

FINTECH IN PAYMENTS: BOOSTING CONSUMER CHOICE AND TACKLING REGULATORY CHALLENGES

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Abstract

This thesis discusses the impact that innovation in payments industry creates on consumers and banks.

We use data from several surveys to analyze how consumer preferences and behaviors have changed since the new payment options emerged. As consumers have more available choices, to pay faster and in a more convenient way, their preferences shift toward new payment methods. These results help us conclude that consumers have benefited from the innovations in the payments industry.

We also analyze how banks are disrupted by the increased competition and how they respond to the new challenges. We find from several surveys and case studies, that banks no longer have the dominant position in the payments sector and that they have to invest in innovations to maintain competitive advantage. We conclude that retail banks have negative effect from the increased competition in the payments sector.

Based on these results policymakers should take more initiatives to adapt financial regulations to the new market realities.

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Contents

1. Introduction	1
2. Literature review.....	4
3. Chapter I	7
3.1. History of the payment systems	7
3.2. Definition of payment and payment system.....	8
3.3. Innovation in the payment systems	11
3.4. Fintech innovators in the payment system	13
3.4.1. Retail companies	13
3.4.2. Telecommunication companies	14
3.4.3. Technology corporations	15
3.4.4. Fintech companies	16
4. Chapter II.....	17
4.1. Trends in non-cash transactions	18
4.2. Consumer behavior toward fintech	20
4.3. Consumer behavior toward trust and confidence	22
4.4. Security and regulation issues	23
4.5. Summary	25
5. Chapter III.....	26
5.1. Disruption to the payment sector in the banking industry	27
5.2. The response from the banking industry	28
5.3. Consumer experience with banking services and channels	29
5.4. Future of the banking industry related to payments	32
5.5. Summary	34
6. Conclusion	35
7. Policy Recommendations	37
8. References	39

1. Introduction

The 21st century brought many technological advancements, which have led to the emergence of innovations that challenge the ways in which numerous industries operate. Nowadays, almost every industry is forced to transform its operations to be able to compete on the market. Digitalization is already an inevitable modern phenomenon, which economists such as Klaus Schwab (2016) tend to describe as the fourth industrial revolution.

In the last twenty years, companies that are working with financial goods and services have changed the way they operate and have brought innovative ideas to the market. As innovations emerge in every sphere of our lives, people have rapidly changed the way they live and socialize with others. Digitally skilled people now make payments, communicate, trade funds and stocks, etc. much more efficiently on their portable devices.

Financial technology, also known as “fintech,” has created a “boom” in the financial sector. This industry has just begun to rise, and it will continue to expand in the years to come. Fintech is used to show the relation between information technology and financial operations (Arner, Barberis & Buckley, 2015). The fintech industry is developing fast and thus changing the living patterns of contemporary society.

As soon as fintech companies emerged, they started to offer innovative products and services in all financial industries and sectors. The payments industry also experienced a major transformation. Digital payments challenged the way in which banks operate and process payments, and they also challenged businesses to incorporate more innovative approaches. Last but not least, digital payments changed consumer behavior toward payments. The importance of fintech in the financial sector goes beyond financial products and services as large

corporations will compete to become industry leaders and attract as many loyal customers as possible (McKinsey, 2016).

Changes in the market supply of the payments industry, a shift of consumer behavior and consumer demand created by digitalization have created a need for new global regulations and policies. The developments in the payments industry are important for the global stability of financial systems, so they need to be analyzed carefully before making any policy decisions. Through this research project, we will analyze the effects that innovative payments have had on industry players toward both consumers and banks, which are the incumbent market players in the payment systems industry.

The payments policy has become an important topic for many debates and discussions between policymakers, entrepreneurs, and other financial players as there are many unresolved questions. The number of associations that represent the voice of the payment system providers or fintech companies has increased significantly both on national and international level. Their goal is to strengthen the voice of new market player in the policy debate and to actively represent them in front of regulatory bodies. Due to the noticeable changes in the payments industry in the recent years, it is important for us to analyze the deviations in the demand and supply in this industry and interpret the finding which would be relevant for potential future policy actions.

The plan of the thesis is as follows: In the first chapter, we will discuss the importance of the payments industry for the stability of the financial sector and the historical changes of the payments industry that brought innovation to this sector. We will also assess the most influential companies on the market. It is important to analyze the shift in consumer behavior and relate it to the need for new policies that create a competitive payments environment. As consumers needs are the baseline for creating policies, the second chapter will analyze consumer behavior

toward innovation in the payments industry. By evaluating consumer preferences, we want to identify whether consumers have experienced positive or negative effects from innovative payment methods. We will use data from several surveys to make conclusions. In the third chapter, we will examine the incumbent market players, the banks, and their behavior toward innovative payment companies. We will present how the operations of the banking industry are influenced by innovations in the payments sector and what kind of policies banks need to apply to stay competitive and maintain their client base in the future. However, the lack of publicly available datasets in this sector makes empirical analysis difficult. For that reason, we will use data from other sources to analyze the banking industry's response and policy approach.

2. Literature review

The first literature on online payment systems and its opportunities dates back from the early nineties when the use of internet technology usage increased. Authors of early research (Havinga, 1996; Wayner, 1997) wrote about the connection between the internet and the possibility of e-commerce, while they tried to identify the payment solutions and present a new typology of the payment systems.

Furst, Lang and Nolle (1998) were among the first authors to do research on e-payments. They analyzed the shift toward using technological innovations in the payments sector and related it with the possible implications for the banks. Furst, Lang and Nolle (1998) found that the increased developments in the electronic payments would have long-term impact on e-commerce as well as on the banking industry. They also indicated that banks faced competitive pressure and needed to invest in technological innovations. Later, Abrazhevich (2001) analyzed the classification and the characteristics of the payment systems. He stated new payment methods are needed to facilitate the further development of e-commerce. Moreover, he recommended that future systems had to be appraised by the users in the process of designing, in order to result with better acceptance by the consumers (Abrazhevich, 2001).

Furthermore, Sorkin (2001) provided insights on the payment methods that consumers used for online auctions and found that even though the cash and checks were the main payment options, people also used Internet-based payment mechanisms. Sorkin (2001) understandably concluded that online payment systems are less used because of the higher security risks involved, despite the greater convenience and speed of transaction they offered.

When it comes to research about consumers and their behavior toward the innovative payments systems, most of the literature comes from discussion papers and policy studies. Researchers have analyzed how and why consumers choose their payment methods with the

aim to obtain a better understanding of consumers' payment decisions (Mantel & McHugh 2001), (Corten, Littman, Schuh & Stavins 2006), (Schreft 2006). To analyze consumer preferences, most of these studies first conducted focus group interviews or online surveys and later tried to form interpretation of the consumers payment behavior. The results show that consumer behavior is consistent with their preferences, which is an important finding for these issues. These results have provided significant input for the formation of our hypothesis in the second chapter of this thesis, that consumers experience positive benefits from the emerging innovations in the payments industry.

On the other hand, research related to payment innovations and what kind of impact they have on retail banks shows that banks have faced increased competition as a result of the emerging innovations in the payments industry which had direct impact on banks' financial performance. Moreover, innovations pushed banks to also endorse technological advancements in the payments area as well as to stimulate their business activities (Furst & Nolle, 2004), (DeYoung & Rice, 2004); (DeYoung, 2005); (Hasan, Schmiedel, & Song, 2009). Our second hypothesis, that banks face negative effects from the increased competition, is based on the above research. In the third chapter we will analyze the biggest challenges that banks face today.

