KAPITEL 2 / *CHAPTER 2* [3]
FINTECH, INSURTECH, REGTECH INDUSTRIES AND THEIR IMPACT ON THE GLOBAL FINANCIAL SYSTEM

DOI: 10.30890/2709-2313.2024-31-00-033

Introduction

The financial market has changed substantially in recent decades, and technological innovation has eroded the boundaries between financial products and services and the parties providing them. The digitization and global spread of the internet (social and business environment) has had an unprecedented impact on the financial system. FinTech start-ups are using these opportunities to reach their customers through new technical possibilities, to inform them and then offer them financial services - which are both more efficient and transparent.

Also, with the growth of new FinTech companies, the market share of existing financial intermediaries decreases. So the FinTech revolution is affecting banks in particular, which need to take steps to combat competition.

At the local level, globalisation and digitalisation of the financial system is a key factor in the development of the banking system in the Republic of Moldova. It contributes to the improvement of the banking regulatory and supervisory system and at the same time to the spread of innovative banking products on the domestic banking market.

The given study focuses on the business models introduced by Fintech, Regtech and Insurtech industries developed globally, the technologies behind these startups and the impact of their global application on the financial-banking system. The digitisation of the economy has for years been the driver of progress and efficiency for many industry sectors. The global financial crisis of 2008 has spurred the digital transition, particularly in the financial sector, where technologies have paved the way for sustainable development and social sustainability. This phenomenon has been intensified by the spread of the Covid-19 pandemic, which has emphasised the need for digital transformation in many sectors of the economy.

[3]**Authors:** *Pisaniuc Maia, Jitaru Dorina, Ulinici Adrian*

I. Technological progress in the financial system has been spurred by the development of fintech, which gained public interest in the early 2000s when the first digital financial service providers emerged. Most of these subjects have become the tech giants that have changed people's everyday lives.

In the literature, the concept of "Fintech" refers to new industries that rely on innovative technologies and new business models to provide alternative financial services to the traditional sector (OECD, 2018) [OECD "Financial Markets, Insurance and Private Pensions: Digitalisation and Finance", 2018]. In general, by fintech we mean the process of financial innovation leading to new business models, applications, processes or products in financial markets, for financial institutions and for the ways in which financial services are delivered[Thakor Anjan "Fintech and banking: what do we know?", Journal of Financial Intermediation, 2019]. The Basel Committee on Banking Supervision has also endorsed this view.

Vendors operating in this area are usually niche companies, exploiting technology opportunities not yet exploited by traditional financial companies. Their solutions cover a wide range of financial products and services, from payments and lending to insurance and investment. Thus, depending on the field in which they operate, several sub-sectors have emerged, such as: digital payments (PayTech), banking (BankTech), insurance (InsurTech), wealth management (WealthTech), regulatory implementation (RegTech), creation of marketplaces, etc [E. Dijmărescu "International financial system in drift?", Bucharest: Editura Centro de Informare e Documentare Economica, 2019].

The evolution of Fintech has unfolded in three stages, summarised in Table 1.

Between 2007 and 2008 a confluence of factors provided the impetus for the emergence of Fintech 3.0 in developed countries. The global financial crisis had a negative impact on banks' profitability and competitiveness, and the ensuing regulatory measures led to a significant increase in compliance costs while limiting access to credit. Moreover, the crisis has been the cause of downsizing in the financial system, leaving many professional specialists to apply their skills in new 'outlets'. The key differentiators of Fintech 3.0 are the rapid pace of technology penetration and the

Table 1.1. Classification of Fintech stages

Period	1866-1968	1968-2008	2009- Prezent	
Stage	**FinTech 1.0**	**FinTech 2.0**	**Fintech 3.0**	**Fintech 3.5**
Target area	Developed countries	Global	Developed countries	Developing countries
Key players	Infrastructure	Banks	Start-ups	
Change factor	The globalisation process	Information technologies	The 2008 financial crisis	Market reform

Source: „Fintech and Regtech in a nutshell, and the future in a sandbox", Douglas W.Arner, J. Barberis, Ross P. Buckley, CFA Institute Research Foundation, 2017[4]

replacement of traditional financial intermediaries with Fintech layer-ups. These have created an aggressive competitive environment for banks, which have had to revise their business plans to stay in the customer's sights.

