK current account customers aged between 25 and 34 would consider using it.

Figure 18.
Responses to the Question: "Would You Consider Using Any of the Types of Financial Services Provider?" (by age bracket)



Source: Accenture (2014)

Hyde (2014) indicated that developments in banking technology explain the increase in bank branch closures. Winch (2013) reported that Clydesdale and Yorkshire Banks will close 28 branches and will invest £20m to boast mobile banking services. Christie (2014) stated that frequent information technology (IT) failures related to their alternative banking channels led RBS to cut numbers of jobs in its retail banking side in order to invest more in their mobile and online services. It's stated that with innovative solutions banks offer to their customers, bank branches have started to become places where customers visit for important decisions requiring personal interaction, such as applying for a mortgage. Barty and Ricketts (2014) predicted that banking will be a less physical and more virtual operation in the future as UK's younger generation has grown up with internet and online access.

1.4.2. Technology Developments in the Turkish Banking Sector

Anon. (2013a) expressed that Turkey has transformed into a digital hotspot and Turkish Government has been promoting competition in the banking sector by softening on tight banking regulations in the last years which led Turkish banks to innovate more for acquiring new customers. The Turkish banking sector is driven by innovation and customers are provided with some of the most advanced mobile banking applications (Global Finance, 2013; Beck, 2011). The banks, vendors and payment market suppliers in Turkey indicated that Turkey has a great potential for mobile financial services and payments (Eurasia Insights, 2012).

Figure 19.
Turkey: Key Statistics

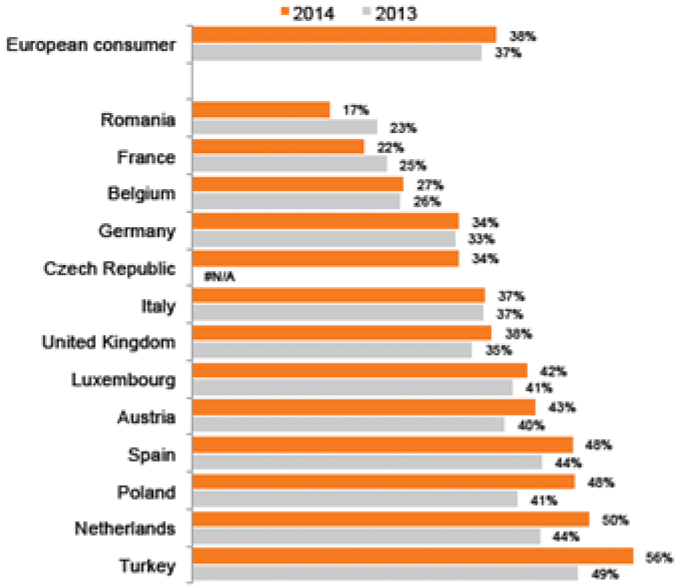
Population	74 million
Unbanked population	40 million
Mobile banking penetration	89 %
Facebook users	30 million
Economic growth 2011	8 %
Consumer debt as proportion of GDP	52 %
Number of cards (debit & credit)	118 million
Number of retail banks	34

Source: BKM, Eurasia Payments Report, Facebook, World Bank

Source: Eurasia Insights (2012)

According to the survey ING International (2014) conducted, Turkey is identified as the top mobile banking "hotspot" as 56% of participants claimed that they use mobile banking (ING International, 2014). The study suggested that growth of internet access leads to an increase in mobile banking usage in Turkey.

Figure 20.
Do You Use Mobile Banking? (percentage who answered "yes")



Source: ING International (2014)

6m registered mobile banking customers (65% of total customers) in Turkey used mobile banking services during the April-June 2014 period (The Banks Association of Turkey, 2014b).

Table 2.
Number of Customers Using Internet Banking Services

	June 2013 (Thousand)	March 2014 (Thousand)	June 2014 (Thousand)
Number of retail customers			
Active (A) *(that logged in at least once in the related three-month period)**	10,468	12,039	12,134
Registered (B) *(that logged in at least once)*	25,313	28,590	29,669
Registered (C)*(that logged in at least once in one-year period)*	15,707	17,462	17,807
Active (A) / registered (B) (percent)	**41**	**42**	**41**
Number of commercial customers			
Active (A) *(that logged in at least once in the related three-month period)**	980	1,066	1,090
Registered (B) *(that logged in at least once)*	2,189	2,086	2,152
Registered (C) *(that logged in at least once in one-year period)*	1,197	1,272	1,311
Active (A) / registered (B) (percent)	**45**	**51**	**51**
Number of total customers			
Active (A) *(that logged in at least once in the related three-month period)**	11,448	13,105	13,224
Registered (B) *(that logged in at least once)*	27,503	30,677	31,822
Registered (C) *(that logged in at least once in one-year period)*	16,904	18,734	19,118
Active (A) / registered (B) (percent)	**42**	**43**	**42**

Source: BAT (2014)

Table 3.
Financial Transactions in Turkey

	June 2013		March 2014		June 2014	
	Number of transact. (Thousand)	**Volume of transact. (M TL)**	**Number of transact. (Thousand)**	**Volume of transact. (M TL)**	**Number of transact. (Thousand)**	**Volume of transact. (M TL)**
Money transfers	58,684	367,380	60,805	409,055	62,995	439,562
Payments	37,769	22,547	44,171	25,463	42,836	26,002
Credit card transact.	11,084	11,419	11,357	13,192	11,307	14,346
Other fin. transact.	2,721	30,209	2,641	29,275	2,511	31,655
Total	**110,258**	**431,555**	**118,974**	**476,984**	**119,649**	**511,565**

Source: BAT (2014)

According to Ensor (2012), the Turkish banking sector is an example for the innovation clusters where one organisation's innovation lead its competitors not only to adopt it but also to advance it, a situation which creates a rapid cycles of innovation. It's indicated that Turkish banks are very successful in adopting and launching new technologies for the first time in the world.

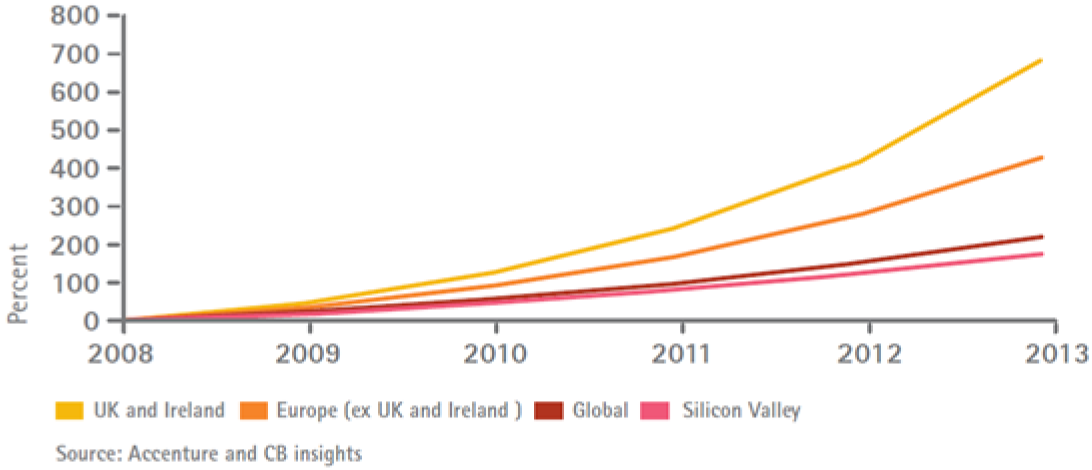
Anon. (2010) reported that Yapı Kredi Bank launched Turkey's first talking ATMs specially designed for blind or visually impaired people to withdraw money or control their balances. Moreover, Yapı Kredi Bank has become the first in the world to implement specially designed point of sale (POS) terminals meeting the needs and expectations of blind or visually impaired people. On the other hand, VakıfBank (2014) announced that it will also launch talking ATMs. Anon. (2011) indicated that Ziraat Bank launched Turkey's and the world's first Video Teller Machines (VTM) which are open all the time and enable customers to deposit, withdraw or send money, buy and sell foreign exchange, make payments, buy bonds and use videoconferencing technology to connect with customer representatives for banking transactions. Hitachi (2012) announced that İşbank achieved its objective to have the biggest biometric ATM network in Europe, the Middle East and Africa region by implementing more than 2,400 biometric ATMs. Anon. (2012) reported that the first true digital banking service in Turkey, Finansbank Enpara.com, attracted 20,000 customers and collected TL700m of deposits in the month after being launched. Yapi Kredi (2012) indicated that after introducing the first financial iPhone application in 2009 in Turkey, Yapı Kredi Bank became the first bank to launch "Bump to Send" which enables Yapı Kredi mobile banking customers to send money to each other by only shaking of their iPhones. In 2012, Interbank Card Center of Turkey (2013) launched Turkey's national digital wallet, BKM Express, which enables consumers to make online and mobile card payments faster and easier without sharing their card information. In addition, mobile application of BKM Express enables consumers to send money to any card or mobile number from anywhere. Yapı Kredi, İş Bankası, Denizbank and Vakıfbank have been collaborating with the leading Turkish mobile operator, Turkcell, to benefit from its contactless mobile payments service (Turkcell, 2014). By adding their credit cards to Turkcell's mobile wallet, Turkish customers can make their payments through an NFC-enabled phone. With its mobile banking application Akbank Direkt, Akbank's has become world's first bank to have a mobile banking application on a smart watch (Akbank, 2014).

1.5. The Rise of the FinTech Sector

1.5.1. Overview of the UK FinTech Sector

The FinTech sector in the UK has been growing rapidly. The volume of FinTech deals taken place in the UK and Ireland in 2013 has become three times more than the volume in 2011. Moreover, the growth in the number of FinTech deals in the UK and Ireland was three times the global average and more than five times the growth of FinTech deals in Silicon Valley.

Figure 21.
Five-Year Growth in Fintech Investment ($M)



Source: Accenture (2014)

According to UK Trade & Investment (2014), the main strengths of the UK in FinTech are having London as a global centre for financial services and a global trading hub, a big and technologically sophisticated customer base, a good availability of business capital, a supportive regulatory framework and an excellent financial services infrastructure. According to Langley (2014), the UK has been chosen by financial services investors over the years as it has a business-friendly environment supporting innovation, highly talented workforce, competitive tax regime, global links and strong information and communications technology (ICT) infrastructure. BBA (2014) indicated that the UK has a huge potential for further innovation as it has a very well-developed banking industry, high rates of digital penetration among consumers and is hosting the world’s leading FinTech and digital companies.

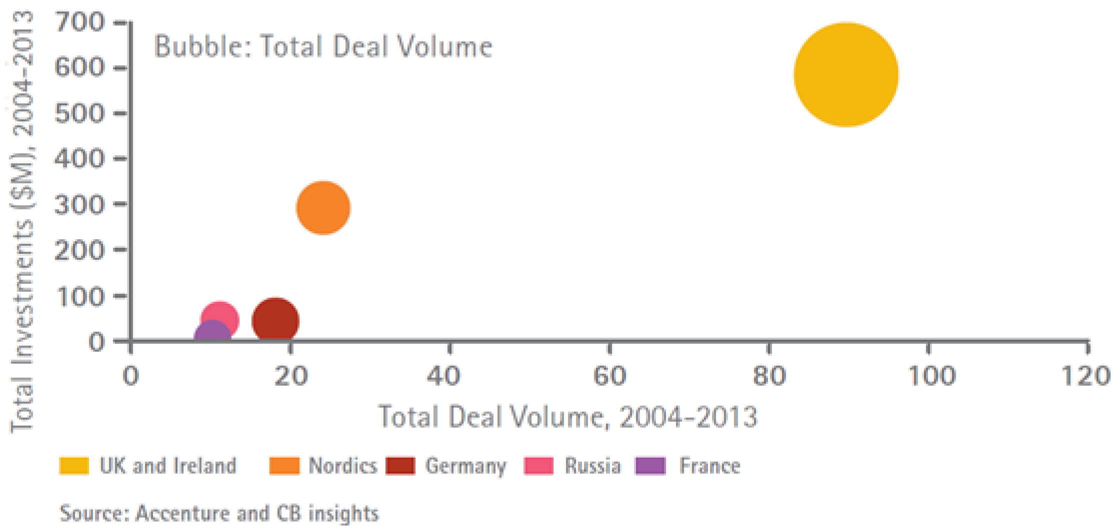
The politicians in the UK are aware of the fact that financial services industry has been disrupted by FinTech companies offering alternative methods to traditional finance tailored for differing needs of customers and businesses. Therefore, the development and growth of the FinTech sector is highly supported by the UK Government as the financial services sector is vitally important to UK economy. Thody (2014) indicated that as a reaction to rapid growth in FinTech industry, FCA has initiated the “Project Innovate” in order to support start-ups and established businesses to develop innovative solutions for the financial services sector in the UK. By building an Incubator and an Innovation Hub, Project Innovate aims to provide companies innovating new models and products with assistance and advice. Dunsby (2014) reported that a new trade body, Innovate Finance, has been created with 53 member companies to represent and promote the UK FinTech industry globally. Founding members of Innovate Finance include FinTech companies, big financial institutions and banks such as Barclays, HSBC, RBS, Santander, Lloyds. One of the main goals of the organisation is to become a single point of access for FinTech firms, financial organisations, customers, investors, talent, finance and international marketplaces (Shead, 2014).

Gelis (2014) stated that increasing number of firms entering the FinTech sector will largely contribute to the industry as competition within the sub-sectors of and across the whole FinTech sector will create more awareness and encourage further disruption. Moreover, by growing with and nurturing from a competitive ecosystem, FinTech companies are expected to become more powerful within UK financial services industry. The UK has successful FinTech companies including crowd funding companies such as Crowdcube Crowdshed and Trillion Fund; payment systems companies such as Monitise, Azimo and Currency Cloud; mobile technology companies developing mobile banking applications such as MoBank; P2P lending companies such as Zopa and Funding Circle (FC).