In addition, the World Bank also preforms global surveys to analyze the payment systems worldwide and foster debates on payment systems. Since 2008, the World Bank publishes the "*Payment Systems Worldwide: A Snapshot*" report. Moreover, the World Bank has the role of international standard-setter as it identifies the fundamental issues and provides policy notes and studies to authorities worldwide. By implementing them, policymakers can improve the payment system industry both nationally and globally (The World Bank Group, 2016).

Most of the recent research on fintech in payments related to consumers and retail banks is in the form of case studies and it is prepared by consulting firms such as McKinsey, Deloitte,

Capgemini and many others. The main reason for that is that their major clients are banks which are predominantly affected by the changes in this area. Hence, they provide more insights on the current market shifts and consumers' reactions to those shifts.

There is a lack research on the consumer benefits from payments offered by fintech companies. An up-to-date analysis on the contemporary payment systems will not only extend the literature but also provide new insights on consumer behavior and the challenges of the incumbent providers such as banks. Therefore, the thesis will address the above topics with the aim to assess the current developments and provide recommendations for regulators and policymakers.

3. Chapter I

This chapter is divided to four subchapters. First, we will present historical changes to payment systems and its historical evolution toward the innovative payment models we see today. It is important to demonstrate the constant evolution of the payments sector to form predictions about the future of this industry and its policy changes. Then, we will define payments and payments systems of current perspectives. The last part of this chapter will cover the important innovations and the innovators of recent years.

According to the Bank for International Settlements (BIS), financial market infrastructures (FMIs) are critical components of any nation's financial system. FMIs are multilateral systems among participating financial institutions, including the system operator, used for the purposes of clearing, settling, or recording payments, securities, derivatives, or other financial transactions (BIS, 2012). The payment systems, central securities depositories, securities settlement systems, central counterparties, and trade repositories are part of the FMIs, and the safety and efficiency of these systems may affect the safety and soundness of financial institutions (BIS, 2012). The payment system is part of the financial infrastructure, and it is important to understand its significance to a sound economy in each country.

3.1. History of the payment systems

Over the centuries, the primary medium of exchange that forms the payment system has changed many times. Increased trade among people brought the need for more convenient payment methods. The world has come a long way from the time of bartering when people were exchanging goods as a form of payment. We will not go into great detail about the history of the medium of exchange, which we now call money, but rather we will show the main points

in history that brought about societal changes and influenced economic perspectives of the system.

Weatherford (2009) argues that there have been three revolutionary changes to money, all of which transformed the nature and use of money. The first generation, according to Weatherford, happened almost three thousand years ago with the invention of coins in Lydia. The result was the first system of an open and free market. The emergence of coins together with the market created a new economic system, and it expanded around the globe slowly destroying the great tributary empires of history. The second change that Weatherford (2009) describes is the one that destroyed the feudalism and created the capitalist system, the invention of the banking system and paper money. This change started at the beginning of the Renaissance and lasted through the Industrial Revolution. It originated in the banks of Italy before the system of national banks in each country emerged. Weatherford considers *the rise of electronic money* as the most recent revolutionary change. He points out that technological changes will also create societal changes among political systems just as the two previous changes did.

In the past couple of years, people in the financial world have foreseen the possibilities that digitalization offers in the payment industry and have tried to use them. Even though cash is still the primary method for payments, in the second chapter we will focus on non-cash transactions and conclude whether or not we are at the beginning of the next financial revolution. In the next subchapter, we will define payment and payment systems from current perspectives and regulations.

3.2. Definition of payment and payment system

According to the European Central Bank (ECB), a payment is transfer of funds, which discharges an obligation on the part of a payer regarding a payee. In the transfer of funds, a payer is the party to a payment transaction, which issues the payment order or agrees to the

transfer of funds to the payee. A payee or beneficiary is the final recipient of funds (ECB, 2010). This means that each time someone purchases something, there is a need for a monetary transaction from the buyer to the seller.

Furthermore, the term “payment system” is related to the full set of instruments, intermediaries, rules, procedures, processes and interbank funds transfer systems that enables the circulation of money in a country or currency area (European Central Bank, 2010). We also want to point out that, according to ECB (2010, p.25), a payment system contains three main elements or processes:

1. **Payment instruments**, which are means of authorizing and submitting a payment (i.e., the means by which the payer authorizes its bank to transfer funds or the means by which the payee gives its bank instructions for funds to be collected from the payer);
2. **Processing** (including clearing), which involves the payment instruction being exchanged between the banks (and accounts) concerned;
3. **A means of settlement for the relevant banks** (i.e., the payer’s bank should compensate the payee’s bank, either bilaterally or through accounts that the two banks hold with a third-party settlement agent).

The payment systems also need institutions that provide payment accounts, instruments and services to customers and organisations that operate payment, clearing and settlement services (such as interbank funds transfer systems) (European Central Bank, 2010, p. 26).

There are also market arrangements, such as standards, conventions and contracts for the production, pricing and use of the various payment instruments and services, as well as arrangements for consultation and cooperation within the industry and with other stakeholders. Finally, a payment system needs to be underpinned by a sound legal basis. This includes laws,

standards, rules and procedures laid down by legislators, courts, regulators, system operators and central bank overseers (European Central Bank, 2010, p. 26).

Payment systems can differ by the type of the operator. The operator of payment systems can be classified into the “*central bank payment system*” and “*private payment system*” (Nakajima, 2012 p.12). In most countries around the world, both payment systems are used. The “central bank payment system” is a payment system that is owned and operated by the Central Bank. For example, the Fedwire in the U.S., TARGET2 in E.U., and BOJ-NET in Japan. Generally, the central bank payment system consists of deposit accounts at a central bank and a funds transfer system (Nakajima, 2012 p.12).

A payment system that is owned and operated by the private sector is called a “private payment system.” Usually, the operator is an association of banks or a user-owned company, which is sometimes called a “clearinghouse” (Nakajima, 2012 p.12). However, because of the public nature of the payment system, the operator is not a pure business corporation for making profit. Often, by taking several measures of ownership and changes in the decision-making process, the private sector operator seeks to take on a public nature. Some of the possible measures include admitting membership to the central bank, offering a seat on the board of directors to the public sector, and making the central bank the shareholder. The CHIPS in the U.S., EURO1 in the E.U., and Zengin System in Japan are the examples of private payment systems (Nakajima, 2012 p.12).

Furthermore, payment systems based on payment value can be classified as a “Large-Value Payment System” or “Retail Payment System.” The former is mainly for large-value payments, of which a typical example is an interbank fund transfer. The latter is mainly for small-value payments, which are made up of the payments of individuals and corporations (Nakajima 2012 p.14). Large-value payment systems are typically the most significant

components of the national payments system due to their potential to generate and transmit disturbances of a systemic nature to the financial sector (The World Bank, 2011).

The area of retail payment systems is where the largest differences continue to exist between higher-income and lower-income countries and between developed and developing regions (The World Bank, 2011).

There are various other classifications of payment systems, however they will not be explained in this section since they are not of significant importance for the analysis that will be covered in the following chapters.

3.3. Innovation in the payment systems

The payment industry has been transformed by quickly growing and innovative payment services in the last decade, especially over the past few years. A lot of new, non-banking startups that offer payments with different financial models, new eco-systems and lower prices for transactions have emerged. All of them increase the supply side of the payment industry. Such competition put the incumbents, banks, in a situation where they need to respond to the changes.

The new types of cashless payments, alongside credit and debit cards, are listed in the section of electronic money. A legal definition of electronic money is provided in Article 1 of the European Parliament and Council Directive 2000/46/EC on the taking up, pursuit of and prudential supervision of the business of electronic money institutions (European Parliament, Council of the European Union, 2000). According to this definition, “electronic money shall mean monetary value as represented by a claim on the issuer which is: (i) stored on an electronic device; (ii) issued on receipt of funds of an amount not less in value than the monetary value issued; (iii) accepted as means of payment by undertakings other than the issuer.” An electronic

device can be a computer or mobile phone; therefore, every transaction made from these devices counts as electronic money transactions.