Moreover, market intervention by national, government or banking authorities encourages Fintech development through regulations that oblige banks to provide access to their servers for Fintech companies. A telling example of this is the European Union: in October 2015, the European Parliament approved a revised Payment Services Directive, known as PSD2 (Payment Service Directive 2).

The new regulations aim to promote the development and use of mobile payments through open banking, known as "open banking". In addition, they oblige banks to allow companies developing banking IT solutions to have access to their payment infrastructure - application programming interfaces (APIs), and customer information, including account transactions (payments and receipts). The dynamics of the changes taking place in the international financial system require mature regulatory and supervisory solutions. The integration of technologies into the financial system exposes

[4] „Fintech and Regtech in a nutshell, and the future in a sandbox", Douglas W.Arner, J. Barberis, Ross P. Buckley, CFA Institute Research Foundation, 2017

Table. N2 The analogy between bank functions and financial technology solutions

Traditional bank functions	FinTech-specific financial products and services
Intermediation of credit operations	Crowdfunding
	Peer-to-peer lending (P2P lending)
	Crowdlending
Settlement and payment	Money transfer services (Qiwi, PayPal, Alipay, etc.)
	Blockchain
Creation of payment instruments	Issuing cryptocurrencies
Asset and investment management	Crowdinvesting
	Solutions for managing your personal finances
Consulting	

Source: Elaborated by the author

industry participants to numerous risks, requiring strong oversight of key vulnerabilities and data portals. In addition, regulators need to adjust their policies in line with new market conditions, characterised by the spread of fintech companies and the development of new business models. The need for an adequate, automated and continuous regulatory system that ensures transparency in the way regulatory requirements are implemented and managed has led to the emergence of Regtech.

According to D. W. Arner, J. Barberis and R. P. Buckley, Regtech should not be analyzed as a subcategory of Fintech, but rather as a separate phenomenon [D. W. Arner, J. Barberis and R. P. Buckley "Fintech and Regtech in a Nutshell, and the Future in a Sandbox", The CFA Institute Research Foundation, 2017]. While Regtech has progressed most in the financial sector, it can be a solution for any regulated industry, including healthcare, energy, transportation, tourism, etc. From a financial point of

view, Regtech is concerned with regulatory compliance activities, i.e. the bank's internal processes and systems designed to ensure compliance with the requirements of the legislation [F. Georgescu "Transformations in the banking sector induced by new technologies", Institutul Bancar Român, 2018]. Through Regtech solutions, financial service providers can more efficiently manage the increasingly complex requirements of prudential compliance by developing automated processes. With the help of these tools, it is possible to prove and verify at any time that regulatory requirements have been met. Regtech enables banks to digitise reporting and compliance processes, which usually involve manual data entry and verification. These requirements are particularly relevant in the areas of preventing and combating money laundering, combating terrorist financing, fraud prevention and detection, credit risk assessment, personal data protection and information security. The use of technology also helps to reduce the risk of human error.

Thus, RegTech solutions provide transparency and consistency, standardise processes covered by specific regulations and deliver higher quality data, information and reports at lower cost.

Table Nr.3. Advantages of RegTech

Micro-level benefits	Macro-economic benefits
- Reduced operational costs - Saving time needed to fulfill regulatory requirements; - Increase accuracy and precision of compliance processes; - Increased transparency; - Real-time data monitoring; - Improving the customer experience by delivering faster and more efficient compliance solutions and offering more innovative and personalized financial services. reduced operational costs	- Increased economic efficiency; - Increased financial inclusion; - Financial stability: regtech helps reduce compliance risks and improve transparency and integrity of the financial system; - Reduced risk of fraud; - Improved international compliance; - Sustainable financial system. -Increased economic efficiency;

Source: *Prepared by the author*

Global financial regulation has evolved primarily in response to crises. In essence, the implementation of wide-ranging and far-reaching regulatory reforms has been a spur to IT evolution and has prompted financial institutions around the world to invest

in improving their own adaptability. Thus, Regtech 1.0 (1967- 2008) laid the foundation for technology solutions that focus on internal risk management and monitoring. Compliance costs have been a strong economic driver for the development of more efficient risk management systems, spurring large financial institutions to turn to innovative techniques for managing their own internal processes, governance and control.