1.5.1.1. UK's FinTech Capital: London

UK Trade & Investment (2014) indicated that FinTech sector in the UK has been growing due to the total effect of digital connectivity, customer dissatisfaction with banks, and a lack of innovation and investment by incumbent providers. It's reported that UK FinTech sector generates £2bn revenue annually. The UK Government is fully committed to create an excellent business ecosystem for FinTech companies and to make London the world's FinTech capital. According to Accenture (2014a), London has become the FinTech capital of Europe as the biggest share of Europe's FinTech deals and financing have occurred in the UK, mainly in London. Hyde (2014) stated that London has become the global centre for FinTech and is unique among other cities as it serves as a financial and technological hub.

Figure 22.
Top Five European Regions for Fintech Investment Activity



Source: Accenture (2014a)

The location of London and the time zone London is in enable companies to access to international markets easily and provide flexibility for businesses to conduct their international operations smoothly.

UK Trade & Investment (2014) indicated that financial services make up almost the 10% of the GDP in the UK. There are 251 foreign banks and 588 foreign financial services organisations in London, making the city one of the largest financial centres in the world with a truly international client base (UK Trade & Investment, 2014). According to Barber (2014), the main reasons why London has a successful FinTech sector is that FinTech companies have an access to key resources including talent, customers, suppliers and competition thanks to the established financial services companies in London. Many banks in London have realised that having a FinTech cluster next to them provides great advantages for smoothing their operations (Accenture, 2014a).

London is the technology hub of Europe and actively supports start-ups and fast-growing firms. London is a home for TechCity which has attracted over 1,300 high tech companies to date and is the fastest growing technology hub in Europe positioned very close to London’s financial sector (UK Trade & Investment, 2014). Moreover, Hobson (2014) stated that FinTech industry in London has been benefitting from the presence of creative sectors to produce user-friendly, imaginative and sustainable technologies while leading players in marketing, design, media and advertising sectors in London help FinTech companies to promote and market their solutions.

London’s FinTech sector is getting increasingly stronger as the industry attracts the world’s brightest talents ranging from fresh graduates to senior executives working in financial services sector. According to Times Higher Education (2013), London is the only city having the highest number of institutions listed in the world's top 40 universities ranking, with its four universities. Moreover, Gill (2014) indicated that the growing transfer of knowledge and expertise from the top level financial executives to dynamic FinTech sector suggests that there is a growing disaffection with traditional banking in the UK.

Despite the growing FinTech sector in London, difficulty to access to venture capital (VC) and insufficient number of investors have been creating barriers for FinTech start-ups. Gelis (2014) indicated that this might be due to complex regulations and perception of investors that traditional finance organisations will always be dominant within the market. However, Gill (2014) stated that it's expected that money invested in UK FinTech sector will increase significantly in the future as many major investment companies are opening offices in London.

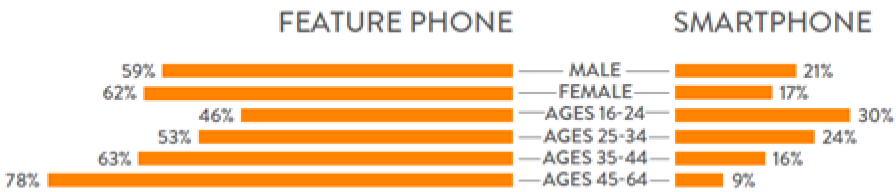
1.5.1.2. FinTech Accelerators in London

Currently there are 4 FinTech accelerators helping UK and foreign FinTech start-ups and companies to develop and grow more in London. These accelerators are "Accenture FinTech Innovation Lab", "Level 39", "Barclays Accelerator" and "Startupbootcamp FinTech". They mainly provide funding, office space, mentorship from senior level bank executives, VC and angel investment firms and technology entrepreneurs, networking sessions and workshops. Moreover, these accelerators are supported by the UK Government, main UK banks and financial organisations including Barclays, HSBC, MasterCard, RBS and Lloyds. The success of these FinTech accelerators launched in London suggests that the number of similar FinTech accelerators will continue to increase in the future as FinTech sector is an essential part of both financial and technology clusters in London.

1.5.2. Overview of the Turkish FinTech Sector

Turkish FinTech sector has been developing and shaped by its growing young population, internet usage and mobile and smartphone penetration across the country. Turkey is one of the countries having high percentages of young population and they are keen on using internet and mobile technologies. As of September 2012, there were 67.19m mobile subscribers in Turkey, with a penetration rate of 89,1% (McBDC, 2013).

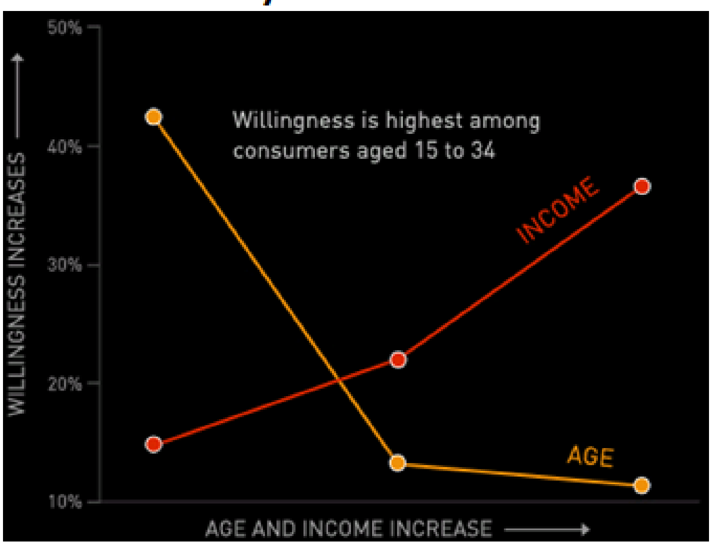
Figure 23.
Who Are the Smartphones Users?



Source: Nielsen (2013)

Turkey's young population is keen on using internet and mobile technologies for their financial needs. In Turkey, young population aged 15 to 34 and the affluent are more willing to use mobile payments (MasterCard, 2012).

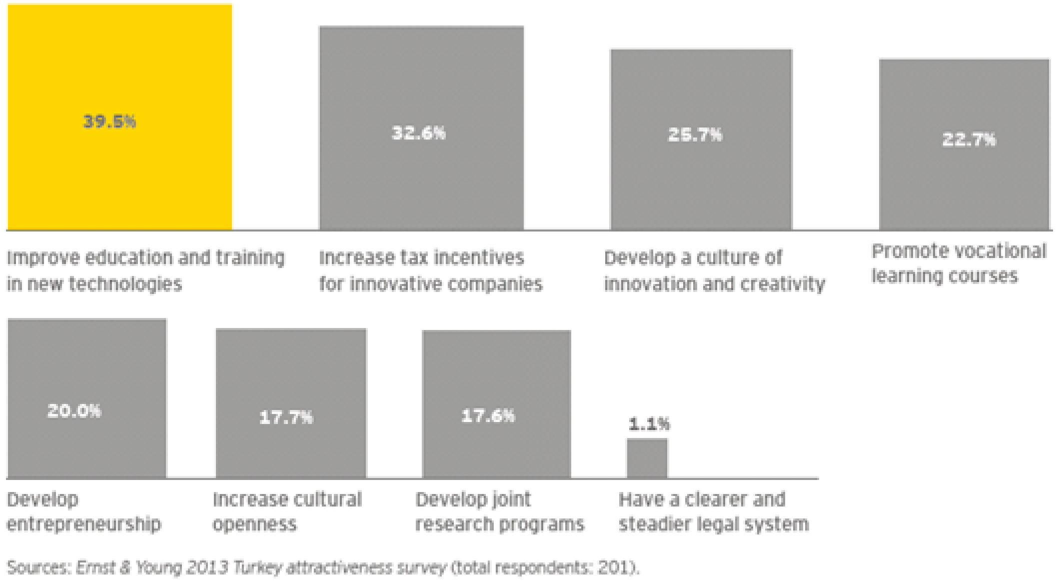
Figure 24.
Willingness to Make Mobile Payments



Source: MasterCard (2012)

Current developments in Turkey have been contributing to the growth of Turkish FinTech sector. Turkey has the potential to become a regional ICT hub with its growing economy, favourable investment climate, and high-quality business resources and infrastructure (ISPAT and Deloitte Turkey, 2014). Turkish Government aims to increase ICT sector spending to 8% of GDP with the Turkish National Technology Foresight Program, Vision 2023 (Ernst&Young, 2013).

Figure 25.
How Turkey Can Improve in Innovation?
What are the main areas of reform that will improve Turkey's innovation captivity?



Source: Ernst&Young (2013)

Turkey has been attracting start-ups with its strategic location between Asia and Europe. Cornish (2013) stated that start-up sector in İstanbul, which is called the Digital Bosporus, continued to grow in 2011 but experienced the challenges of growth and the first failures in 2012. However, these difficulties have helped the sector to change its attitude towards failure and encouraged the entrepreneurs to embrace failure instead of being scared of it. In addition, VC is growing and start-up sector in İstanbul has been attracting young people to achieve entrepreneurial success, which leads to the rise of software and gaming industries in a city best known for e-commerce. According to Pau (2014), with its strong internet infrastructure and a user base, Turkey has been offering many opportunities for innovative technology companies. As hundreds of young, well-educated and tech-literate talents going back to their home country, Turkey has been capable of meeting the growing demand for digital media, innovative online ecosystems and new business models.

These developments have been attracting some foreign players to enter or grow in Turkish market. As a result, Turkish FinTech companies have started to receive attention from foreign companies recently. In 2014, some Turkish companies offering payment and mobile solutions to the market were acquired by foreign companies. For example, UK-based Monitise acquired Turkish mobile payment services specialist, Pozitron, for $100m and started to manage its Middle East and Africa operations from İstanbul (Lunden, 2014). Moreover, MasterCard acquired the leading independent Turkish payment solutions provider Provus in 2014 in order to increase its processing presence in Europe (MasterCard, 2014). Finally, German payment services provider Wirecard acquired Turkish mobile payment provider MikroÖdeme (3pay) for $37m in 2014 in order to expand its operations to the Middle Eastern and North African markets (Anon., 2014b).

Figure 26.
Strategic Location of İstanbul

Sources: İstanbul Development Agency

Source: Borsa İstanbul (2014)

There are other successful FinTech companies in Turkey including crowd funding companies such as Biayda.com, Fongogo; payment systems companies such as iyzico, Öde.Al, Cardtek Group, PaybyMe; mobile technology companies developing mobile banking applications such as Mobinex, Valensas and information systems companies such as Intertech and Innova.

1.5.2.1. Developments Affecting the Turkish FinTech Sector

Turkish Government launched İstanbul Financial Center Initiative (IFC-I) with the objective of making İstanbul first a regional after a global financial centre by 2023. In order to achieve this goal, Turkish version of Canary Wharf has been built on the Asian side of the Bosporus currently (Anon., 2013b). Its profitable banking sector and some effects of Turkey's European Union (EU) accession process are considered as the advantages of İstanbul to become a finance hub (Sarigul, 2012). If accession negotiations starts to accelerate, Turkey and the EU would benefit from each other as investors from the EU continue to provide technology and innovation to Turkey while Turkey's young population can help the EU to expand demand-driven growth (Ernst&Young, 2013).

Turkish Government has been taking relevant steps to transform İstanbul into an international financial centre hosting banks and financial institutions from all parts of the world. After the government enacted a law to bring Turkish financial markets closer to EU and the United States (US) markets and to attract international trading companies, the İstanbul Stock Exchange, Gold Exchange and Turkish Derivatives Exchange were merged under Borsa İstanbul in 2013. In order to build a highly sophisticated technological infrastructure, Borsa İstanbul created a partnership with Nasdaq OMX to access its wide range of trading technologies (Irrera, 2014). Moreover, Turkey's first thematic Science and Technology Park (STP), called Finance Technopark, will be created in İstanbul with the partnership of Borsa İstanbul and Boğaziçi University (The Ministry of Science, Industry and Technology, 2014). STP will conduct research and development (R&D) activities and create value-added financial technologies for domestic and international markets. At the same time, Turkish Government has been working on moving the BRSA and CMB from Ankara to İstanbul. On the other hand, Turkey aims to become the world's first cashless society and the country where all transactions are made with payment systems by 2023. In order to support this goal, industry players are helping the government to promote the usage of alternative payment systems and to educate Turkish society about features and benefits of these systems over cash payments.

1.5.3. Examples of Partnerships between the Banking Sector and the FinTech Sector from the UK and Turkey

Skinner (2014) indicated that banks, which have understood disruptive innovations will change their businesses, are collaborating with and investing in FinTech industry and acquiring new FinTech businesses in order to adapt and refresh their core infrastructures. On the other hand, banks which do not react to changes in the ecosystem driven by technological developments and not partner with FinTech start-ups will be experiencing the failure of their legacy systems and losing their customers in this very competitive environment. Rogers (2014) suggested that as big banks cannot take the same level of risks and move quick as start-ups can, they should contribute to start-ups' developments by stimulating an innovative ecosystem.