It is also important to present what is considered to be an *electronic payment (e-payment)* and what is a *mobile payment (m-payment)*. E-payments are defined as payments that are made over the internet through e-payment providers or online banking. M-payments are considered as payments for which the payment data and the payment instruction are initiated, transmitted, or confirmed through a mobile phone or device. It can apply to online or offline purchases of services, digital or physical goods (European Commission, 2012). It is visible that the line between these definitions is thin, and the main difference is the device from which the payment is made.

Cashless payments offer consumers more options, convenience, and ability to adjust to each situation when they need to make payments. Consumers can use different methods for small or large payments and online or offline purchases. This also gives an opportunity for the companies and businesses to offer more than one payment method to satisfy their consumers. The key innovations are the following: First, electronic forms of payment have increased the speed of completing transactions, and it has reduced operational risks. Second, new low-cost technology allows new payment schemes to offer lower costs (Ali, Barrdear, Clews, & Southgate, 2014).

Furthermore, mobile devices (or non-mobile devices such as tablets) can process payments through a digital wallet. According to the definition, a digital wallet stores information associated with transactions, such as purchase confirmations and receipts. It can also store information for use in transactions, including information associated with one or more financial accounts, user information, and shipping information (United States of America Patent No. US 20120166333 A1, 2012). Some wallets require personal information such as ID documents and/or debit, credit, prepaid or loyalty card data. Others are specific to the combination of

software and hardware on certain devices, but all of them seek to replace the use of traditional credit/debit cards with mobile phones (ENISA, 2016 p.7).

Increased digitalization of the payment system has created the need for real-time transactions in person-to-person (P2P), person-to-business (P2B) and business-to-business (B2B) payment segments, and, for this reason, some countries have adopted real-time retail payment systems (RT-RPS). This system enables the instant transfer of funds with payment confirmation, it operates constantly and it uses high data standards (SWIFT, 2015). This system requires changes in the financial infrastructure that will modernize and improve the payment industry.

The newest wave of innovation relates to the use of new cryptocurrencies, such as Bitcoin and Ripple, but they will not be covered in this research since they require separate analysis and represent another possible area of future research.

3.4. Fintech innovators in the payment system

In the next several subsections, we will elaborate on what kind of companies offer innovative payment methods. These companies are disrupting the traditional banking sector in the field of payments, and they offer possibilities to pay through the internet, mobile devices, digital wallets, and the mobile applications that were previously explained. These innovators include both startups and corporate goliaths, such as global mobile carriers, internet giants, technology manufacturers and retailers (Weichert, 2017).

3.4.1. Retail companies

One of the most important tasks of retail companies is to build a long-term relationship with their customers and attract them to shop more often in their stores. For these reasons, retail companies introduce innovations in the payments: the aim is that customers find it simpler and

easier to pay. Companies start to offer own payment cards, digital wallets and implement e-shopping.

Innovative retail companies are mostly located in the United States, and they include Walmart, Starbucks, Dunkin Donuts and a considerable number of other companies. For example, Walmart offers in-store payments through their mobile app that has a feature called Walmart Pay, which allows faster and easier payment; it also keeps the financial information safe and secure (Walmart Pay, 2017). As stated on their official website, the consumer needs to create a profile on their website and include a preferred payment method, which can be any credit or debit card, prepaid account, or Walmart gift card. A similar payment app is offered by Starbucks, but they incorporate a loyalty program and gift offers for customers using this smartphone app. The possibility to get gift offers makes Starbucks wallet one of the most used among retail companies in the U.S. (Forbes, 2014).

Other retail companies are following the trend and trying to implement similar opportunities for their customers, especially if there is a change in consumer payment preferences.

3.4.2. Telecommunication companies

The second type of innovators competing in the payment industry are telecommunication companies. They have large customer bases, and it is easier for them to make changes and enter new markets. Telecom operators using telecommunications networks and digital wallets are trying to extend the scope of their operations and offer payments and other financial services, such as sending money or lending. They have pre-established relationships with consumers that can help them promote their new operations.

One of the best-known examples of such practices comes from the African market, a telecom company called M-PESA. This revolutionary company in Kenya was developed by the

telecom operator Vodafone and launched commercially by the Kenyan affiliate Safaricom in 2007. Since then, it has offered payments and money transfers to its customers (Mas & Radcliffe, 2010). After a customer registers in a retail outlet, he/she is issued an individual electronic money account that is connected to a phone number and is accessible through a SIM card-resident application on a mobile device (Mas & Radcliffe, 2010). Mobile transactions can be made only after the customer has available funds on the account.

According to the latest report from 2016, Vodafone M-PESA has 25 million active customers in several countries, in Africa, India and Albania, marking accelerated growth for the innovative mobile money transfer service (Vodafone Group, 2016).

3.4.3. Technology corporations

The third type of innovators are internet corporations, such as Apple, Samsung, Amazon, Google, and other internet giants. They did not hesitate long before seizing the opportunity to enter into the payment industry markets. We will slowly define more of the key system changes.

Apple created the e-payment application named Apple Pay for IOS devices, which is available on mobile, tablet and also the Apple Watch. The application requires debit or credit card information, and it grants protection over the cardholder's personal information due to the integrated security in both the hardware and the software (Apple, 2017). It allows users to pay in stores that support Apple Pay contactless payment, over the internet, within IOS applications and within the Apple Watch as of watch OS 3 (Apple, 2017).

Another company that offers a comparable method of payment is Samsung. They introduced a digital wallet in which users can incorporate several credit, debit or gift cards and later pay through the application. It also works in stores and within applications, and the

promotable feature is that with each transaction, the customer collects reward points that can be redeemed (Samsung, 2017).

3.4.4. Fintech companies

The last type of innovators in payments are fintech companies. They are mostly startups that emerged in various countries. Most of the payment platforms such as PayPal, Payoneer, Skrill, Stripe, etc., were founded in the United States. There are other companies that were founded in other countries, such as GoCardless and Transferwise in the United Kingdom; Adyen in the Netherlands; Klarna from Sweden; Ingenico from France; Tipalti from Israel; Paytm from India; and Alipay from China. The magnitude of these companies is increasing everywhere, and all of them offer fast payments over the internet and mobile phones. Mostly they are used for e-commerce. The most widely known and used among them are PayPal and Alipay, so we will only provide information about them here.

PayPal is a company that offers alternative ways to pay without using a credit card. It was founded in 1998, and it provides businesses or individuals with an email address to securely, conveniently, and cost-effectively send and receive payments online (PayPal Inc., 2017). From the statistical information provided on the website Statista.com, PayPal currently has more than 203 million active registered user accounts worldwide (Statista, 2017).

The Chinese fintech giant Alipay was created by the Alibaba Group in 2004 and currently has the largest customer base of 400 million active users who are mostly on the Chinese market (Alipay, 2017). Alipay revolutionized online and in-store payments in China, and it strives to create an open ecosystem, enabling financial institutions and partners to make rapid progress toward “Internet+” goals through its “Internet Booster Plan.” It also gives inclusive financial services to small and micro enterprises and individual consumers (AntFinancial, 2017).