The adoption of Regtech by financial institutions has prompted regulators to develop information technologies to streamline data management and improve market oversight capacity. This is a fundamental element of what we call "Regtech 2.0". Artificial intelligence (AI) and deep learning These are just two examples of new technologies that demonstrate the potential for automating personal data protection, market surveillance and prudential regulation. According to A. Suresh, there are numerous areas of Regtech intervention, shown in Figure x. [A. Suresh "RegTech: A new disruption in the financial services space", www.pwc.in]

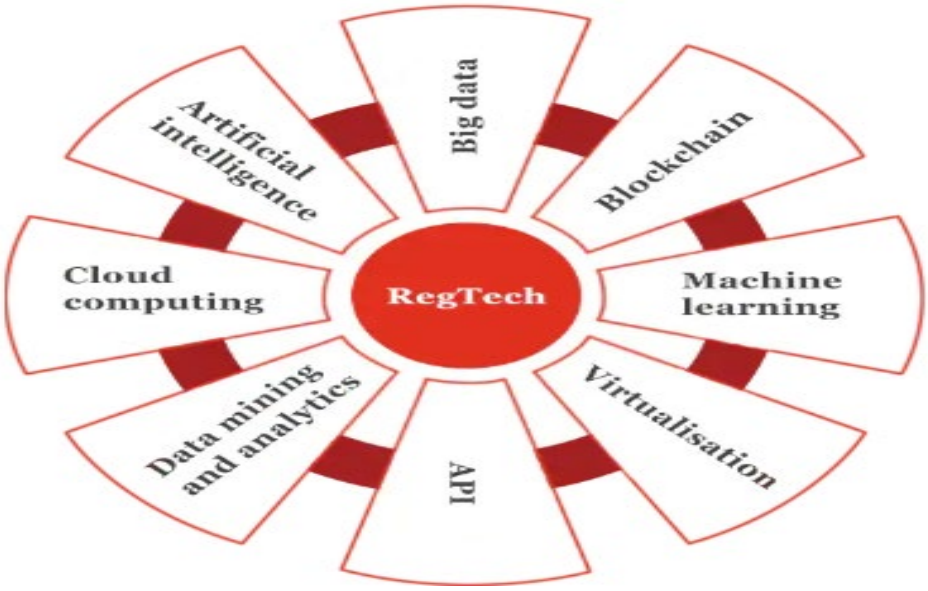

Figure N2. Areas of Regtech intervention
***Source**: A. Suresh, „RegTech: A new disruption in the financial services space", www.pwc.in*[14]

In general, Regtech can be applied to any aspect of the financial system that requires monitoring and compliance with specific regulations and laws:

1.Anti-Money Laundering (AML) and Know Your Customer (KYC): regtech can

be used to help monitor transactions and verify customer identity to prevent money laundering and terrorist financing.

2.Personal data protection regulations: regtech can be used to ensure compliance with GDPR (General Data Protection Regulation) and similar regulations for the protection of personal data.

3.Financial transaction regulations: regtech can be used to monitor and report on financial transactions, including MiFID II (Markets in Financial Instruments Directive) and EMIR (European Market Infrastructure Regulation) regulations.

1. Operational risk regulations: Regtech can be used to help identify and manage operational risk in financial institutions, including Basel II and III regulations.

2. Credit risk management regulations: regtech can be used to help monitor and manage credit risk in financial institutions, including Basel II and III regulations.

3. Compliance regulations: regtech can be used to help monitor and ensure compliance with a variety of financial regulations and laws, including Dodd-Frank and MiFIR (Markets in Financial Instruments Regulation).

4. The technology revolution could not bypass the insurance system. Because of its complexity, highly regulated nature and the profitability of incumbents, the insurance system has not embraced innovation over the past 300 years. However, declining customer satisfaction has highlighted that traditional business models are failing to meet growing expectations and needs. Today, under the influence of new technologies, the insurance industry is facing a 'disruption' in the way it operates. In this segment of the financial sector, the digital revolution started later, but even more intensely in relation to banking and capital markets.

In the literature the concept of "Insurtech" is defined as "an insurance company, intermediary or specialist in the insurance value chain segment that uses technologies to compete with, or provide value-added benefits to, the insurance industry (Sia Partners) [Sia Partners "Insurtech: A new Path for Digital Capability Development", 2016]".