In 2014, UK Payments Council launched a new P2P payments service, PayM, in order to enable customers to make their payments securely to other people via using their mobile numbers only. The PayM service can be used through mobile banking or payment applications as it is integrated into them (Payments Council, 2014). Stone (2013) reported that a new mobile payment system, Zapp, has been developed in order for consumers to pay with their smartphone in shops and restaurants, which turns their bank accounts into an 'electronic wallet'. Customers will be able to use Zapp through their mobile banking applications as the system will be integrated into existing mobile applications of the banks. Major UK banks including HSBC, Santander, Barclays and Lloyds Bank signed agreements to make both PayM and Zapp available in their mobile banking applications. Big banks in the UK have recognised the need for disruptive technology in order to gain strategic advantage over their competitors and started to invest in the UK's growing FinTech sector. Santander recently announced that it established a $100m VC fund for investing in FinTech companies with the aim of keeping up with rapidly evolving financial services market (Bounds, 2014). Santander partnered with P2P lending company, FC, for referring business customers that it rejected to FC while acquiring knowhow and experience from FC to serve its customers better with the latest technology. On the other hand, Finnegan (2014) reported that HSBC has decided to invest up to $200m in FinTech start-ups in order to advance its own technology systems.

FinTech company Monitise MEA (2014) stated that their secure mobile banking solution for İşbank in Turkey was developed in order to improve the bank's mobile services and increase customer satisfaction by enhancing their accessibility. In addition, Akbank created a partnership with FinTech company Valensas for its mobile banking application. Monitise (2014) announced its partnership with Yapı Kredi Bank in Turkey for introducing a new branchless banking service called "Nuvo". Some major Turkish banks including Ziraat Bank, VakıfBank and DenizBank are working with the technology company Kobil, for IT security, innovative data and digital identity security solutions for their internet and online banking channels. Kobil also partners with the leading FinTech company Intertech, a subsidiary of Sberbank, in Turkey to ensure the security of online and mobile banking accounts (Kobil, 2013).

1.6. Summary

This part of the dissertation has reviewed the banking industries in the UK and Turkey, technology developments in the banking industries in the UK and Turkey, FinTech sectors in the UK and Turkey and provided examples of partnerships between the banking sector and FinTech sector from the UK and Turkey. Overall, it is concluded that the banking sectors in the UK and Turkey have been tech savvy and very competitive in developing new technologies in-house. However, recently there is a growing interest in these banking sectors towards the emerging FinTech sector which has been challenging traditional banking.

2. Research Methodology

2.1. Introduction

The FinTech sector has become one of the fastest growing entrepreneurial areas for start-ups looking at "disrupting" traditional banking. Over the past few years, the FinTech sector has been growing significantly in the UK and London has become one of the world's leading centres providing a great infrastructure for FinTech start-ups. Many traditional banks in the UK have realised that this development is an opportunity for them to integrate innovative solutions quickly into their operations either for better efficiency or customer service.

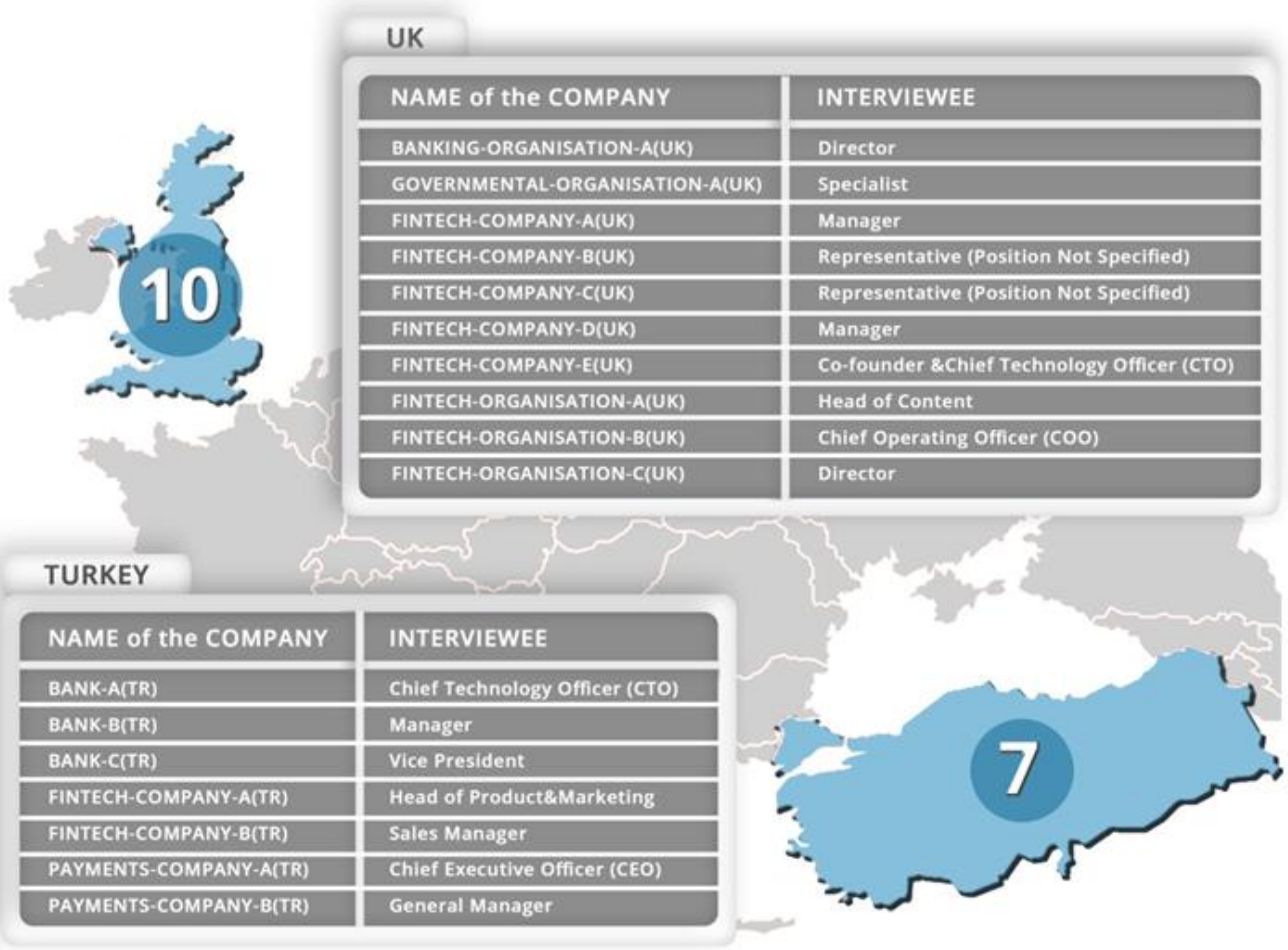
The main objective of this study is to investigate how the FinTech sector disrupts and improves the banking sector by making it more sustainable and efficient. This study believes that as London has successfully embraced and developed a FinTech ecosystem; other financial cities around the world, like İstanbul in Turkey as suggested in this study, should learn from London and take it as a model to be replicated for fostering their own FinTech ecosystems which will significantly contribute to the development of their banking sectors.

This part focuses on understanding the impact of technology adoption and engaging with the FinTech sector to the banking sectors in the UK and Turkey. By investigating the factors making London a FinTech hub and the technology perceptions in the Turkish banking sector, the study tries to find out what Turkey needs to do in order to develop its FinTech sector and how the Turkish banking sector can embrace innovative technologies and engage with the FinTech sector more for improving their operations and the banking sector as a whole. At the end, the study tries to provide insights about how the FinTech capital of the UK, London, can accelerate its FinTech sector to become the global FinTech capital. Moreover, the study tries to provide insights about how the major finance and technology centre of Turkey, İstanbul, can be inspired by what London does and develop its own FinTech sector and attract Turkish banks to integrate with it for making the banking sector, and the financial services sector as a whole, better, more efficient and more sustainable.

2.2. Research Method

In this study, qualitative research methods were used in order to identify the dynamics of the FinTech and banking sectors and to gain deeper and better industry insights about the development of the FinTech sector and banking technologies. As a research method, the author; Melike Belli, conducted short and long interviews with 17 organisations from the UK and Turkey. In order to understand and to reflect the perceptions of different stakeholders in the financial sectors of the two countries towards the FinTech sector and banking technologies, the interviewees were carefully selected from different influential organisations.

Figure 27.
Name of the Companies and Positions of Interviewees



UK

NAME of the COMPANY	INTERVIEWEE
BANKING-ORGANISATION-A(UK)	Director
GOVERNMENTAL-ORGANISATION-A(UK)	Specialist
FINTECH-COMPANY-A(UK)	Manager
FINTECH-COMPANY-B(UK)	Representative (Position Not Specified)
FINTECH-COMPANY-C(UK)	Representative (Position Not Specified)
FINTECH-COMPANY-D(UK)	Manager
FINTECH-COMPANY-E(UK)	Co-founder &Chief Technology Officer (CTO)
FINTECH-ORGANISATION-A(UK)	Head of Content
FINTECH-ORGANISATION-B(UK)	Chief Operating Officer (COO)
FINTECH-ORGANISATION-C(UK)	Director

TURKEY

NAME of the COMPANY	INTERVIEWEE
BANK-A(TR)	Chief Technology Officer (CTO)
BANK-B(TR)	Manager
BANK-C(TR)	Vice President
FINTECH-COMPANY-A(TR)	Head of Product&Marketing
FINTECH-COMPANY-B(TR)	Sales Manager
PAYMENTS-COMPANY-A(TR)	Chief Executive Officer (CEO)
PAYMENTS-COMPANY-B(TR)	General Manager

2.3. Data Collection

In total, 34 organisations (15 from the UK, 19 from Turkey), which are the stakeholders of financial services sector, were invited to participate in the study. 20 responses were received from the organisations, making the response rate approximately 59%. 1 organisation clearly stated that it wasn't interested in participating in the study. 1 organisation stated that it couldn't participate in the study as their organisation lacks a person with sufficient expertise to answer the interview questions. 1 organisation showed a little interest in participating in the study at first; but it didn't reply the further e-mails. With the positive responses coming from the remaining organisations, 17 interviews were arranged to be conducted.

The possible reasons why the other remaining 17 organisations didn't reply to the invitation either positively or negatively were that they simply didn't have any interest to take part; they had never seen or received the invitation as it might have escaped their notice or due to technical problems; they had busy schedules or they were unwilling to be interviewed in a written way or over the phone.

Interviewees with whom long interviews were conducted were invited to participate in the study by e-mail. On the other hand, 2 interviewees with whom short interviews were conducted were asked to participate in the study during the conference they attended as guest speakers. Moreover, the other 2 interviewees with whom short interviews were conducted were asked to participate in the study during a visit to an organisation with which one of the long interviews was conducted.

Before the interviews, some participants requested to have the questionnaires in order to prepare for the interview and arrange their time accordingly. The participants were provided with the questionnaires before the interview.

In total, 10 face-to-face interviews were conducted with the organisations from the UK. 4 of these interviews were short interviews while 6 of them were long interviews, all were in English. 6 interviews were conducted at the organisations' offices. 2 interviews were conducted at different coffee shops. 2 interviews were conducted during a conference. During the 2 interviews that were conducted during a conference, interview notes were taken on a paper. During all the remaining interviews, the interviews were recorded after taking the consent of each participant.

In total, 7 long interviews were conducted with the organisations from Turkey. 2 of these interviews were in a written format, with 1 interview was written in Turkish. Among the remaining 5 interviews; 3 interviews were conducted over the phone, 1 interview was conducted through teleconferencing and 1 interview was conducted through videoconferencing, all were in English except that 1 interview conducted over the phone was in Turkish. The organisation with whom the interview was conducted through videoconferencing, answered the half of the questions in a written way due to time constraints. During all the interviews conducted over the telephone, through teleconferencing and videoconferencing; the interviews were recorded after taking the consent of each participant.

During the interviews, some participants answered to all questions, some participants did not answer some questions due to their insufficient knowledge about the topic or confidentially reasons and some participants could not finish answering all the questions due to their busy schedule.

The ideas collected from each organisation were revised and organised in a meaningful way and sent back to each participant, with whom the long interviews have been conducted, for receiving feedback and final approval from them about the answers they gave during the interviews. This ensured the full accuracy of the information received and eliminated the little misunderstandings as the participants reviewed the information they have provided previously and made some little corrections. However, the day before the submission date, surprisingly **BANK-B(TR)** expressed some unwillingness towards taking part in the research by claiming that the information provided by them during the interview is presented as too general by the author and not mentioning about their unique features. Despite the author clearly stated that **BANK-B(TR)** will remain anonymous during the interview, the unexpected attitude of **BANK-B(TR)** has led the author not to include the information provided by **BANK-B(TR)** in this study as clearly revealing **BANK-B(TR)**'s identity would create an inconsistency which will negatively affect the aim of this research. Therefore, the information provided by **BANK-B(TR)** was not presented in this research.

2.4. Questionnaire Design

The questionnaires were designed one by one according to the industry the organisation in, the main characteristics of the organisation, vision of the organisation and the activities it has in technology area. While each questionnaire includes unique questions for each organisation, there were some common questions which were asked to multiple organisations.

In total, 17 semi-structured interviews were conducted with the organisations operating in different sectors from the UK and Turkey. 4 of these interviews were short interviews with number of questions ranging from 3 to 7. 13 of these interviews were long interviews with number of questions ranging from 10 to 18. The number and content of the questions was designed according to the companies' history and activities.

3. Major Findings and Analysis

The following part presents the findings from the 17 interviews conducted with the organisations from the UK and Turkey about the FinTech and banking sectors and the banking technologies in the UK and Turkey.

3.1. Interview Findings: United Kingdom Organisations

GOVERNMENTAL-ORGANISATION-A(UK) indicated that one of the reasons why FinTech has emerged as a big opportunity is decreasing consumer trust to banks after the GFC in 2008 which increased the number of consumers looking for alternatives for banks. **FINTECH-ORGANISATION-A(UK)** said that UK's FinTech sector catalysed a lot by and developed after the GFC in 2008.