4. Chapter II

The success or the failure of the innovative payment industry is directly related to consumers and whether they will use particular innovations or not. In this chapter, we will analyze consumers' approach to fintech. According to the microeconomic theory of consumer choice, consumers try to maximize the utility that they can get from one combination of goods and services for a limited amount of budget (Pindyck & Rubinfeld, 2013). Therefore, the basics of consumer theory posit that consumer behavior depends on consumer preferences, their budget constraints and consumer choices (Pindyck & Rubinfeld, 2013). Consumer preferences are formed after consumers compare all viable options available on the market and before they make their choice. Consumers also consider prices for the goods or service they need because they have budget constraints. Thus, if the price of a good or service changes, consumer choices will change. We can better understand preferences by observing what consumers choose as prices and income vary (Besanko & Braeutigam, 2014). For the consumer, it is important to maximize the satisfaction of the goods or services they use, and, for that reason, their behavior represents a valuable analysis for each company that sells goods or offers services.

The innovations in the payment industry discussed in the first chapter provide more options for consumers since as competition increases, prices for the payment services are more likely to decrease. We are interested in seeing how consumers respond to these changes and what kind of effects they face. Hence, the hypothesis in this chapter is *H1: Innovations in the payment industry have a positive effect on consumers.*

To decide whether this hypothesis is relevant we will analyze whether there is change in the behavior of the consumers in the payment industry. We are interested in seeing if there have been changes in the preferences and behavior of the consumers, whether they use innovative payment methods and how satisfied they are with them.

Most of the data that we needed to perform this analysis was not publicly available and third-parties cannot re-use it for own purposes. Thus, data sources for this analysis are survey reports that were done by consulting firms because their most valuable clients are the banks that are most affected by the changes in the payment industry. The first data source comes from Capgemini and the European Financial Management Association (EFMA). Together they performed a global study to measure the attitudes of customers toward their financial service provided by fintech and banks. The survey was conducted with more than 16,000 customers in 32 countries on their experiences across 80 touch points (Capgemini & EFMA, 2016). Other data that we will use is from the World Payment Report completed by Capgemini and BNP Paribas. It offers key information for payments around the globe based on surveys, data from the Bank for International Settlements, World Bank, Central Banks, and websites.

Most of the data available reaches the year 2015 since data outcomes for 2016 have not yet been processed and published publicly. Even though there might be some changes to the results over the previous year, that issue will be left for future researchers.

This chapter has five subchapters. First, we will analyze the trends in the non-cash transactions. Then follows analysis about the consumers and their behavior toward fintech companies. After that we will analyze the levels of trust and confidence toward fintech firms. And at the end of the chapter the security and regulation issues will be discussed.

4.1. Trends in non-cash transactions

First, we will show the latest trends in transactions that do not include cash. This is based on data provided by banks, and it does not include data from alternative payment methods such as digital wallets. In this section, it is important to note that there is increased interest when making payments without cash. The global non-cash transaction volume grew at 8.9 percent to reach 387.3 billion transactions in 2014 (Capgemini & BNP Paribas, 2016 p.5). Figure 1 below

represents the number of worldwide non-cash transactions divided by region for the period of 2010 to 2014.

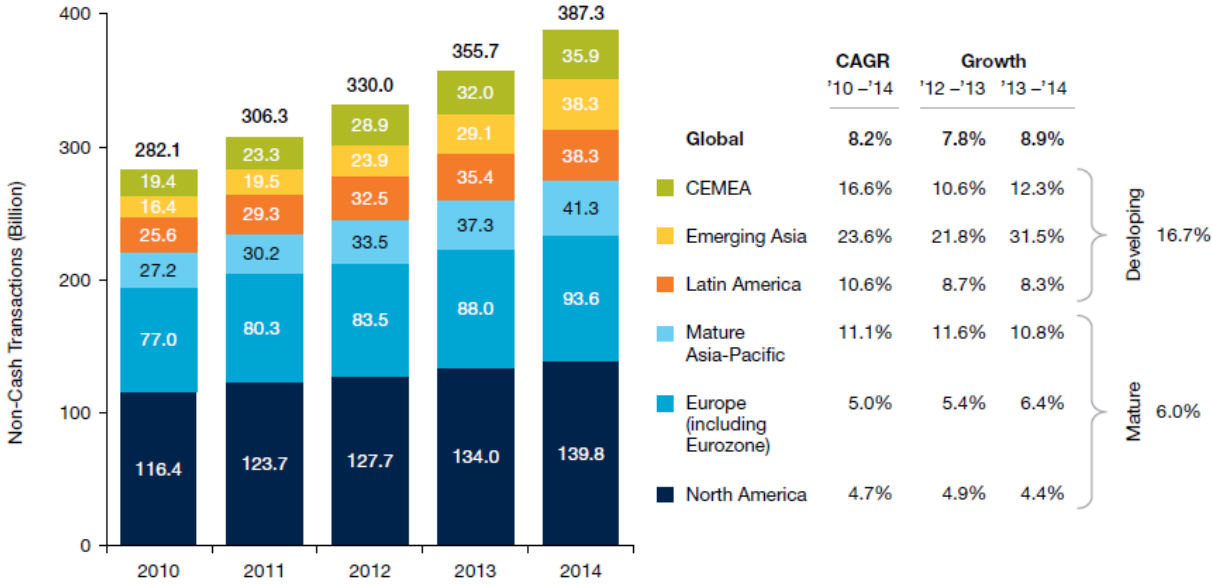


Figure 1. Number of worldwide non-cash transactions (in billions), by region; Retrieved from: Capgemini and BNP Paribas, World Payments Report, 2016.

Most of the non-cash transactions are made in developed regions such as the United States, Western Europe, and some Asian countries. China had an outstanding growth rate of 47 percent of non-cash transactions due to the excellent performance of Alipay and the entry of foreign payment card schemes (Capgemini & BNP Paribas, 2016 p.6). India is next on the list with a prominent level of growth rate of 13.4 percent in non-cash transactions, even though it is not utilizing its full market potential (Capgemini & BNP Paribas, 2016 p.6). Central Europe, the Middle East and Africa (CEMEA) region had a growth rate of 12.3 percent in non-cash transactions, mainly due to the increased use of contactless payments in the largest European markets such as Germany, France, the UK, Sweden, and Denmark (Capgemini & BNP Paribas, 2016 p.6). The growth rate in North America was 4.4 percent, which is smaller than in previous years; this may be due to the unreported and increasing share of the market taken by non-banks (Capgemini & BNP Paribas, 2016 p.7). The region of Latin America also saw a lowered growth

rate on non-cash transactions from 8.7 percent to 8.3 percent in 2014 due to political instabilities, slowing economies and lowering GDPs (Capgemini & BNP Paribas, 2016 p.7).

It is important to note that consumers in both developed and developing countries face changes to the way they pay. This constant growth of non-cash transactions shows that consumers use some digital payment methods to pay and that consumer behavior is gradually changing the payment industry.

4.2. Consumer behavior toward fintech

In the Global Survey completed by Capgemini and EFMA for the World Retail Banking Report 2016, nearly two-thirds of the customers (63.1 percent) confirmed that they use products or services offered by fintech firms (Capgemini & EFMA, 2016 p.18). That can be related to the behavior of the consumers toward fintech firms. There were two important questions in this survey:

- “Are you currently using any financial products or services from fintech firms (such as Alibaba, Apple, Google, Lending Club, PayPal, Paytm, Prosper, Stripe, Square, Zopa, etc.)?”
- “With how many fintech firms do you currently have a relationship?”

The results are shown in Figure 2. The largest number of fintech products and services are used in Latin America, where 77.4 percent of people use at least one of the fintech financial products or services. Central Europe is next on the list with 68.9 percent, followed by the Middle East and Africa at 63.6 percent. Due to the fact that the banking infrastructure is not stable in emerging markets, fintech companies provide better services and customers have better relationships with them (Capgemini & EFMA, 2016 p.18).