In other words, Insurtech companies are mainly start-ups, taking advantage of new technologies such as advanced data analytics, Big Data, artificial intelligence and the

Internet of Things to reduce costs and provide insurance services tailored to customer requirements. The business model promoted by Insurtech is based on customer centricity, customised product creation, full process automation and data-driven decision making. Although technologies have been invested in the insurance industry for decades, the term "Insurtech" only came into use in 2011, and only became widely known in late 2015. Around the same time, the first global Insurtech accelerator, called Startupbootccamp, was launched in London, providing start-ups with funding and mentoring. During 2016 the importance of the term Insurtech grew irrevocably and caught the attention of insurance professionals around the world. Undoubtedly, the term Insurtech will remain a highly researched topic for the foreseeable future.

According to the World Economic Forum report (2015) [World Economic Forum. The Global Competitiveness Report. Geneva, 2015: World Economic Forum] technology development will have a greater impact on the insurance market than on other financial institutions (banks or capital markets).

Rajeev Shrivastava, CEO of the insurance company "Visitors Cover- Age" argues that insurtech is now developing beyond technologies and contributing to the restructuring of the industry as a whole and the development of new business models involving viable solutions [Shrivastava R. "The future of Travel in The Post Covid World", 2020].

Differences between the services of insurance companies and start-ups based on Fintech Insurtech companies focus on improving insurance products through technologies such as Blockchain, Internet of Thigs, Artificial Intelligence. Thus, service providers tend to meet the needs of consumers continuously by offering a diversified portfolio of insurance products.

Digital innovations affect most activities in the insurance industry, including value chain, product development, sales and distribution, pricing, asset-liability management and risk management.

Table N3. Differences between insurance company services and fintech-based start-ups

Features	Insurance Companies	Start-ups
The main purpose of marketing activities	Product is the key to attracting customers. The focus is on offering a better product than your competitor.	Attracting customers is process-based. The focus is on providing the best inbound experience.
Type of seller-customer communication	Indirect communication	Direct communication
Approaches to service delivery	It focuses mainly on the product and its development. Product distribution is secondary	It tries to promote/disseminate product information to the right people at the right time and place.

Source: Prepared by the author

Regtech and the impact on financial regulation. The digital revolution has remarkably influenced all areas of human activity. Fintech is having a global impact on the provision of financial services, putting digital transformation at the top of the agenda of most institutions around the world. Unlike other sectors, the financial environment is characterised by vast amounts of data and multiple regulations. Today, data is becoming the "new gold" and effective data collection, governance and analytics are becoming an essential attribute of successful institutions. As a result, Regtech is the viable solution for financial market participants and regulators to ensure the stability, efficiency and safety of the system.

Investment in RegTech has grown considerably in recent years, reaching $8.5 billion in 2019 - almost doubling compared to the previous year. At the same time, the number of transactions doubled in 2019, increasing from 164 to 317

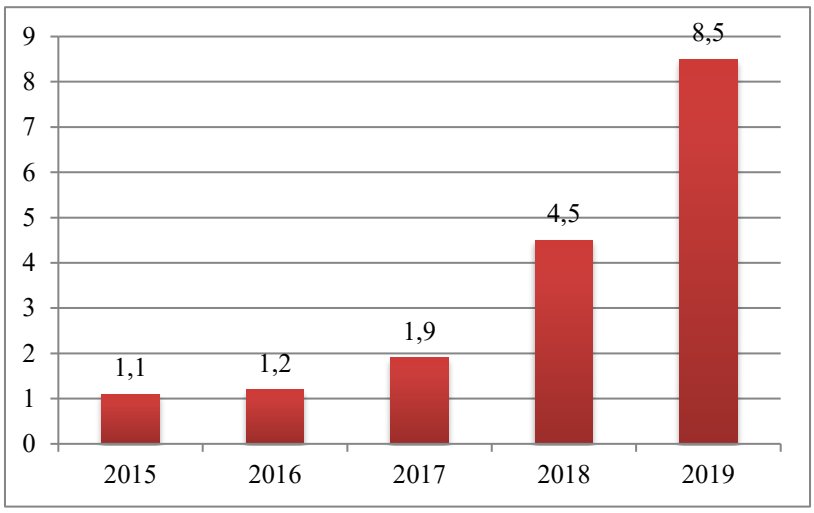

Figure N4. Evolution of global investment in RegTech (2015-2019), USD billion
Source: Elabored by the author based on data www.nasdaq.com