"Before 2008, banks were saying "Well, we do it fine, why do we need this?" when asked. However, trust in banks was lost during the GFC and now banks are rebuilding trust by demonstrating that they are innovating. UK Banks are interested in meeting innovative FinTech companies because they realised that they need innovation."

FINTECH-ORGANISATION-A(UK)

GOVERNMENTAL-ORGANISATION-A(UK) explained that the UK has three main communities which are key to the development of financial services in general and the FinTech specifically. These include financial services cluster itself having huge amount of expertise in financial products; tech community, including TechCity, which have created a lot of technology talent and expertise; and the supportive regulatory authorities and the Treasury. These three communities are close to each other and can easily interact with and talk to each other for supporting the development of new business models.

GOVERNMENTAL-ORGANISATION-A(UK) added that the UK Government manages to develop an infrastructure for innovation including universities, which are creating programmes to develop skills not just in FinTech but in technology, accelerators and the VCs. This creates a great magnet for talent and a network effect as more people are coming to the UK.

GOVERNMENTAL-ORGANISATION-A(UK) explained that a FinTech start-up needs access to buyers; if it is B2B, it will be banks and if it is B2C, it will be consumers. **GOVERNMENTAL-ORGANISATION-A(UK)** said that relatively speaking UK is large market and very open for innovation. Moreover, the UK spends more per capita over the internet and the adoption of mobile devices is quicker in the UK than anywhere else. **GOVERNMENTAL-ORGANISATION-A(UK)** stated that they've got banks in the UK and they've got consumers who are fed up with the banks and looking for something new. Moreover, they've got enough capital and the VC is growing in the UK. Therefore, **GOVERNMENTAL-ORGANISATION-A(UK)** summarised that the UK has an access to buyers, funding and talent.

GOVERNMENTAL-ORGANISATION-A(UK) indicated that the UK attracts FinTech companies to come to the UK because the regulatory risks, which are one of the main risks when developing a FinTech company, are being reduced and the investors like risk reduced. In addition, **GOVERNMENTAL-ORGANISATION-A(UK)** said that the cost of setting up a business is very low these days, the technology is cheap and there are plenty of shared places in the UK.

GOVERNMENTAL-ORGANISATION-A(UK) stated that perhaps the visa, immigration laws, might potentially be a problem for some FinTech companies to come to the UK but it'll be a small and specifically for certain types of entrepreneurs.

FINTECH-COMPANY-A(UK) thinks that the large amount of the UK Government's plan for the economy relies on technology, innovation and FinTech. It stated that the UK Government needs to look at FinTech companies and see the value they will bring to the economy going forward because there is some doubt about they will. On the other hand, **GOVERNMENTAL-ORGANISATION-A(UK)** indicated that the UK Government aims to make the UK be synonymous with FinTech, in very much same way Silicon Valley is synonymous with digital, in order to maintain the UK's position as a main global financial services centre. **GOVERNMENTAL-ORGANISATION-A(UK)** explained that as there are a lot of activities in FinTech across the country, it can improve financial services sector while increasing competition. Therefore, FinTech sector improves the service to clients including customers and businesses and makes the financial services industry more efficient, more sustainable and better.

FINTECH-ORGANISATION-C(UK) indicated that London has been attracting many FinTech companies. Interviewees listed the major factors making London a great city for FinTech companies. Firstly, **FINTECH-ORGANISATION-B(UK)** stated that London is one of the hot spots for start-ups as it's an amazing hub of ideas and right people at the right time. It indicated that there are VCs and angel investors making entrepreneurs come to London. **FINTECH-COMPANY-B(UK)** said that start-up community in London is quite active and VC firms are investing heavily in Europe with London as the hub. **FINTECH-ORGANISATION-A(UK)** stated that technology companies are given a chance of success in London as it has strong financial services and creative industries and is a city known across the world. Secondly, **FINTECH-ORGANISATION-B(UK)** indicated that London is the capital of financial services worldwide. **FINTECH-COMPANY-C(UK)** said that London is one of the financial capitals of the world with a good political environment. **FINTECH-**

COMPANY-B(UK) explained that FinTech is dependent on having links with financial industry; and FinTech companies in London have the City just next door and have Europe next door to it. **FINTECH-ORGANISATION-C(UK)** and **FINTECH-ORGANISATION-B(UK)** indicated that there are a lot of banks, which are easily accessible, located in London. They added that a lot of entrepreneurs are ex-bankers or having a background and expertise in financial sector, which means that they know the industry they are disrupting very well. **FINTECH-COMPANY-A(UK)** stated that in order to break into the market they are trying to break into, FinTech companies need a certain type of experience, skill set and entrepreneurial skills. It added that having a good mixture of people possessing fantastic experience in banking, retail and payments sectors and having former entrepreneurs, who bring different insights, in the company, helps start-ups to be taken seriously and get the relationships with the people they need to sell to. Thirdly, **FINTECH-ORGANISATION-C(UK)** stated that having a fun community around FinTech in different co-working spaces and different accelerator programs that promote the sector by bringing a lot of mentors, investors, policy makers and government decision makers together is one of the advantages London has over other cities. **FINTECH-COMPANY-B(UK)** indicated that by going to couple of events, FinTech start-ups can easily meet with other people and start to build their network. **FINTECH-COMPANY-B(UK)** also added that as the UK is an English speaking country, companies from other countries don't have difficulties to communicate with FinTech community in London.

"For example, as being one of the UK cities providing a supportive ecosystem for FinTech companies, London is unique when it's compared to New York (NY) as financial services cluster is in NY, the regulator is in Washington and the tech community is mostly in the west coast."

GOVERNMENTAL-ORGANISATION-A(UK)

Fourthly, **FINTECH-ORGANISATION-A(UK)** stated that there is a wide talent pool all around the UK. Finally, **FINTECH-ORGANISATION-C(UK)** emphasised the importance of London's geographic position and reminded that people can fly all over Europe very easily from London. **FINTECH-COMPANY-B(UK)** added that London also has an advantage in terms of its location as being between two big financial capitals, NY and Tokyo. On the other hand, **FINTECH-COMPANY-B(UK)** listed three facts about London which creates FinTech companies difficulties. Firstly, London is an expensive city which creates an entry barrier for FinTech start-ups from other countries. Secondly, it's quite hard for start-ups coming from other countries to set up a bank account in the UK, which needs to be addressed. Finally, for FinTech companies, availability of the VC is limited in London when it's compared to Silicon Valley.

FINTECH-ORGANISATION-B(UK) stated that the UK Government's role in developing FinTech sector in London is growing. **FINTECH-ORGANISATION-A(UK)** stated that it works closely with the UK Government and policy makers for the development of FinTech sector in London but haven't received financial support from them. Moreover, **FINTECH-ORGANISATION-B(UK)** and **FINTECH-ORGANISATION-C(UK)** stated that the UK Government is very supportive and helping to them in the development of FinTech start-ups.

"Another great thing about London is that the government is quite open. It's on the UK Government's best interest; they want to put London in the map in FinTech globally, and they are trying to figure out how to restructure the policies so that FinTech companies can flourish here. They are asking the right questions, heading to the right direction and more than any other location they are listening to the voice of the FinTech community to understand what they need to do to be more supportive."

FINTECH-ORGANISATION-C(UK)

FINTECH-COMPANY-B(UK), **FINTECH-COMPANY-C(UK)** and **FINTECH-ORGANISATION-C(UK)** agreed that regulation is a big challenge for some FinTech companies and a huge barrier for FinTech start-ups in London. However, **FINTECH-COMPANY-B(UK)** indicated that the regulatory authorities in the UK are supportive and very open to work with the start-ups to solve this problem. **FINTECH-COMPANY-C(UK)** explained that UK regulatory authorities are going to push forward innovation with the hope that it will allow companies to gain authorisation quicker. However, **FINTECH-COMPANY-C(UK)** doesn't think that they're doing as much as they can and they recognise that to push forward innovation in the UK. **GOVERNMENTAL-ORGANISATION-A(UK)** stated that clearly FinTech community think that the regulatory framework is not sufficient in the UK. However, **GOVERNMENTAL-ORGANISATION-A(UK)** explained that the regulator doesn't know what they need to do exactly at the moment, so the consultation period with industry is on-going to get information. **GOVERNMENTAL-ORGANISATION-A(UK)** added that the regulators in the UK are very supportive and keen to engage and understand what they need to do in order to support the developments in FinTech. **FINTECH-ORGANISATION-C(UK)** agreed that the regulatory authorities are trying to find out ways to help FinTech companies to develop and stated that they do this to make London an attractive place for FinTech, which will help start-ups to receive more interest from the investors worldwide. **FINTECH-ORGANISATION-A(UK)** indicated that the support of the regulatory authorities in the UK for FinTech sector is very important and valuable.

"I think most people in FinTech sector are pleased with the financial regulator in the UK because it's trying to regulate the sub-sectors of FinTech for protecting consumers. Moreover, they are willing to understand and discover what emerging FinTech areas are all about and to help these new companies to exist instead of shutting them down."

FINTECH-ORGANISATION-A(UK)

FINTECH-ORGANISATION-A(UK) welcomes competition from other FinTech organisations and is happy that they are in the market as competition will help FinTech sector to receive more attention and to grow faster. In addition to competing with similar organisations, it also keeps in touch with them. **FINTECH-ORGANISATION-B(UK)** stated that having strong players competing with each other helps the ecosystem and the promotion of London as a FinTech brand.

FINTECH-ORGANISATION-C(UK) claimed that there is a collaboration culture among FinTech start-ups in London while **FINTECH-ORGANISATION-A(UK)** stated that FinTech companies within their community help each other for their development and growth.

"For example, we can have similar payment businesses within our community but they will never compete for the same clients because that wouldn't be conducive for environment collaboration. On the other hand, these companies can introduce each other to potential clients without expecting any incentive; it's a favour and may be a favour back in the future which is incredible."

FINTECH-ORGANISATION-A(UK)

FINTECH-ORGANISATION-C(UK) agreed that FinTech start-ups are helping each other while growth or high growth FinTech companies also support the development of FinTech start-ups in London. **FINTECH-COMPANY-A(UK)** works with some technology and FinTech companies to see how these companies can improve their solutions by integrating products of these companies into their solutions. On the other hand, **FINTECH-ORGANISATION-B(UK)** addressed that there is a lot of collaboration between FinTech companies in London who reach a certain level with their target segments.

"FinTech start-ups receive mentorship from some FinTech entrepreneurs who have been here, done that, and want to give back and help new generations."

FINTECH-ORGANISATION-C(UK)

FINTECH-COMPANY-A(UK) is owned by another FinTech company which gets funds from banks. **FINTECH-COMPANY-A(UK)** keeps its eyes on and follows start-ups very closely and is interested to see innovation taking place. However, **FINTECH-COMPANY-A(UK)** stated that because of where they are in their development cycle now, it's still too early to tell whether they're going to look into fully provide seed capital to other start-ups or not.

FINTECH-COMPANY-C(UK) said that also FinTech organisations help the start-ups' development. **FINTECH-ORGANISATION-A(UK)** stated that their goal is to build a real and authentic FinTech community. **FINTECH-ORGANISATION-A(UK)** provides mentorship and organises meetings with VCs and angel investors for FinTech companies. Moreover, **FINTECH-ORGANISATION-A(UK)** partners with domestic and foreign organisations to contribute to the development and growth of FinTech companies both in and outside the UK. **FINTECH-ORGANISATION-A(UK)** stated that they also have and are open to create partnerships with universities in different countries as universities have huge talent pools. This allows them to better understand that community and their needs and see how they can help them while also finding out how the community can help **FINTECH-ORGANISATION-A(UK)**. On the other hand, **FINTECH-ORGANISATION-B(UK)** emphasised that they have a global approach and do things for the development of FinTech start-ups in collaboration with a wide range community including banks, mentors, VCs and angels.

FINTECH-COMPANY-C(UK) said that sometimes start-ups change their directions completely or make their business model better with help of the valuable advices they receive. On the other hand, **FINTECH-COMPANY-A(UK)** explained that their company is very lean and agile, which allows them to hear requirements from retailers, banks, billers or consumers and take the product in that direction very quickly.

"FinTech companies should do something useful. If they are solving a customer problem they can get somewhere, they shouldn't do something useless. They also should avoid building a product or a service without asking the community or the individuals they are building it for in order to ensure that their solution is a problem solver and needed. Getting and listening to many high quality advices is vitally important. FinTech companies should not work in silence or behind closed doors. If the financial sector wants or needs their solutions in another form, they should change the way they sell their solutions and develop a new business model."

FINTECH-ORGANISATION-A(UK)

FINTECH-COMPANY-A(UK) explained that if start-ups are getting the right level of insights, they are creating a product that provides benefits to the right people at the right level. **FINTECH-COMPANY-A(UK)** said that this is quite difficult to do as FinTech companies are young and energetic but they don't always have a lot of experience. **FINTECH-COMPANY-A(UK)** thinks that that's critical to create something that is tangible and can be used to going forward. **FINTECH-COMPANY-A(UK)** added that they took a long time to understand what customers wanted, took that and built it into their solution and sell the benefits to the banks after developing the product.

FINTECH-COMPANY-A(UK) said that there is a whole generation of consumers having smartphones, called digital natives, and **FINTECH-**

COMPANY-A(UK) wants UK banks to be able to engage with those customers, just as they engage with elder clients. According to **FINTECH-COMPANY-A(UK)**, currently banks are, in terms of payment perspective, seen a little bit behind the time. **FINTECH-ORGANISATION-B(UK)** indicated that UK banks are open to innovation which is a good thing for FinTech sector in London. **BANKING-ORGANISATION-A(UK**) stated that the UK is seen as one of the world leaders in banking technology area.