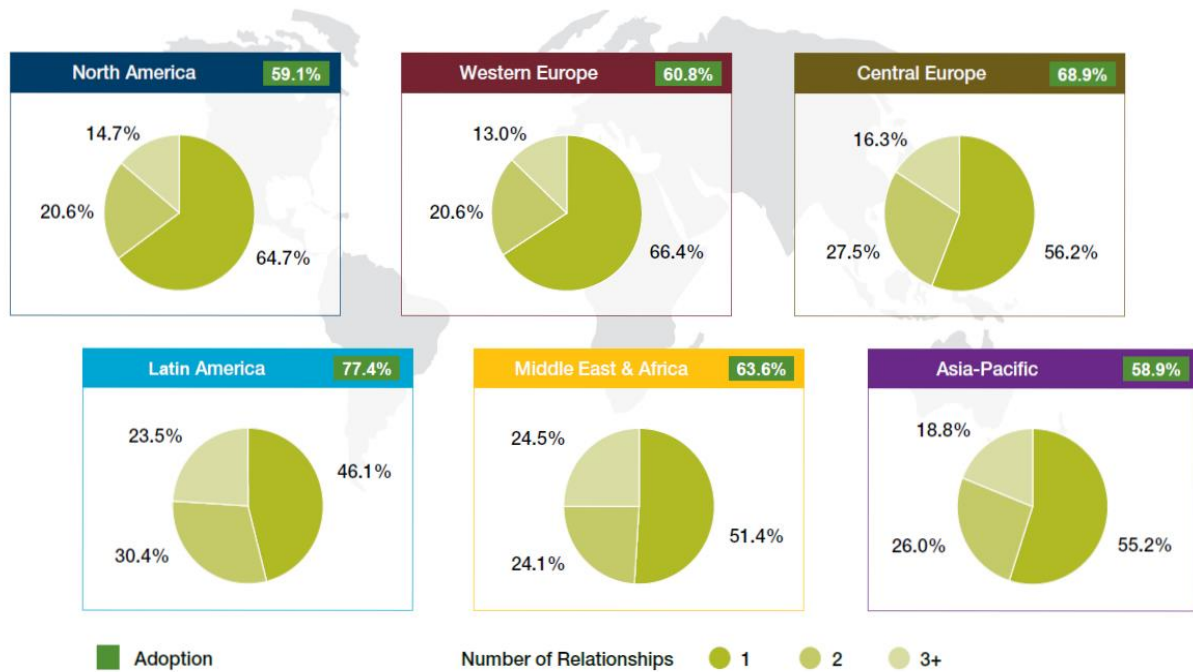


Figure 2. Banking customers' usage of Fintech firms, by region; Retrieved from: Capgemini and EFMA, World Retail Banking Report, 2016.

Another result from the survey is related to the age groups and their preferences. The age groups are divided into people born between 1981 and 2000, people born between 1961 and 1980, and people born before 1961. Most consumers that are likely to transfer to fintech companies come from the younger generations. 67.4 percent of people born between 1981 and 2000 stated that they would use fintech companies, and 55.9 percent of people older than 55 said that they would use fintech companies (Capgemini & EFMA, 2016 p.18).

From this data, it is evident that society has already established relationships with the new companies on the market and that each year the numbers trend upward. This means that consumers, especially those from younger generations, have changed their behavior and their preferred payment methods.

4.3. Consumer behavior toward trust and confidence

Customer trust and confidence in payment security is the most critical issue for fintech companies to consider. To evaluate consumer behavior toward trust and confidence, participants in the survey answered the following questions:

- “Please rate the following statements. (Please rate each criterion on a scale of 1-7, 7 being strongly agree and 1 being strongly disagree):
- I have complete trust and confidence in my primary bank;
- I have complete trust and confidence in Internet/technology firms such as Alibaba, Apple, Google Amazon, Lending Club, PayPal, Paytm, Prosper, Stripe, Square, Zopa, etc., when using banking products/services offered by them.”

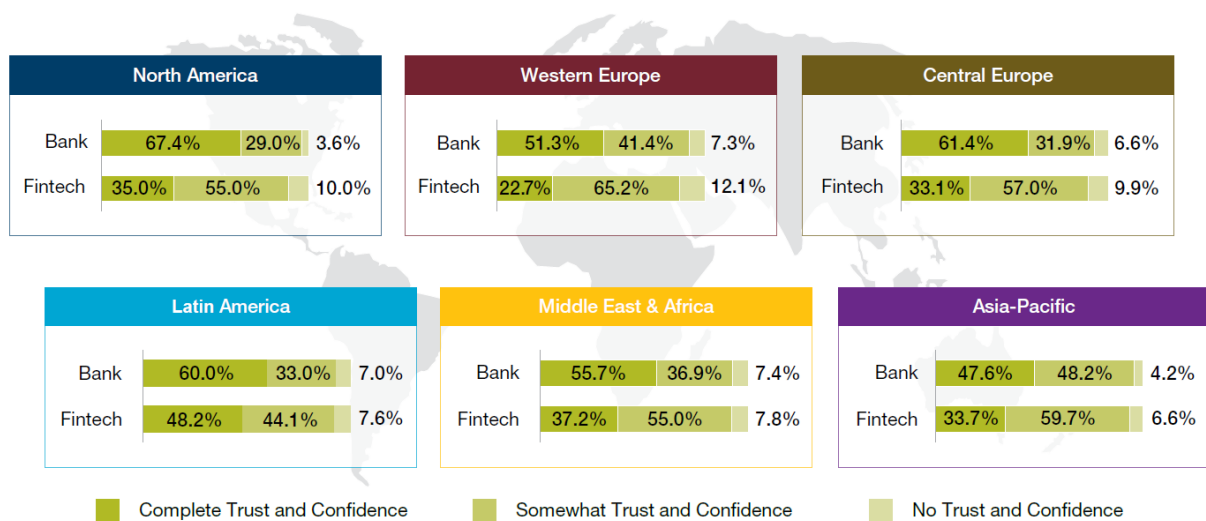


Figure 3. Customers’ trust and confidence in their primary bank vs. fintech company, by region Retrieved from: Capgemini and EFMA, World Retail Banking Report, 2016.

The results of this question can be seen in Figure 3. Even though it is evident that banks still enjoy more trust and confidence, it is clear that fintech companies are also viewed positively by consumers. In Latin America, almost half of the customers claimed to have complete trust in fintech companies, which is only 11.8 percentage points lower than trust in banks (Capgemini & EFMA, 2016 p.19). As shown in Figure 3, Western Europe has the lowest level of trust in fintech companies.

On the contrary, one of the possible reasons why there is more trust and confidence toward banks is the regulation and supervision over the banking industry. Moreover, if we compare the time that banks have existed on the market with the time that most new fintech companies have been present, it is possible to say that fintech firms have more opportunities to gain the trust and confidence of consumers in the long run. Furthermore, fintech companies are still underestimated by some of the consumers due the lack of regulations in this area.

4.4. Security and regulation issues

In most countries around the world, regulations in the payment industry allow banks to be the leaders and partially restrict the usage of innovative payments coming from other fintech companies. Moreover, security is the main issue explaining why some consumers do not use innovative payment methods. Unlike banks, these companies are not backed up by national and supranational institutions. Although there have been changes in the regulations that enable non-banks to be able to perform financial services, policymakers should take steps to solve the issue of security and eliminate possible barriers of entry.

Some countries are already taking measures to change the infrastructure of the industry and apply new regulations. It is important to review them as these regulations are the starting point for the much-needed transformation of payment regulations. For example, in Europe there has been considerable progress in integrating retail payments and in trying to ensure consumer protection.