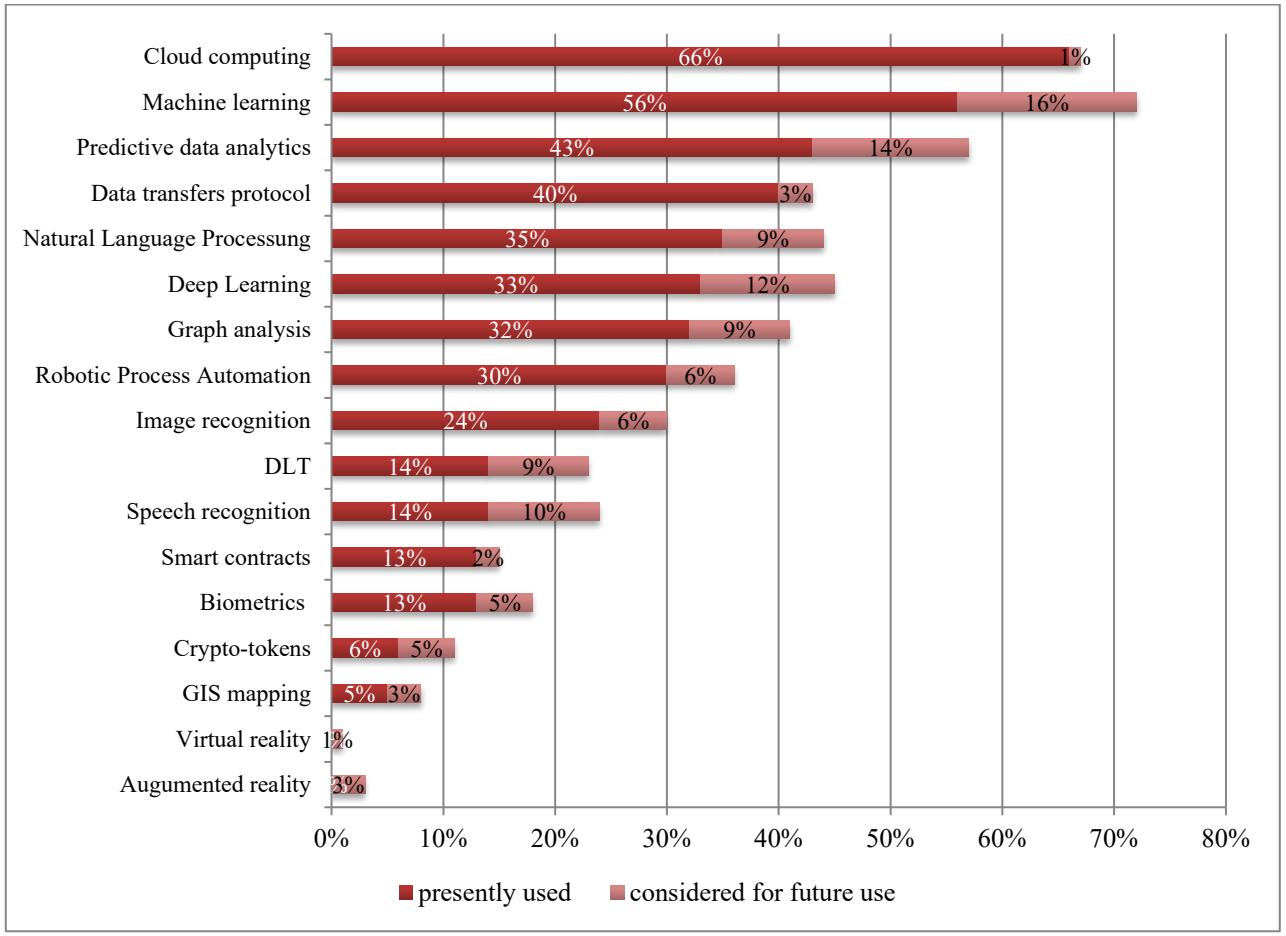

Figure Nr.5. Technologies and tools used by Regtech firms
Source: Elabored by the author based on data „The Global RegTech Industry Benchmark Report", University of Cambridge[5]

[5] E. Schizas, G. McKain, B. Zhang, A. Ganbold, P. Kumar, A. Huang, J. Garvey „The Global Regtech Industry Benchmark Report", University of Cambridge

Regtech involves a wide variety of technologies (Figure 5). Among them we list: Big data, Blockchain, Machine Learning, Virtualisation, API, Data mining and analytics, Cloud computing, Artificial Intelligence.