"We don't think ourselves as world leaders but we very much are in our payment systems such as paying with text message or cheque imaging technology which is under way. Increasingly Britain has been considered as world leaders in banking technology. The British public wouldn't necessarily aware of that but I think we do have a real opportunity to develop not just the banking service, that's very advantageous, but actually jobs for the industry as jobs could be created by Britain becoming world leaders in FinTech."

BANKING-ORGANISATION-A(UK)

BANKING-ORGANISATION-A(UK) stated that innovative banking technologies are a tremendous opportunity for banks and banks have been genuinely very surprised by the fast pace of adoption of mobile banking, particularly in the last 18 months. **FINTECH-COMPANY-A(UK)** said that consumers in the UK already have an existing mobile banking relationship; mobile banking apps are being downloaded 15,000 times a day in the UK and smart phone adoption is at its late majority.

"We think it's a revolution in the banking sector. Why it's happening, because it's convenient, customers can check their accounts, transfer money at anytime from anywhere which save customers time."

BANKING-ORGANISATION-A(UK)

BANKING-ORGANISATION-A(UK) explained that adoption of new banking technologies is a customer-led thing however they aren't for every customer. Banks consider customers who may not be using these technologies such as the elderly or people living in rural areas where high speed broadband is not always as well-developed. **BANKING-ORGANISATION-A(UK)** indicated that by adopting these technologies banks can save money in the long term, not in the short term as they spend a lot of money on developing the infrastructure.

BANKING-ORGANISATION-A(UK) stated that they don't consider new technologies as threats for banks which lead to branch closures; they see them as options given to customers to spend and manage their money better.

BANKING-ORGANISATION-A(UK) stated that UK banks are making referrals to SMEs when they can't provide credit. They will suggest alternative funding sources, such as equity funding or crowd funding. **BANKING-ORGANISATION-A(UK)** added that UK banking industry is very supportive of other types of finance. **FINTECH-COMPANY-E(UK)** indicated that they are the competitor of banks as they finance what banks cannot finance. **FINTECH-COMPANY-E(UK)** said that more and more mature companies that would usually prefer traditional banks for getting some financing are looking at getting funds from their platform. On the other hand, **FINTECH-COMPANY-D(UK)** stated that they're not competing with banks as they aren't doing the same job and don't pretend that they can become a bank. They finance the projects which traditional banks will never finance.

FINTECH-COMPANY-B(UK) indicated that UK banks care a lot about what other banks do and explained that it's hard to be the first one to innovate, but if the innovation becomes successful, all other banks will follow immediately. **BANKING-ORGANISATION-A(UK)** said that if one player in the market launches an innovative technology, competition leads other banks to introduce the same service for their customers.

"Banks want to have the best technology they can possibly have. Banks know that they'll lose customers if they don't have the best technology since customers can easily to switch banks in the UK."

BANKING-ORGANISATION-A(UK)

BANKING-ORGANISATION-A(UK) predicted that big technology companies such as Google or Amazon will challenge banks in the future by operating banking services. On the other hand, **FINTECH-ORGANISATION-C(UK)** indicated that FinTech industry is challenging the banking industry significantly.

"The financial industry is so large for start-ups to have a viable significant business. However, they don't need to build an entire new thing. They just need to take a very tiny thing banks are doing and can make an entire business out of that small slice. Therefore, the banks might not see right away that FinTech companies are slowly taking slices of banks' business with their innovative solutions. However, FinTech start-ups are challenging and taking small slices of the market away from the banks."

FINTECH-ORGANISATION-C(UK)

GOVERNMENTAL-ORGANISATION-A(UK) explained that FinTech companies in B2B area are facing an industry which is very defensive and difficult to deal with. However, **GOVERNMENTAL-ORGANISATION-A(UK)** added that how the financial industry is going to integrate with FinTech which is going to change it, regardless whether they want it or not, it's just a question of time. According to **GOVERNMENTAL-ORGANISATION-A(UK)**, it's one of those things that will happen, same as the music or publishing industry went through and it's now financial industry's turn.

FINTECH-ORGANISATION-B(UK) and **FINTECH-ORGANISATION-C(UK)** stated that some financial services organisations showed strong interest for engaging with FinTech start-ups.

"The smart players in financial services industry know that in addition to develop technologies internally; the way to stay ahead is to stay engaged with the start-up scene either through venture plans, accelerator programmes or any plan to help growing start-ups and to be in the right position to reflect that. There is definitely a demand coming from UK banks to engage with FinTech companies closely."

FINTECH-ORGANISATION-C(UK)

FINTECH-ORGANISATION-C(UK) stated that when a bank does something in relation to FinTech sector, the other banks will want to do the same. **FINTECH-ORGANISATION-A(UK)** explained that banks want the best techies in the world trying to compete with each other. **FINTECH-COMPANY-C(UK)** said that by engaging with FinTech companies, banks can have inside information about what innovation is coming to the market.

"They want to be there when the innovation comes to the market and be the first customers having it with a good price. This helps banks to be more innovative, efficient and effective as an organisation."

FINTECH-COMPANY-C(UK)

BANKING-ORGANISATION-A(UK) indicated that there is always a dilemma for a bank whether to outsource or develop in-house technologies and added that major British banks have very competitive in-house development teams. **FINTECH-ORGANISATION-C(UK)** stated that the top management of some banks are very enthusiastic about and genuinely willing to help FinTech companies, which is significantly contributing to development of FinTech companies. **FINTECH-ORGANISATION-B(UK)** agreed that banks know that they need to do something related to the emerging FinTech sector and really want to get involve in whole innovation in start-ups. In fact, some banks' top management give a fundamental push to have a change within the bank in terms of innovation. However, **FINTECH-ORGANISATION-B(UK)** indicated that few banks are still trying to understand what's going on in the industry and can't take decisions yet. When FinTech start-ups prove banks that they can solve something, it becomes easy to take their attention. According to **GOVERNMENTAL-ORGANISATION-A(UK)** banks are starting to develop processes and ideas about how they want to collaborate with FinTech sector but they are not saying anything. **FINTECH-COMPANY-A(UK)** has partnership with some UK banks and stated that it's great that some of the larger players are looking to invest in start-ups and leverage that kind of exciting and energetic feeling they have about them.

FINTECH-ORGANISATION-A(UK) stated that UK banks seem very interested in making their own internal systems and processes better. **FINTECH-ORGANISATION-B(UK)** explained that by cooperating with FinTech sector, banks expect to improve their Know Your Customer compliance, B2C applications, branch operations while developing themselves in B2B, compliance, payments and security areas. On the other hand, **FINTECH-ORGANISATION-A(UK)** indicated that cyber security, which takes different forms from authentication to protecting data, is a hugely popular area in which UK banks want to work with FinTech companies.

"Some UK banks are interested in engaging with the start-up community not to enhance their public relations (PR) or corporate social responsibility activities but to benefit from innovative technologies which are core to their business operations. Banks want to be the first customers of FinTech

companies and acquire innovative technologies before other banks. Moreover, some banks consider further strategic investment opportunities including the acquisition of successful FinTech companies."

FINTECH-ORGANISATION-C(UK)

FINTECH-ORGANISATION-B(UK) said that a lot of things can change within the bank with the mentorship provided to FinTech start-ups by the bank's employees. **FINTECH-ORGANISATION-C(UK)** explained that partnering with or supporting FinTech sector can have cultural impacts on banks and help them to transform into an innovative culture. On the other hand, **FINTECH-ORGANISATION-B(UK)** indicated that banks can improve the products and services of FinTech start-ups by providing feedback about solutions and whether customers need them or not. **FINTECH-COMPANY-A(UK)** said that by working with banks, they earn the trust of consumers to use their innovative solution and gain scalability, which is very crucial as payment solutions are all about scale. **FINTECH-ORGANISATION-C(UK)** stated that having banks' support helps the start-ups to develop strong value propositions as they can learn how their businesses works in a bank and what's the behaviour of the customers. Also, it helps them to actually build business relationships with banks as banks might decide to be their customer, partner or investor in the future. On the other hand, **FINTECH-ORGANISATION-A(UK)** indicated that interaction of banks and FinTech start-ups is very valuable even though they don't consider doing business together.

"Sometimes it is the case where both the start-up and the bank aren't ready to work with each other yet but having the hand of bank in your shoulder saying "We are not keen to buy your service now, but your technology is terrific, work on that." is not the type of advice that would have come if the company was not in the FinTech community."

FINTECH-ORGANISATION-A(UK)

FINTECH-COMPANY-C(UK) and **FINTECH-COMPANY-B(UK)** stated that the main problem of FinTech companies is banks in general, as they aren't flexible and don't move fast or quick enough to embrace any sort of innovation to create a big impact on their bottom line.

"When you set up a start-up you have one gatekeeper. However, in financial industry you have a couple of them to get in the sector. Banks are very slow compared to companies in other industries."

FINTECH-COMPANY-B(UK)

FINTECH-COMPANY-A(UK) indicated that there are quite a few challenges for FinTech companies. **FINTECH-COMPANY-A(UK)** explained that as finance itself is a quite broad spectrum, finding a product that meets everyone's need is sometimes quite difficult. Therefore, a lot of companies go into niches. **FINTECH-COMPANY-A(UK)** stated that working with UK banks provides its own challenges as they have a lot of road maps, products they want to deliver and have their own challenges to mitigate the risks. Therefore, banks want to be sure that innovative solutions provided by third parties are as secure and convenient as possible. Also, big banks have different types of customers and they want to make sure that these solutions meet their customers' requirements. **FINTECH-COMPANY-C(UK)** indicated that another major challenge for FinTech companies is that as banks are large organisations, they need to speak to too many people in order for a decision to be taken about their solutions, which is time consuming for start-ups. If one person from the bank doesn't like or understand the solution of FinTech companies, they can't reach an agreement and this can even destroy the start-up very quickly. **FINTECH-ORGANISATION-C(UK)** agreed that the large sizes of banks create challenges for FinTech start-ups.

"FinTech start-ups are still annoyed by the big banks, because they are so difficult to navigate and trying to find the right person to talk to or the

decision maker struggle start-ups. But I think there is a lot of feeling that they will eventually do some business."

FINTECH-ORGANISATION-C(UK)

FINTECH-ORGANISATION-C(UK) stated that sometimes banks have problems when engaging with a start-up because they treat everybody like they would treat other giant major banks, which is just not appropriate. However, **FINTECH-ORGANISATION-C(UK)** added that banks are changing, they are getting involved in order to learn and adapt.

FINTECH-COMPANY-B(UK) stated that banks are dealing with very sensitive information and have security concerns when buying the products and services of FinTech companies. **GOVERNMENTAL-ORGANISATION-A(UK)** stated that in B2C side, ensuring the security of consumers is something the industry still needs to think about. **FINTECH-ORGANISATION-B(UK)** explained that a threat for FinTech start-ups targeting banks might be the decreasing commitment of banks after they showed interest to start-ups' solutions. **FINTECH-COMPANY-B(UK)** indicated that one of the challenges FinTech companies have is that convincing consumers to use their solutions as it's hard to change the consumer behaviour to use innovative financial solutions.

3.2. Interview Findings: Turkish Organisations

According to **PAYMENTS-COMPANY-B(TR)**, Turkey is a strategically important market.

"Turkey has a good position among European countries in terms of the market penetration. Turkey is the Europe's second biggest credit card market after the UK and the third biggest debit card market. The sizes of the market and the population are very big and the banks are really keen

on leveraging new technologies. The generation is young and welcoming disruptive technologies faster than other countries."

PAYMENTS-COMPANY-B(TR)

BANK-A(TR) said that Turkey's bankable population is around 58m, which is almost 75% of its total population. According to **BANK-A(TR)**, Turkey has a great potential for the banking sector. **BANK-A(TR)** stated that currently, Turkish banks are trying to reach this bankable population, especially the ones living in underdeveloped regions, that forces Turkish banks to develop innovative banking technologies. **BANK-C(TR)** indicated that the unbanked and the under banked population is still high in Turkey. **PAYMENTS-COMPANY-B(TR)** said that today there are more than 20m unbanked and under banked people in Turkey. One of the objectives of **PAYMENTS-COMPANY-B(TR)** is to be able to give this population a tool to make electronic payments.

BANK-C(TR) predicted that the number of digital natives in Turkey will be growing. **FINTECH-COMPANY-B(TR)** indicated that Turkey is more advanced than many other western countries in terms of internet speed and smartphone penetration. **BANK-C(TR)** emphasised that Turkish banks need to develop their value propositions for digital natives and unbanked population.

FINTECH-COMPANY-B(TR) added that Turkish population is highly engaged with new technologies. According to **BANK-A(TR)** and **PAYMENTS-COMPANY-A(TR)**, Turkish banking customers are really quick adopters of new technologies due to the demographic features of the population in Turkey.

"Turkey's population is 76m and 50% of the Turkish population are under the age of 30. Thanks to its dynamic and young population, technology adoption in Turkey has accelerated."

PAYMENTS-COMPANY-A(TR)

BANK-C(TR) stated that Turkish banking sector is very successful in leveraging new technologies due to the growing young population and internet usage in Turkey. **BANK-A(TR)** explained that increasing usage of mobile banking products in Turkey is as a result of the banks' efforts to gain young customers.

"There should not be big differences between Turkey and other European countries in terms of behavioural segmentation of banking customers. Same attitudes and same behaviours can be observed in the main customers groups. The difference is observed when we look at the portion of the Millennials (also known as Gen-Y), the generation of people born between 1980 and 2000, as they made up 33-35% of Turkey's total population. Increasing usage of mobile banking products in Turkey is a result of banks' efforts to gain Gen-Y customers."