In January 2018, the last stage of the European Directive on Payment Services “(EU) 2015/2366” will come into force (European Parliament, Council of the European Union, 2015). The aim of this directive is to provide a legal foundation for the development of an integrated market for e-payments within the EU; to provide detailed rules that will make payments easy, efficient, and secure; to avoid barriers to entry that will lead to increased competition, better

prices and greater choice for consumers (European Parliament, Council of the European Union, 2015).

The much-debated Payment Service Directive 2 (PSD2) was agreed upon and will be implemented by July 2018. It comes as a result of the increased use of e-payments and m-payments by consumers, and it seeks to make better rules for these payments. PSD2 certified a clear and comprehensive set of rules that will be applicable to existing and new providers of innovative payment services. These rules include strict security requirements for electronic payments and the protection of consumers' financial data. They will reduce the risk of fraud and guarantee safe authentication; the transparency of conditions and information requirements for payment services; and the rights and obligations of users and providers of payment services (European Parliament, Council of the European Union, 2015).

The key outcomes for consumers from this directive are extended rights, which will include reduced liability for non-authorized payments from €50 to €150; unconditional refund rights for direct debits in euros; and the removal of surcharges for the use of a consumer credit or debit card (European Parliament, Council of the European Union, 2015). Moreover, PSD2, together with Regulation (EU) 2015/751, which puts a cap on interchange fees charged between banks for card-based transactions, will lower the costs for retailers in accepting debit and credit cards.

Last but not the least, the European Banking Authority's (EBA) role will be of higher importance in e-payments, as it will develop a central register of authorized payments that can be accessed by everyone. EBA will develop regulatory technical standards on strong customer authentication. It will also secure communications channels to which all payment service providers must comply. Additionally, the EBA will assist in resolving any disputes between national authorities (European Parliament, Council of the European Union, 2015).

However, PSD2 will require Strong Customer Authentication (SCA) and it could make online purchases more difficult as it will require two or more elements of authentication. In order to increase the transaction security, consumers will be required at least two kinds of identification such as password or pin; token or card number; or voice recognition (European Parliament, Council of the European Union, 2015). The SCA might make the e-payments more difficult both for consumers and fintech companies.

PSD2 represents a regulatory change that was highly expected by the payment industry, and it will be an example to follow by other countries in order to encourage competition and secure consumers globally.

4.5. Summary

The findings in this chapter show the following:

- The number of non-cash transactions has increased over past few years, and it can be related to the use of digital payments;
- Consumers have established relationships and changed their preferences with fintech companies, yet they still demonstrate low trust and confidence in them;
- New regulations in the E.U., for example, can address the issue of payment security in the following years.

Overall, consumers have more options, and increased competition provides benefits for consumers; hence, we will accept hypothesis H1 and state that innovation in the payment industry affects consumers positively.

5. Chapter III

In this part, we will analyze the responses of the retail banking industry and how this industry is affected by the innovations and the fintech companies. Great competition in the payment industry puts banks in a position to respond to innovative services that are offered by their competitors. Moreover, the change in consumer preferences and consumer needs has had an impact on how banks will respond to the challenges. This means that retail banks should invest in innovations, research, and development so they can stay competitive and avoid losing customers. Hence, the hypothesis in this chapter is *H2: Increased competition in the payment industry has a negative effect on the payment sector of the retail banking industry.*

By saying negative effect, we mean that banks might lose current and potential customers to fintech companies; that banks might have lower profits than those that come from payment services; and that banks might need to increase the amount of money spent on innovations.

As described in the previous chapter, the data for the payment sector of retail banks is not publicly available, so we will use data from several survey reports to analyze the banks.

Banks are still the leaders in payments, but the way they operate and function has been disrupted. According a 2015 analysis completed by Deloitte, revenues from the payments that E.U. banks totaled 128 billion euros, which is a quarter of the total revenues of the banks (Deloitte, 2015 p.5). The revenues that come from the payments can be divided into several parts: 44 percent came from interest, such as credit card interest income, credit interest margins (current accounts), and float benefits (fund transfer); 35 percent of the income came from transactions, such as interchange fees from both debit and credit cards, bank transfer charges, FX spread; and the last 21 percent came from products that include annual and maintenance fees for debit cards, credit cards and current accounts (Deloitte, 2015 p.5). These revenues can

have a downward trend if the banks lose consumers, if consumers make more transactions with other payment companies or if bank fees need to be lowered because of regulations.

This chapter is organized in five subchapters. In the first section, we will review the sources of disruption that the banks face, then follows a part in which we observe how banks respond to the challenges. In the following one, the consumer experience with the banks will be assessed. The last point is going to be about the potential future of the payments offered by the banks.

5.1. Disruption to the payment sector in the banking industry

Challenges the banks face come from several sources. According to the research completed by Deloitte (2015), the most important disruptions for retail banks are:

- Technology-enabled innovations

Digitalization and technology are changing traditional banking. Traditional banking requires visits to the bank each time the customer needs a banking service, such as bill payments. It is costly and time-consuming, and customer service is slow, especially if there are long waiting lines during the banks' limited hours of operation. Therefore, traditional banking is not convenient for consumers. Internet technology has enabled consumers to obtain faster service anytime of the day, which has created different habits among consumers. Hence, the banks also need to implement internet and mobile banking, which is disrupting their traditional way of operating. The implementation of new technology and innovations is costly, and banks will need additional capital to completely transfer to digital banking.

- Regulatory interventions

Pre-existing regulations in most countries enable non-banks to perform financial services, and the emerging companies that were discussed in the first chapter possess the ability

to take away the dominant position of the banks. Furthermore, the PSD2 that was elaborated upon in the previous chapter will come into force in Europe as of 2018, increasing the electronic payment security and consumer protection. Additionally, it will encourage competition and innovation in the payment industry. These regulatory interventions are disrupting the dominance of the banks in the market.

- Changing consumer preferences

From the empirical evidence in the previous chapter, it is visible that there is already a trend toward using the internet and mobile devices for payment and that consumers are open to trying new innovations. A good consumer experience means loyalty to their service provider. If banks do not take steps toward implementation of new innovative services, they will lose customers and face lower revenues. It is evident that there is change in the demand side as consumer preferences put pressure on the banks and their productivity and cost-efficiency.

5.2. The response from the banking industry

Due to the disruptions explained above, banks are trying to respond to the challenges and alter the way in which they operate. Various novel changes are noticeable in the banking industry. Banks around world are trying transform digitally to be able to compete with innovative fintech companies. Banks have tried to respond to increased competition by creating new channels and products, adapting technology infrastructure, and implementing deep administrative changes to fit into the digitalization process (Cuesta, Ruesta, Tuesta, & Urbiola, 2016).

The banking industry has introduced similar innovations like those that have been offered by the companies with which it competes. Currently many banks offer internet services, mobile services and a digital wallet. They are trying to modernize payments while making them more secure. Despite offering services in their branches, access to banks is now available through

mobile applications, websites, and even social media (Cuesta, Ruesta, Tuesta, & Urbiola, 2016). It is important that banks implement new channels for payments because digital interaction is unavoidable. The banking industry also offers these innovative channels for other financial services and not only for payment services.

Another way that banks have responded to the challenges is by transforming their technological platforms and opening their infrastructure to new innovations and technological changes (Cuesta, Ruesta, Tuesta, & Urbiola, 2016). Most of the banks' technological platforms were old and could not efficiently carry out the digital changes that the banks had to make; therefore, the banks implemented cloud computing technology for more efficient services and the optimal operation of the resources (Cuesta, Ruesta, Tuesta, & Urbiola, 2016).

Some banks have also implemented changes to their organizational structure and operational models, the most demanding changes that banks can make to respond to increased competition. This is a way to simplify the procedure of decision-making and orientate strategies toward customers (Cuesta, Ruesta, Tuesta, & Urbiola, 2016). This is a change that can transform the banking industry as there will be fundamental changes to most aspects of the organization and its operation.

5.3. Consumer experience with banking services and channels

Banks offer services through several channels. These channels are branches, the internet, mobile devices, and social media. Using data from the Global Survey carried out by Capgemini and the EFMA for the World Retail Banking Report 2016, we will describe the customer experience that consumers have while using some of these banking channels. To see how satisfied consumers are by the services offered by banks, surveyors asked the following question:

- “How often do/will you use the following channels for your banking needs? Never, A couple of times a year, Monthly, Weekly or Daily.”

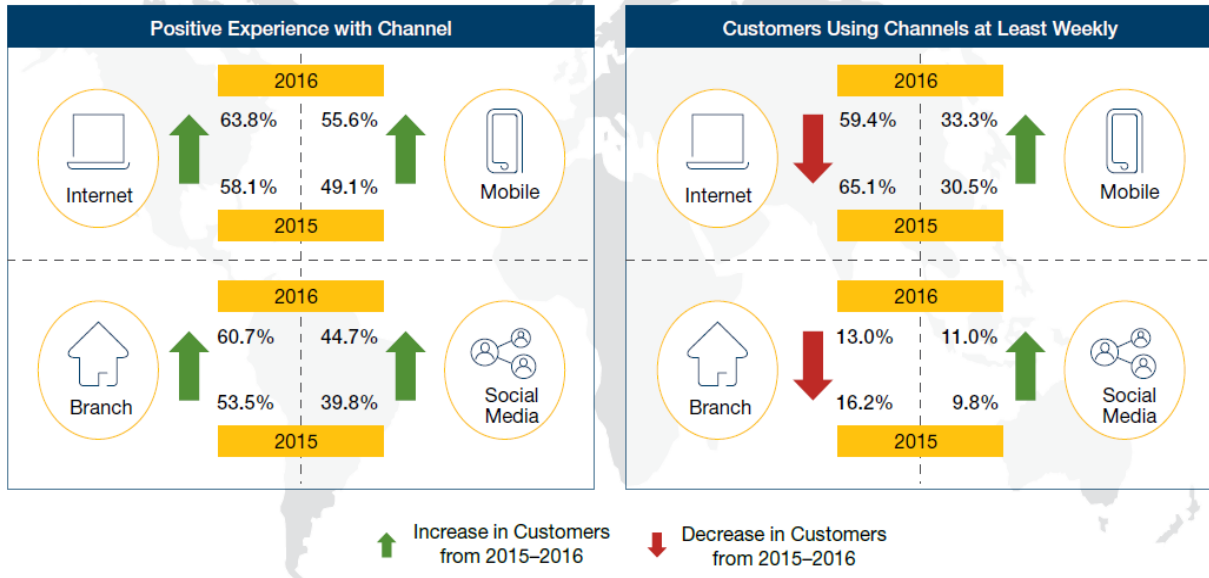


Figure 4. Changes in channel experience and usage (%) 2015-2016; Retrieved from: Capgemini and EFMA, World Retail Banking Report, 2016.

From the results, illustrated in Figure 4, it is visible there were changes in consumer behavior in the results from 2015 and 2016. There is an increased usage of mobile banking, up from 30.5 percent in 2015 to 33.3 percent in 2016, and there is a higher positive customer experience that is associated with mobile devices. That means that consumers tend to be satisfied with the mobile banking options that banks have been promoting. Even though the increased usage of social media as a banking channel was small, the usage of this channel increased from 9.8 percent in 2015 to 11.0 percent in 2016. Also, its positive experience index experienced an upward trend. The most widely used access point to banks, the internet, faced a decrease from 65.1 percent in 2015 to 59.4 in 2016 in its usage as a banking channel. Despite the lower tendency for consumers to use this channel, their consumer experience increased from 58.1 percent in 2015 to 63.8 percent in 2016. The usage of branch offices also decreased from 16.2 percent to 13.0 percent between 2015 and 2016. Similarly, like the internet channel,

customer experiences improved for this channel as well. The decrease in consumer usage of bank branch offices and the internet is probably because of the increased usage of mobile devices and social media as a channel to the banks.

Another critical issue for banks is the trust and confidence that consumers have in them. In this survey, there was a question connected to that issue:

- “Please rate the following statement (Please rate each criterion on a scale 1-7, 7 being strongly agree and 1 being strongly disagree) – I have complete trust and confidence in my primary bank.”

Only 54.5 percent of customers worldwide have trust in their primary bank, which may be an issue for the banks. Customers in North America have the highest level of trust and confidence, at 67.4 percent, while the lowest level is 47.6 percent in Asian-Pacific countries (Capgemini & EFMA, 2016).

The results from the customer experience index and trust and confidence index are presented together in Figure 5 below.

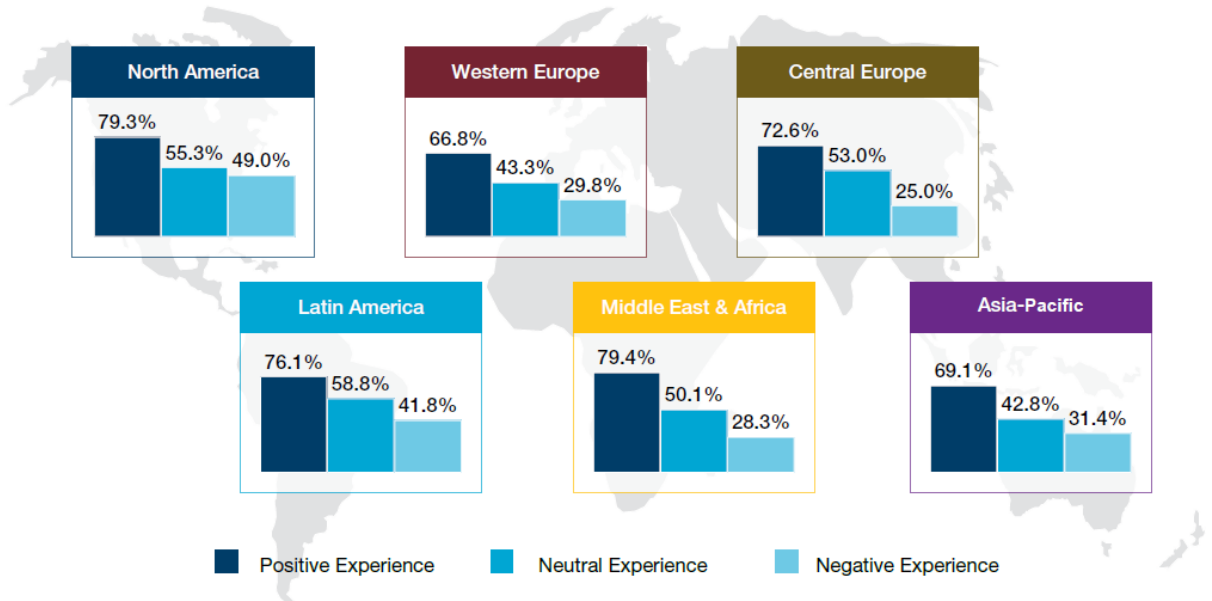


Figure 5. Customers with positive, neutral, and negative experiences having high trust and confidence in their primary bank, by region (%), 2016 Retrieved from: Capgemini and EFMA, World Retail Banking Report, 2016.