BANK-A(TR)

According to **PAYMENTS-COMPANY-B(TR)**, the internet generation in Turkey, the people born in the 90s, has actually started to graduate from high schools or universities and to earn their own money, meaning that they will be using payment technologies more often to spend their own incomes. **PAYMENTS-COMPANY-B(TR)** predicts that there will be a significant increase in mobile and electronic payments usage driven by this generation.

FINTECH-COMPANY-B(TR) stated that financial sector in Turkey is among the most technologically advanced and innovative sectors.

"Turkish banks' products, offerings and the usage of technology are surpassing their competitors all around the world. Accordingly, financial technologies sector is also well-established and provides more advanced and innovative solutions compared to their competitors in Europe. Considering the difference between the conservative consumer behaviour

in Europe against the tech-savvy consumers in Turkey, this advancement in Turkey is easy to justify. Also, the volatile business and financial environment in Turkey push financial institutions to use technology as much as possible for better efficiency, risk management, customer on boarding and PR practices."

FINTECH-COMPANY-B(TR)

BANK-A(TR) explained that technology is one of the competitive differentiator for banks in Turkey and banks are trying to differentiate themselves with the help of technology and innovation. **FINTECH-COMPANY-B(TR)** said that banks in Turkey are using the latest technologies to reach to their customers through multiple channels and with reduced costs at the same time. **FINTECH-COMPANY-B(TR)** added that leveraging digital channels are the most suitable solution for this challenge while the high acceptance rate of new features and technologies by the customers also helps for this. **PAYMENTS-COMPANY-B(TR)** also stated that Turkish banks see technology and innovation as a differentiator against competition and added that thanks to their high profit margins, Turkish banks can invest in new technologies easily. **PAYMENTS-COMPANY-A(TR)** indicated that Turkish banks have invested heavily in technology and have kept their systems at the leading edge of operational and digital excellence for decades.

"Turkish banks and the technology suppliers to banking sector are trying out new ways of improving existing solutions and are testing new technologies constantly. Turkish banks are open to change and spare no expense on investment even though there is not enough demand for a product."

PAYMENTS-COMPANY-A(TR)

According to **PAYMENTS-COMPANY-A(TR)**, when banks add their creativity to their strong infrastructures, they are able to offer new delivery channels and new features to their customers. **BANK-C(TR)** said that Turkish banking sector is quick to adopt new technologies.

"Turkish banking sector adopt innovative technologies very quickly. There are some examples where Turkish banks advance European or US banks in terms of launching new technologies including online and mobile banking technologies."

BANK-C(TR)

PAYMENTS-COMPANY-B(TR) stated that Turkey is one of the most innovative payment markets in Europe and that payments sector is very competitive in Turkey. **PAYMENTS-COMPANY-A(TR)** exemplified that Turkey was the first country in Europe to issue contactless cards. **BANK-C(TR)** said that credit cards and payment by instalments are highly used in Turkey. **PAYMENTS-COMPANY-A(TR)** said that the implementation of payments in instalments and loyalty programs (mile and cash bonus collection practices) triggered the rapid growth of innovative payment technologies and fierce competition in Turkey. **PAYMENTS-COMPANY-A(TR)** indicated that currently card penetration is very high in Turkey with 100m debit cards and 57m credit cards, which makes Turkey the second among other European countries. There are also 2.3m POS terminals, which makes Turkey the first among European countries.

PAYMENTS-COMPANY-A(TR) stated that they have close relations with the Turkish Government as payments sector.

"For example, we can easily explain the sector's needs and try to find solutions together. Similarly, the Turkish Government is including our sector to their consultation and cooperation process on payment sector."

PAYMENTS-COMPANY-A(TR)

PAYMENTS-COMPANY-B(TR) said that Turkish Government's objective to become a Cashless Society by 2023 has been supported by the industry. **PAYMENTS-COMPANY-A(TR)** indicated that Turkish Government and payments sector have complementary visions to create a Cashless Society and added that they have strong support of the government to reach this goal.

"We have 9 years to go and we are still at 35-37% penetration. I am not sure if we will be able to achieve our target but all the industry players are very committed to the Cashless Society objective and still trying to make it happen. I think this is what really matters."

PAYMENTS-COMPANY-B(TR)

PAYMENTS-COMPANY-A(TR) also addressed that infrastructure developments are very important for Turkey to become a cashless society.

"Unbanked population and habit of cash usage are the main challenges for Turkey to become a cashless society."

PAYMENTS-COMPANY-A(TR)

PAYMENTS-COMPANY-B(TR) indicated that Turkish Government is supportive for increasing electronic payments because it is very important for tax collection.

"Turkish banking industry is the most closely audited and monitored industry. Every single transaction people make in banking can be actually tracked and this gives Turkish Government a very strong tool to collect tax. It's an issue in Turkey because the black market seems to be around 30% of the GDP which is really higher than the average in Europe. Therefore, the more we increase electronic payments in Turkey, the less the black market will be."

PAYMENTS-COMPANY-B(TR)

PAYMENTS-COMPANY-B(TR) said that Turkey has a closely regulated card market, with having some gaps compared to Europe. However, there have been some improvements in the regulation.

"Recently Turkish Government, CBRT and the BRSA introduced a new legislation which regulates the e-money institutions and payment services and was missing in our legal system. This is the local version of European Payment Services Directive. I think the new legislation is critical for the growth of e-commerce, payment services and electronic money in Turkey. From this respect, I think an important gap has been removed."

PAYMENTS-COMPANY-B(TR)

"Thanks to visionary management of the BRSA, we are closely following the latest technologies and developments in payment technologies and taking necessary actions to adopt the regulations."

PAYMENTS-COMPANY-A(TR)

PAYMENTS-COMPANY-B(TR) stated that Turkish banks have invested a lot of money into payment business to strengthen their value positions and to enhance customer loyalty and profitability. **PAYMENTS-COMPANY-A(TR)** indicated that their innovative payments solutions are market-driven and designed according to needs of consumers in Turkey. **PAYMENTS-COMPANY-A(TR)** explained that due to its young population, there is a high demand for e-commerce in Turkey which led banks to realise that they needed a new methodology to make e-commerce transactions more secure, faster and easier. **PAYMENTS-COMPANY-A(TR)** added that banks also needed the new methodology to be user-friendly in order to encourage consumers to use their cards for e-commerce. Therefore, solutions of **PAYMENTS-COMPANY-A(TR)** were created by market demand and shaped by banks' request.

According to **PAYMENTS-COMPANY-B(TR)**, Turkey is in a better position in mobile payment technologies compared to the rest of the world and all industry players in Turkey are trying to make these technologies work from different angles. **PAYMENTS-COMPANY-B(TR)** said that besides payments companies, mobile network operators came up with their own digital wallets and there are also some start-ups supporting this technology.

According to **PAYMENTS-COMPANY-B(TR)**, it is not the technology which really matters but it is the consumer experience and the value proposition that will change and drive the consumer behaviour. **PAYMENTS-COMPANY-B(TR)** said that if companies put right value proposition in practice, than consumers will be more willing to embrace these technologies. **PAYMENTS-COMPANY-A(TR)** stated that it can be said that Turkish people are open to new technologies if they are offered convenient services. **PAYMENTS-COMPANY-A(TR)** believes that defining consumers' real pain points and needs and then create the easiest and most convenient way to fulfil their needs is the only way to encourage Turkish people to use new payment technologies. **BANK-A(TR)** believes that besides having innovative technologies, the key issue about customer behaviour is how financial services providers design their total customer journey. **BANK-A(TR)** claimed that the well-designed customer journey within their physical branches and direct banking channels and Omni-channel approach they have are encouraging customers to use innovative technologies of **BANK-A(TR)**.

"Technology alone is not enough to differentiate Turkish banks in the eyes of the customers. Creating emotional bound with the customers and offering them service quality by using technology are essential to win them. That's why when we consider any new technology, we first think about the emotional bound it will create with the customer."

BANK-A(TR)

FINTECH-COMPANY-A(TR) stated that Turkish banks invest primarily in mobile applications as these applications reduce their expenses. **FINTECH-COMPANY-A(TR)** added that Turkish banks have started to give importance to the usage of mobile applications within their organisations.

According to **BANK-C(TR)**, in order to achieve successful implementation of alternative banking channels, banks should work closely with their IT departments. **BANK-C(TR)** indicated that they have consumer centric online and mobile banking channels. **BANK-A(TR)** said that technologies they use at their branches help them to identify customers regarding their physical appearance, gender or age and thanks to this information **BANK-A(TR)** customises its campaigns for each customer. **FINTECH-COMPANY-B(TR)** stated that their products and services actually created the mobile banking environment in Turkey, which also helped Turkish banking sector to become the most innovative and fast paced banking sector in the world.

FINTECH-COMPANY-B(TR) indicated that besides mobile banking solutions, Turkish banks demand wallet, Google Glass, Beacon and ATM projects from them. **PAYMENTS-COMPANY-A(TR)** stated that innovations related to P2P money transfer, such as paying through mobiles, watches and Google Glass, are on the way for Turkish consumers. **PAYMENTS-COMPANY-A(TR)** argued that nowadays m-commerce has been taking the place of e-commerce in Turkey which makes P2P money transfer more and more crucial.

PAYMENTS-COMPANY-A(TR) said that their aim is to contribute to the creation of an eco-system in Turkey in order to help banks, merchants and consumers to save time, money and energy and added that they welcome competition from other companies. **PAYMENTS-COMPANY-**

A(TR) indicated that their highly secure innovative payment solutions have inspired similar companies in other countries. **PAYMENTS-COMPANY-A(TR)** stated that similar innovations were developed in Turkey earlier than the UK, as Turkish companies received the demand and investment before their UK counterparts. **PAYMENTS-COMPANY-A(TR)** explained that they are partnering with companies producing similar or complementary products and services in other countries and they are open to work with any international network, including the ones in the UK, to achieve better integration.

BANK-C(TR) mostly prefers developing their alternative banking channels in-house. **BANK-A(TR)** stated that Turkish banking sector prefer having technology subsidiaries which they invest considerable amount of money in. **BANK-A(TR)** thinks that these banks became so innovative in order to create technological competition within the sector. However, according to **BANK-A(TR)**, Turkish banks shouldn't create technology subsidiaries within their organisations.

"I believe that we are banks, not technology companies, and we do not need to invest to create such technology subsidiaries. Instead, with the help of outsourcing and special agreements with the right vendors, Turkish banks can easily create a technology environment within their organisations and differentiate themselves. There are many expert companies in Turkey which serve banking sector in technology area in general as well as in different technology-related sub-areas. When Turkish banks have their technology subsidiaries, they should hire the best talents in different domains, such as internet banking, mobile banking, core banking etc., which is very difficult especially in technology area. Therefore, working with the experts for each sub-area is a better solution for Turkish banks than creating their own technology subsidiaries."

BANK-A(TR)

PAYMENTS-COMPANY-A(TR) stated that customer expectations and behaviours are changing due to new technologies. In order to adopt these market conditions, banks have to be open to new models and collaborations with other parties. Otherwise, they would lose their customers or more importantly customer data. **PAYMENTS-COMPANY-A(TR)** indicated that Turkish banks are aware of these changes and taking their actions accordingly. According to **PAYMENTS-COMPANY-B(TR)**, the trend was to use in-house resources to develop payment solutions but recently it has been seen that Turkish banks are leveraging third parties to develop these platforms, software and solutions. **PAYMENTS-COMPANY-B(TR)** explained that these third parties started to sell their products in other markets which is very important as they were able to grow their business significantly. **PAYMENTS-COMPANY-B(TR)** thinks that Turkey has very enhanced and well-developed third party companies in payment technologies and many other countries want to replicate the features of Turkish card payment systems. **PAYMENTS-COMPANY-A(TR)** indicated that they worked with disruptive FinTech companies as they are more agile and innovative than traditional technology companies. However, they prefer in-house development now as they possess the relevant resources.

FINTECH-COMPANY-A(TR) explained that the most important part for innovative companies when working with banks is to pass the procurement and signing the contract processes as banks' policies and law departments conduct a detailed process to finalise the agreement. **FINTECH-COMPANY-A(TR)** added that Turkish banks give significant importance to technical capabilities and previous successes of FinTech companies when choosing to work with them.

BANK-A(TR) indicated that thanks to the BRSA, Turkish banking sector is regulated in terms of technology and in terms of technology related vendors. With regulation and legislation changes in Turkey, instead of having separate service level agreements with vendors, banks can use some existing regulations. **BANK-A(TR)** explained that this protects banks and decreases the risk of partnering with third parties. **BANK-C(TR)** stated that Turkish banking sector is negotiating with the regulatory authorities to ease regulations in implementing new technologies.

"The fact that Turkish banking and finance sector is highly regulated and the nature of the sector create barriers for banks to enjoy the advantages of new technologies and the flexibility new technologies provide, since it is not possible for banks to try new technologies without mitigating risks. Due to their risky nature, sometimes new technologies become invalid for banks."

BANK-C(TR)

Turkish banks access **FINTECH-COMPANY-A(TR)** through references and many banks continue to work with **FINTECH-COMPANY-A(TR)** after the first project. **FINTECH-COMPANY-A(TR)** stated that in addition to their successful team, way of working and expertise, Turkish banks prefer working with **FINTECH-COMPANY-A(TR)** as it also gives trainings for banks to create their own teams. **FINTECH-COMPANY-B(TR)** said that they work with many of their banking clients as close partners and are working in close collaboration throughout the project. **FINTECH-COMPANY-B(TR)** added that only a few larger banks understand the value of the mobile channels clearly and invest into it accordingly. According to **FINTECH-COMPANY-B(TR)**, heavy price sensitive competition creates confusion for the smaller banks and causes failed investments into some IT companies with less or no mobile banking experience.