It is shown that customers who stated that they have had a positive experience while using bank services have the highest level of trust and confidence in their bank. Those who declared having a negative experience while using bank services showed the lowest level of trust and confidence in banks. Banks in North America and the Middle East have the highest level of trust and confidence from customers who have had positive experiences with their primary bank; those regions are followed by Latin America and Central Europe. Customers from the Asia-Pacific region and Western European countries showed the lowest level of trust and confidence in banks, among those who stated having a positive experience while using bank services.

From these results, we can conclude that the innovations that the banks are implementing, such as internet, mobile and social network channels, have been accepted by their customers and that they have had positive experiences while using them. Trust and confidence is an issue for banks, and customers are more likely to use another bank or non-bank company in the future if they do not trust their primary bank.

5.4. Future of the banking industry related to payments

With more innovation coming from other industries, the banking sector is forced to fight back and to respond on several fields, including payments. In the Global Survey completed by Capgemini and the EFMA for the World Retail Banking Report 2016, there are also questions for the retail banking executives to evaluate their perceptions of fintech companies. The two main questions that interest us are the following:

- “How do you view fintech firms – as a competitor, a partner, or irrelevant? (Please choose the applicable option)”
- “What is your strategy to compete in the evolving banking environment from the perspective of competition from fintech firms?”

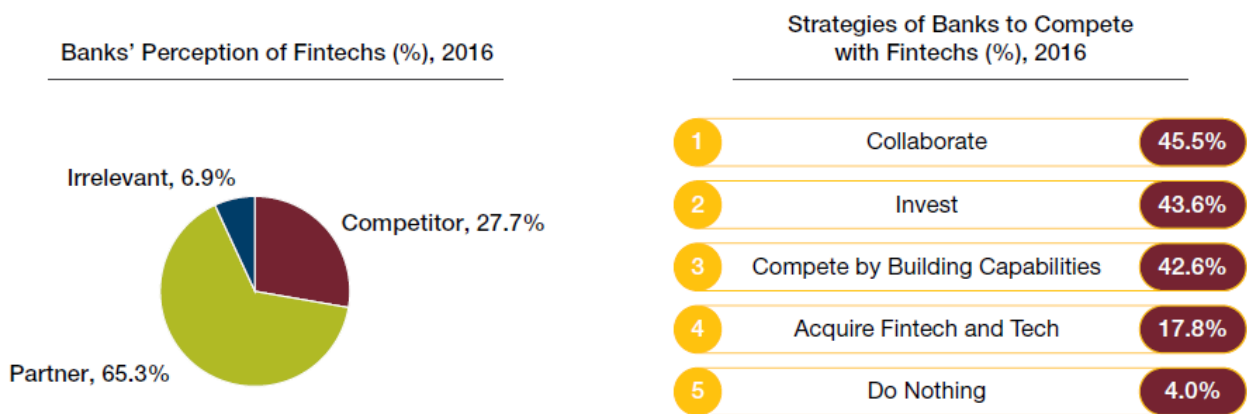


Figure 6. Banks' Perception of Fintech and Strategies of banks to compete with Fintech (%), 2016 Retrieved from: Capgemini and EFMA, World Retail Banking Report, 2016.

The results presented in Figure 6 are slightly surprising because more than half of the respondents, 65.3 percent, stated that banks see fintech companies as partners, while 27.7 percent of banks view them as a competitor and only 6.9 percent consider fintech businesses to be irrelevant. From these results, we can expect cooperation between fintech companies and banks to emerge in the near future, especially from banks that do not want to take risks and compete with fintech companies. That is because many of the banks, 45.5 percent, state collaboration is the primary strategy they will use to compete with fintech companies. The second strategy, which 43.6 percent of the banks consider useful, is to invest in fintech companies and use the benefits for their future success. In the case of competing with fintech by building capabilities, 42.6 percent of the banks stated that this would be their strategy. Only 17.8 percent of the banks think acquiring fintech is the best solutions to compete with them, and 4.0 percent of the banks will not do anything to compete with them.

The cooperation of some banks and fintech will be beneficial for consumers as they can have more trust and confidence that payments will be more secure and convenient.

5.5. Summary

In this chapter, we analyzed retail banks and the competition they face from innovative companies. In order to meet the demands from consumers and protect and increase their consumer base, banks need to increase investments in innovations, improve the trust and confidence from their consumers and possibly cooperate with fintech companies. Therefore, we will accept the hypothesis of this chapter by stating that the dominant position of the banks in the payment sector has been disrupted and affected banks negatively. This is driven not only by competition in this field, but rather by the needs and behavior of consumers as well. This additionally confirms the hypothesis from the previous chapter that consumers are the ones who have received greater benefits from both higher competition and the banks' response.

6. Conclusion

The objective of this thesis was to examine the effects created by the innovative payments industry players toward both, consumers and banks.

First, we analyzed the changes to the supply side in the payments sector. Thanks to the digitalization, suppliers of payments services now offer e-payments and m-payments. Payment service providers are retail companies, telecom companies, technological giants and fintech companies.

Secondly, we analyzed the demand side as well, in order to conclude whether the increased competition has positive effects on consumers. We discovered that there have been changes in the consumer behavior. Although there is an increased use of innovative payment methods, the trust and confidence remain low. Therefore, we concluded that the issue of trust and confidence can be solved by implementing new regulations that will strengthen the payments infrastructure.

Third, we analyzed the retail banks to see if they have experienced negative effect from increased competition. We found that the dominant position in the payments that banks used to enjoy is being disrupted. Banks are challenged to respond to the changing landscape. They need to meet the increasing needs for digital services of their customers, and to provide fast and reliable services to be able to compete with fintech companies.

Overall, despite the data limitations for this research, we conclude that the increased competition in the field of payments is associated with positive outcomes for the consumers and negative consequences for the banks. These findings are in line with the results from previous literature (Corten, Littman, Schuh & Stavins 2006), (Schreft 2006), (DeYoung & Rice, 2004), (Hasan, Schmiedel, & Song, 2009). Fintech companies triggered changes in both,

demand and supply of the payment industry. For this reason, we believe that we are at the beginning of another financial revolution, as Weatherford (2009) already suggested.

As fintech business models are only at the beginning of the business cycle, future research in this area is necessary to provide more insights.

7. Policy Recommendations

The payment systems are vital for both, the overall financial infrastructure and the daily operations of financial systems. Sound regulation and effective supervision in the payments area are a “must” for financial stability of every country.

Our research clarifies that the main issue for the consumers is the security of payments, and for that reason there is little trust and confidence in the innovative payments. Consequently, policymakers should take further initiatives for changes in the regulations in this field.

Financial regulators are well-aware of the increased use of the innovative payment methods. In some countries, policymakers make the first step to create own initiatives for regulatory changes. In countries that have considerable number of innovators in the payments sector are actively working to reshape their financial regulatory framework. The new Payment Services Directive that was adopted by the European Union provides an example for other regions on how to tackle modern challenges which arise from the adoption of new technologies. Consumers need higher protection standards and this directive addresses some of them.

Policymakers should take into account the following policy recommendations:

- There is a need to adapt the existing financial regulations which would embrace the development of innovative payments solutions. A new prudential regulation should foster financial security and support the development of new business models in the payment industry;
- Banks and fintech companies should be differently regulated. The regulation needs to prevent any entry barriers and create more competitive environment. Competition is crucial for quality services;

- Regulators should ensure High consumer and data protection together with risk management policies. Such policies will contribute to more secure transactions, and higher transparency.

These policies can be achieved only by regular discussions between regulators, companies, and consumers. Complex regulation is not a helpful solution for the potential problems but rather policies that can be adopted by all market player. High level of security can be achieved through minimizing risks, informing the consumers on the potential threats and constant supervision of the payment system.

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