FINTECH-COMPANY-A(TR) thinks that the advantage of working in collaboration with banks' engineers is that they act fast during service integration process while the disadvantage is to access them as most banks' technology subsidiaries are located far from business centres. According to **FINTECH-COMPANY-B(TR)**, a mobile banking project requires the involvement of the IT engineers from the banks to be able to realise the integration with the banks' core banking services.

"Since the roles of the banks and us are well-defined and due to the project management methodology we are using, this type of working together is almost seamless, especially for our customers with whom we are working for some time. For the new customers and also considering the differences in corporate culture among the banks, we do experience a period when we might need to put special importance in communication until we achieve the best way of working together."

FINTECH-COMPANY-B(TR)

BANK-A(TR) said that FinTech companies working with financial sector in Turkey have a major weakness. According to **BANK-A(TR)**, FinTech companies in Turkey have to create their own ecosystems.

"Financial technology companies must, not should, create their own ecosystems in Turkey. For example, a technology company providing solutions to different banks in Turkey has to partner with other vendors who can easily develop some functions on their products or services on the behalf its customers."

BANK-A(TR)

FINTECH-COMPANY-A(TR) indicated that start-up ecosystem in Turkey has been developing rapidly in the last 5 years. Many companies were founded in different sectors thanks to the economic stability, developing internet technologies, increase in the number of the VC companies especially foreign ones and increase in the number of entrepreneurship centres and incubators. **FINTECH-COMPANY-B(TR)** added that Turkish population is well-educated. **FINTECH-COMPANY-A(TR)** said that the biggest strengths of one of the world's start-up hotspots, İstanbul, are having a young talent pool both in development and in design areas, having cheaper labour costs compared to other start-up communities around the world and its increasing brand value. **FINTECH-COMPANY-B(TR)** stated that they are hiring people from the top-universities and there are a lot of employees who have an international school or working experience within their organisation. However, since Turkish education system does not have so many mobile-specific programmes, this talent pool isn't so deep. However, **FINTECH-COMPANY-B(TR)** thinks that there is a reverse brain drain to Turkey.

FINTECH-COMPANY-B(TR) indicated that Turkey is located between Europe and Asia, which makes it a gateway for interacting with markets in these regions. **FINTECH-COMPANY-B(TR)** stated that İstanbul-based companies can access Dubai, Moscow, London and Paris with flights taking 3-4 hours which provides them with the ease of doing business with multiple countries. **FINTECH-COMPANY-B(TR)** said that acquiring Turkish FinTech companies can help international companies to expand into the rapidly developing Middle East market. **BANK-A(TR)** stated that Turkey's strategic location enables FinTech companies in Turkey to do business easily with the companies in Europe and Middle East.

"Turkey is a great gateway for European countries to access Middle East while it's also a great gateway for Middle East countries to reach Europe. A FinTech company can be easily recommended to other banks in Middle East or Europe by Turkish banks and open branches in these regions."

BANK-A(TR)

Besides the advantages offered by Turkey, start-ups are facing major challenges in Turkey. **FINTECH-COMPANY-A(TR)** stated that when it was founded as a start-up, the biggest challenges it had were the existing business standards within the sector and managing customer relations. **FINTECH-COMPANY-A(TR)** addressed that instead of enhancing the incentives and support to Turkish start-ups, the related procedures and processes should be improved as they are complex and long. **FINTECH-COMPANY-A(TR)** added that their continuous challenge is to inform customers about innovative technologies and to explain their contributions to business processes very well in order to convince them to work with **FINTECH-COMPANY-A(TR)**. Another challenge that **FINTECH-COMPANY-A(TR)** indicated is that Turkish companies still consider IT as a simple technical support business. On the other hand, **FINTECH-COMPANY-A(TR)** claimed that Turkish start-up ecosystem lacks marketing and brand culture. **FINTECH-COMPANY-B(TR)** stated that Turkey lacks institutional investors.

According to **FINTECH-COMPANY-B(TR)**, most Turkish entrepreneurs have the fear of failure. **FINTECH-COMPANY-A(TR)** thinks that the biggest enemies of Turkish entrepreneurs are the desire to earn money in a short period of time and make economic concerns their priorities. According to **PAYMENTS-COMPANY-B(TR)**, companies shouldn't be afraid of trying new technologies.

"Innovation and disruptive technologies are kind of risky because companies don't know whether these technologies will work or not. Companies need to try the new technology, enhance it or maybe scrap it and start from scratch. However, this is how a company culture is built and the brand is positioned."

PAYMENTS-COMPANY-B(TR)

FINTECH-COMPANY-A(TR) believes that Turkish start-ups are struggling to access international markets as a result of Turkey's, mainly private sector's and society's, insufficient participation to globalisation trend. **FINTECH-COMPANY-A(TR)** also stated that FinTech companies from Turkey and the UK should do more business together.

"I think the FinTech companies in Turkey and the UK don't do enough business as it should be. Turkish start-up ecosystem is mostly attracted by Silicon Valley. There are some successful Turkish start-ups which have their R&D centres in Turkey and market their products and services from Silicon Valley. However, I believe that we should have closer relations with Europe, especially with English speaking country the UK."

FINTECH-COMPANY-A(TR)

BANK-A(TR) indicated that FinTech sector is a great opportunity especially for young developers or young entrepreneurs. **BANK-A(TR)** stated that it plans to collaborate with universities in order to create an open platform for some young code developers. At the same time, **BANK-A(TR)** aims to find some solutions easily for its business issues. **FINTECH-COMPANY-B(TR)** indicated that it has created academia partnerships and managed to attract top design and engineering talent in Turkey. Moreover, it hosted many summer interns from world's renowned schools over the past few years, which helped it to create strong bonds with best business minds of the future. **BANK-C(TR)** stated that Turkish Government actively supports the development of Technoparks by collaborating with universities in order to make science, technology and business integrate with each other. This creates an advantage for **BANK-C(TR)**. **FINTECH-COMPANY-B(TR)** said that Turkish Government aims to stimulate entrepreneurship and SMEs creation and boost productivity. **FINTECH-COMPANY-A(TR)** indicated that it received support from multiple public organisations for some of its R&D projects. **FINTECH-COMPANY-B(TR)** stated that it received government support for some of its R&D projects. **FINTECH-COMPANY-B(TR)** explained that by being located in STPs, which are governed by a legal framework managed by the Ministry of Science, Industry and Technology in Turkey, companies can have major tax advantages and incentives and VAT, corporate and income taxes exemptions. **BANK-A(TR)** considers providing mentorship especially for FinTech companies, and start-ups as well, in Turkey. **FINTECH-COMPANY-B(TR)** stated that it has been one of the leading companies in Turkey that contributed to the development of FinTech sector and will continue to contribute to the sector for it to grow faster. **FINTECH-COMPANY-B(TR)** said that it has been mentoring and partially financing young start-ups through some contests. **FINTECH-COMPANY-A(TR)** stated that it provides mentorship to Turkish start-ups and coordinates with the entrepreneurship centres at universities for encouraging and supporting new start-ups. **FINTECH-COMPANY-A(TR)** doesn't invest in start-ups directly. **FINTECH-COMPANY-A(TR)** doesn't collaborate with banks to develop FinTech sector in Turkey. **PAYMENTS-COMPANY-A(TR)** indicated that they follow FinTech sector, especially FinTech start-ups, closely. **PAYMENTS-COMPANY-A(TR)** is sharing knowledge with them and providing network opportunities to them which is very important for entrepreneurs. **PAYMENTS-COMPANY-A(TR)** is also open to cooperate with FinTech companies and trying to find the best business models and appropriate models with them. Sharing the knowledge with the young professionals interested in mobile technologies is one of the key elements of **FINTECH-COMPANY-B(TR)**'s vision. **BANK-A(TR)** indicated that it has been visited by different domestic companies, start-ups and international companies who are interested in doing business with **BANK-A(TR)**. **FINTECH-COMPANY-B(TR)** stated that working with other FinTech companies gives them access to these companies' unrivalled technologies and expertise. **PAYMENTS-COMPANY-B(TR)** works very closely with all vendors, different players in the ecosystem and entrepreneurs.

"We work with anyone who is willing to introduce a new solution and we are ready support them with our own experience and knowhow. Many start-ups and different companies came to us to introduce their

technologies and programmes which is very important for our business point of view."

PAYMENTS-COMPANY-B(TR)

In terms of start-up incubation, **PAYMENTS-COMPANY-B(TR)** worked with very different partners. **PAYMENTS-COMPANY-B(TR)** try to motivate young people to think about the problems of payment industry or the retail industry and they've been able to bring their company closer to all these entrepreneurs and small start-ups. **PAYMENTS-COMPANY-B(TR)** will continue to invest in these programmes to identify the ideas and companies which may succeed and to contribute to their business. Regarding FinTech start-up incubator programme, **BANK-A(TR)** stated that Turkish banking code limits them to invest in some areas. Unfortunately, they just work for banking related projects and banking related issues. **BANK-A(TR)** thinks that there should be some changes in the regulation, especially in banking sector, regarding this. Those are the limitations but with the help of university collaborations, **BANK-A(TR)** believes that they can offer some doors for young entrepreneurs and young start-ups. **BANK-A(TR)** indicated that maybe in the near future it can create some special programs and some special service for those type of young entrepreneurs with the help of some special loan schedules, which is possible. **BANK-C(TR)** stated that it provides special loan schedules for entrepreneurs and SMEs to support their growth. **FINTECH-COMPANY-B(TR)** stated that if there would be a FinTech accelerator program launched in Turkey, it would be open to create partnerships with or to provide mentorship to it as they have always tried to be supportive for start-ups. Finally, **BANK-C(TR)** said that they're following the FinTech accelerators in London.

"We are closely following the FinTech Accelerators in London. We also see some similar initiatives in Turkey led by banks, operators or other private

companies in corporation with universities. Besides following them closely, involving in these initiatives is also on our agenda."

BANK-C(TR)

3.3. Comments about Turkey from Interviews with Organisations in the UK

FINTECH-COMPANY-D(UK) explained that every country has its own regulation but thanks to the EU law they finance projects or companies only from EU and European Economic Area countries. **FINTECH-COMPANY-E(UK)** stated that funding Turkish companies is not something they've looked into yet and they don't know anything about the market in Turkey.

FINTECH-ORGANISATION-A(UK) indicated that they're willing to work with FinTech companies from all over the world and have them localised in the UK. Therefore, **FINTECH-ORGANISATION-A(UK)** would love to work with the FinTech sector in Turkey. Usually the first engagement they have with another country occurs through partnering with a similar organisation in that country.

FINTECH-ORGANISATION-B(UK) stated that İstanbul's start-up ecosystem is very new but İstanbul can become a hub for start-ups in the coming years. However, **FINTECH-ORGANISATION-B(UK)** thinks that start-ups, which will become successful in İstanbul and want to go on the big stage, should come to London after.

GOVERNMENTAL-ORGANISATION-A(UK) indicated that start-ups begin in the UK, or in Turkey for example, immediately have a global perspective. As their local market is smaller, they design a global perspective from the beginning which makes it easier for them to become international.

FINTECH-COMPANY-A(UK) thinks that FinTech is very country specific and depending on a specific country, the needs of the FinTech space are very different. Therefore, **FINTECH-COMPANY-A(UK)** believes that what may suit the UK right now could be different from what suits Finland, the US and Turkey.

4. Conclusion and Recommendations

The following part presents the conclusion of the research and managerial implications. It summarises the findings from the interviews and provides SWOT analysis of the FinTech sectors in the UK and Turkey. At the end, a development model for the FinTech sector is presented and recommendations for accelerating the FinTech sector in London and recommendations for developing the FinTech sector in İstanbul are provided. This study believes that policy makers in the UK and Turkey can benefit from these suggestions in order to strengthen and promote their FinTech sectors which will significantly contribute to the objective of making their banking sectors better, more efficient and more sustainable.

4.1. Conclusion of the Findings from Interviews

This research about the FinTech and banking sectors and banking technologies has showed that the banks in the UK and Turkey have some similarities in terms of the way they perceive innovative technologies and leverage new technologies. However, it has been observed that there are some differences between the banks in the UK and Turkey in terms of the way they acquire and/or develop these technologies. The following part summarises the findings from the interviews about the similarities and differences between the banks in the UK and Turkey in terms of their perceptions of and strategies about financial technologies and innovative banking technologies. Moreover, the findings from the interviews about the dynamics of the FinTech sectors and start-up ecosystems in both countries have been summarised.

This research has found that one of the reasons contributing to the emergence and development of the FinTech sector in the UK is declining consumer trust to banks after the GFC in 2008. As consumers started to look for alternatives for banks after 2008, UK banks have understood that they have to innovate to win their customers back.

This research has showed that both the UK and Turkey are strategically important markets. Their large population are welcoming disruptive technologies faster than other countries. The internet usage, mobile and smartphone penetration is getting higher and higher in both countries. Banking customers in both countries are quick adopters of new technologies. Turkish banking customers are quick adopters of new technologies due to the demographic features of the population in Turkey. The Turkish banking sector is keen on and very successful in leveraging new technologies due to the growing young population and internet usage in Turkey.

The banking sectors in both countries are advanced and tech savvy. UK banks want to have the best technology they can as they know that they will lose customers otherwise. If a UK bank launches an innovative technology, competition leads other banks to introduce the same service for their customers. The Turkish banking sector is among the most technologically advanced and innovative sectors in the world and provides better solutions compared to their competitors in Europe. As a result of their high profit margins, Turkish banks can invest in new technologies easily. UK banks seem very interested in making their own internal systems and processes better by using new technologies. Turkish banks use innovative technologies for better efficiency, risk management, customer on boarding and PR practices. Besides mobile banking solutions, Turkish banks demand wallet, Google Glass, Beacon and ATM projects from FinTech companies and give importance to wearable technologies.

Major British banks have very competitive in-house development teams. The Turkish banking sector prefers having technology subsidiaries which they invest a considerable amount of money in. However, as customer expectations and behaviours are changing due to new technologies, recently it has been seen that Turkish banks are leveraging third parties to develop platforms, software and solutions to gain competitive advantage. Turkish banking and financial services sectors are interested in providing mentorship to and are open to share their knowledge and cooperate with especially FinTech companies, and start-ups as, well for developing innovative solutions. On the other hand, the FinTech industry is challenging the UK banking industry significantly and forces banks to engage with the FinTech sector for better efficiency and more sustainability. UK banks have an interest towards FinTech companies and want to engage with them. In addition, some UK banks consider further strategic investment opportunities including the acquisition of successful FinTech companies.

UK banks want to be sure that innovative solutions provided by third parties are as secure and convenient as possible. Turkish banks give significant importance to technical capabilities and previous successes of FinTech companies when choosing to work with them.

The FinTech sector is expected to bring value to the UK's economy and to improve financial services and customer service by fostering competition. UK Government aims to make the UK a global FinTech hub, with London as the centre. The financial services cluster, tech community and the supportive regulatory authorities and the Treasury are contributing to the development of financial services and FinTech sectors in the UK. These communities are constantly interacting with each other for making the UK financial services industry more efficient and sustainable. The infrastructure for FinTech innovation including universities, accelerators and the VCs is very strong in the UK and is attracting top talents to come to the country. The UK has an access to buyers, funding and talent. The regulatory risks in the FinTech sector have been reduced in the UK. It's cheap to create a business, access technology and be located at shared places in the UK.

The start-up ecosystem in Turkey has been developing rapidly in the last 5 years. Many companies were founded in different sectors thanks to the economic stability, developing internet technologies, increase in the number of the VC companies and increase in the number of entrepreneurship centres and incubators. Turkey's location contributes to the development of a start-up ecosystem as Turkey is a great gateway for European countries to access Middle East while it's also a great gateway for Middle East countries to reach Europe. Turkish population is well-educated and İstanbul has a young talent pool both in development and in design areas. Turkish Government aims to stimulate entrepreneurship and SMEs creation and boost productivity.

Regulation is challenging FinTech companies and start-ups in both countries. However, regulatory authorities and the UK Government are very supportive and trying to understand how they can help to the development and promotion of the FinTech sector by listening to the needs of the FinTech community. On the other hand, the Turkish banking sector is negotiating with the regulatory authorities to ease regulations in implementing new technologies.

4.2. Managerial Implications

The main aims of this dissertation are to understand the impact of technology adoption and how the FinTech sector can improve banking sectors in the UK and Turkey, and to create a development model for the FinTech sector which disrupts and improves the banking sector by making it better, more efficient and more sustainable. Findings from interviews with organisations in the UK and Turkey have significantly contributed to the goals of this dissertation and provided very valuable insights on how to accelerate the FinTech sector in London and how to develop the FinTech sector in İstanbul.

In order to contribute to the growth and development of FinTech sectors in London and İstanbul, the following part presents SWOT analysis of London and İstanbul, a development model for the FinTech sector and recommendations for accelerating the FinTech sector in London and for developing the FinTech sector in İstanbul, which are all created with the help of the findings of this research by the author, Melike Belli.

4.2.1. SWOT Analysis of the Accelerating FinTech Sector in London

S W O T

- UK Government's plan to make London the global FinTech capital
- Having strong communication and collaboration between Banking, Financial Services, Technology and FinTech sectors, UK Government and Regulatory Authorities to develop and promote London's FinTech sector
- Having a continuously developing infrastructure for fostering FinTech
    - Industry body (Innovate Finance) for FinTech sector, TechCity cluster, FinTech accelerators, university programmes related to technology and FinTech
- Developed & supportive start-up ecosystem
    - Availability of VCs and investors, low setting up cost for new business, wide networking activities, easy access to financial and creative industries
- Tech savvy banking sector with an increasing interest towards and engagement with FinTech sector
- Increasing competition within the FinTech industry
- Fast adoption of internet, mobile phones and smartphones
- Access to talented and multilingual workforce ranging from fresh graduates to senior executives
- High brand value of London
- Convenient location to reach Europe and other countries easily

- Challenging regulation for FinTech sector companies
- Restrictive immigration laws
- Lower availability of VCs compared to Silicon Valley
- High costs of living & operational costs for companies coming from other countries
- Difficulty ofopening a bank account in the UK for companies coming from other countries
- Difficulty of ensuring the security of innovative solutions provided to end users and financial institutionsby FinTech companies

- Consumers' increasing interest towards FinTech solutions
- Banks' and financial services firms' increasing interest towards FinTech solutions
- Attracting more banks to use innovative solutions of FinTech companies
- Ability to attract talented and multilingual workforce ranging from fresh graduates to senior executives
- Potential partnerships and collaborations between universities, financial organisations and FinTech companies
    - Creation of a potential FinTechTechnopark in London in collaboration with universities
    - Creating partnerships between universities and FinTech accelerators and incubation programmes
- Increasing number of partnerships with FinTech organisations in other countries for promoting London as a global FinTech hub

- Challenging regulation for FinTech sector companies
- Restrictive immigration laws
- Lower availability of VCs compared to Silicon Valley
- Competitive in-house development teams of major UK banks
- Decreasing commitment from banks to solutions of FinTech companies
- Security concerns of individuals and businesses towards FinTech solutions
- Low ability in attracting talented and multilingual workforce ranging from fresh graduates to senior executives
- Other cities attracting FinTech companies

4.2.2. SWOT Analysis of the Developing FinTech Sector in İstanbul

- Economic stability in the past decade with steady growth
- Strong and highly regulated banking sector since 2001
- The Turkish Government's economic vision of 2023
    - Making İstanbul a global financial centre, developing the ICT sector, becoming a cashless society by 2023
- Developing infrastructures in İstanbul for increasing communication and collaboration between Banking, Financial Services, Technology and FinTech sectors, Turkish Government and Regulatory Authorities
- Having majority of the leading organisations from banking, financial, FinTech and technology sectors in İstanbul
- Transformation of İstanbul into a start-up hotspot
    - Increasing brand value of İstanbul in the global start-up scene, promotion of entrepreneurship in Turkey, increasing government support (e.g., incentives, tax exemptions and funds) for start-ups, developing and growing ecosystem for start-ups in İstanbul, increase of VC investments into İstanbul start-ups
- Increase in the number of entrepreneurship centres, STPs and industry-university collaborations
- Tech savvy and highly innovative banking sector with potential interest towards and engagement with FinTech sector
- Banks' and financial services firms' interest towards collaborating with or creating (potential) FinTech accelerators in Turkey
- Access to a large, young and educated talent pool having international study and work experience (e.g. increase in the reverse brain drain to Turkey)
- Large young population with fast adoption of internet, mobile phones and smartphones
- High mobile & smartphone penetration and increasing use of mobile banking services
- Central location between Europe and the Middle East

S W
O T

- Existing need for developing infrastructure
- Highly regulated banking sector limiting banks in acquiring new technologies
- Lack of industry experts for Financial Services and ICT at Government level (e.g., ISPAT) supporting and promoting these sectors
- Low availability of VCs
- Weak communication and collaboration between technology companies and banks
    - Turkish banks' preference for developing innovative technologies in-house

- Creating an infrastructure for increasing communication and collaboration between industries to develop FinTech sector
- Making İstanbul a global financial centre
- Establishment of the first thematic Technopark by Borsa İstanbul and Boğaziçi University dedicated to the financial services sector
- Developing an infrastructure for fostering innovation
- Increasing the number of start-up acceleration & incubation programmes in İstanbul
- Increase in mentorships provided by banks to FinTech companies
- Banks' and financial services firms' interest towards creating or collaborating with start-up accelerators & incubation programs in Turkey
- Attracting talented and multilingual workforce ranging from fresh graduates to senior executives
- High unbanked and under banked population
- Developing collaboration & partnerships with global FinTech centres e.g., London
- Central location between Europe and the Middle East with a potential of becoming a regional hub for FinTech companies and start-ups

- Highly regulated banking sector limiting banks in acquiring new technologies
- Decreasing commitment towards Government's 2023 vision
- Historically high inflationary economy stabilised for a decade
- Turkish banks' preference for developing innovative technologies in-house
- Security concerns of individuals and businesses towards FinTech solutions
- Low ability in attracting talented and multilingual workforce ranging from fresh graduates to senior executives

4.2.3. Development Model for the FinTech Sector

Findings of this research have showed that there are 4 main themes for developing and accelerating FinTech sectors. These themes are:

1. Collaborative Ecosystem
2. Interaction Between the Communities
3. Well-developed Infrastructure for Innovation
4. Supportive Ecosystem for the Development and Growth of FinTech Sector

The following part provides the development model for the FinTech sector and recommendations for London and İstanbul related to each theme.

Figure 28.
Development Model for FinTech Sector

4.2.4. Recommendations for Accelerating the FinTech Sector in London

Collaborative Ecosystem

- More banks and financial organisations in London should be encouraged to contribute to the development of FinTechstart-ups.
- More banks and financial organisations in London should interact and collaborate with FinTech companies to develop innovative technologies.
- Goal of making London the global FinTech hub should be embraced more by the UK banking sector.

Interaction between the Communities

- UK's banking sector and the FinTech sector should be brought closer in order for banks that still don't know what to do about the growing FinTech sector.
- Importance and advantages of contributing to, collaborating or partnering with FinTech companies should be promoted to the UK banking sector.

Well-developed Infrastructure for Innovation

- Science and Technology Park for FinTech sector should be created in London through industry-university collaborations.
- The number of university programmes related to technology and FinTech should be increased across the UK.
- More partnerships should be created between the universities and the FinTech sector across the UK.
- More partnerships should be created with organisations from other countries to promote and develop London's FinTech sector.

Supportive Ecosystem for the Development and Growth of FinTech Sector

- Regulation related to the FinTech sector should be improved.
- London should be promoted more as a FinTech hub in order to attract VCs as the availability of VCs is lower compared to Silicon Valley.
- UK consumers should be trained more on how to use innovative financial solutions and be educated about the advantages of using innovative financial solutions.
- Immigration laws should be improved for FinTech entrepreneurs around the world to set up their business in the UK.
- Due to the high cost of living in London for some start-ups, shared spaces should be increased.
- In order to accessand attract the talented and multilingual workforce, career events promoting the FinTech sector should be organised with universities.
- FinTech companies should increase their efforts in attracting people with experience in financial industry.
- Procedures to open a bank account in the UK should be improved as some foreign companies experience difficulties.
- Competition in the FinTech industry should be promoted more.

4.2.5. Recommendations for Developing the FinTech Sector in İstanbul

Collaborative Ecosystem

- Turkish Government and the regulatory authorities should take the lead in developing the FinTech sector in Turkey.
- Turkish Government and the regulatory authorities should try to understand and identify the needs of FinTech sector in Turkey.
- Financial services, technology, FinTech sectors and Turkish Government and regulatory authorities in Turkey should work closely together to develop İstanbul's FinTech sector.
- Banks and financial organisations in Turkey should be encouraged to contribute to the development of FinTech start-ups by providing mentorships and partnering with potential FinTech accelerators.
- Banks and financial organisations in Turkey should interact and collaborate with FinTech companies to develop innovative technologies.
- Industry Body for FinTech sector including policymakers, regulators, investors, financial services and technology sectors should be created.
- Turkish banks should be open to do more business with FinTechs and shouldn't damage competition within FinTech sector by investing heavily in their technology subsidiaries.

Interaction between the Communities

- Organisations from financial services, technology and FinTech sectors and Turkish Government and regulatory authorities should interact with each more and develop close relations.
- Turkish Government's plans to move the BRSA and CMB from Ankara to İstanbul should be accelerated.
- Importance and advantages of contributing to, collaborating or partnering with FinTech companies should be promoted to the Turkish banking sector.

Well-developed Infrastructure for Innovation

- FinTech Accelerators should be created by banks, financial organisations and the FinTechsector.
- Turkish Government should stay committed its 2023 vision and should continue to develop infrastructures for IFC-I plan and ICT sector.
- The number of STPs in İstanbul should be increased.
- The number of university programmes related to technology and FinTech should be increased across Turkey.

Supportive Ecosystem for the Development and Growth of FinTech Sector

- The regulation related to the FinTech sector and the regulation partly limiting Turkish banks in adopting new technologies should be improved.
- FinTech companies should create and develop their own ecosystems and collaborate with each other.
- Turkish consumers should be trained more on how to use innovative financial solutions and be educated about the advantages of using innovative financial solutions.
- İstanbul should be promoted more as a financial centre for attracting the leading financial institutions and a start-up hot spot for attracting VCs to invest in companies.
- The efforts to develop a supportive ecosystem for start-ups should be accelerated.
- Networking events should be organised for investors, financial services, technology and FinTech sectors to build relations.
- In order to access and attract the talented and multilingual workforce, career events promoting the FinTech sector should be organised with universities.
- Competition in the FinTech industry should be promoted.
- Developed FinTechhubs, such as London, should be taken as an example for development and observed closely in order to learn from their industry practices.
- The FinTech organisations, which are willing to create partnerships with Turkey's FinTech sector, in developed FinTech hubs, such as London, should be defined and contacted for potential partnerships.

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