About two thirds (66%) of Regtech startups offer services through Cloud computing technology, 56% involve Machine Learning and 43% use data mining and analytics to assess behaviours and prevent fraud. Machine learning and data analytics technologies are expected to grow considerably and could be used by almost ¾ of Regtech service providers.

II. Following the global financial crisis in 2008, there was a 500% increase in regulation in the financial and banking sector. In addition, banks are paying fines of up to $10 billion for non-compliance with anti-money laundering (AML) regulations. Overall, banks incur up to 60% higher operating costs to comply with regulations. In this respect, artificial intelligence (AI) has the potential to play a prominent role in better data management.

Artificial Intelligence (AI) is a branch of computer science that focuses on creating machines and systems that can simulate human intelligence and learn from experience. These systems are programmed to process and analyse data, learn from patterns and make decisions based on them.

The benefits and possibilities that new technological advances bring are immense and certainly beyond our imagination. However, innovations come with challenges and dangers. This is especially true in the field of RegTech. The most popular companies in Regtech, according to Reuters rankings Chainalysis, Comply Advantage, Ascent Regtech, Forter, Hummingbird, Continuity, Trunomi, Ayasdi, Sift Science, Elliptic, BehavioSec, all based in the US. If we look at the founding years in 2014. RegTech is based on algorithms, machine learning and artificial intelligence, which can be vulnerable to errors. While humans are sure to make mistakes based on insufficient data and false premises, we have the ability to understand the nature of the information we use for our decisions and interpret it critically. A computer, however, cannot understand that the data it works with is flawed. This can lead to making incorrect decisions or ignoring important information. This may change in the future as

technology advances, but for now the responsibility falls on humans.

Information technologies are causing irreversible changes in the financial system, gradually taking over its traditional functions. Companies are changing the way they operate to respond in a timely and efficient way to their customers' needs, increasingly involving mobile phones and devices.

The payments sector of the financial industry is evolving in an unprecedented way, with new payment types, tools, platforms and providers being launched. This has caused a reduction in the role of intermediation and the migration of consumers to new companies offering innovative and attractive payment solutions. It will also change the business model of traditional banks. The financial industry will undergo some changes.

One of the main categories in the field of payment, clearing, settlement and cryptocurrency services is digital currency (also called virtual currency, e-money or e-currency). Digital currency is a book balance or record stored in a distributed database on the Internet, electronic computer database or digital files, and which can be used for various transactions or payments, or held as assets for future transactions.

Examples of virtual currencies include cryptocurrencies, central bank digital currencies and electronic cash. These currencies have no physical form, are not issued by a central authority or government and are created and transferred through complex computational processes. They can be used for online transactions, money transfers or investments. Some argue that digital currencies can offer more privacy and security in transactions than traditional currencies and reduce the cost and time needed to transfer money.

Fintech's biggest innovation in the payments sector is the emergence of cryptocurrencies. Bitcoin, launched in 2009, is the world's most popular and widely used cryptocurrency. It is a digital computer code, issued cryptographically and which can be stored in an electronic wallet in cyberspace.

Bitcoin uses blockchain technology to record and verify transactions, which allows for transparent record keeping and prevents double spending. Users can also maintain anonymity in their transactions as they do not need to reveal their identity. Bitcoin's price is highly volatile, fluctuating according to supply and demand in the

cryptocurrency exchange markets. Many people buy bitcoin as an investment, speculating that the price will rise over time. It can also be used to shop online or transfer money internationally, without having to go through intermediaries such as banks or payment processors. While bitcoin was the first and best known example of cryptocurrency, there are many other digital currencies in existence today, each with their own specific characteristics and uses. Among them we mention: Ethereum (ETH), Litecoing (LTC), Ripple (XRP), Tether (USDT).

Today cryptocurrencies can provide solutions for those seeking funding for various projects. ICO (Initial Coin Offering) is a fundraising method whereby cryptocurrency developers (companies or start-ups) sell tokens to investors, who become part of the project. In this way investors take a risk, as there is no guarantee that the project will be successful and that the value of the tokens will increase. Investors can withdraw from the project by trading the purchased tokens on a secondary market.

A mobile wallet (also known as an electronic wallet or e-wallet) is a software application that allows users to store, manage and transact with different types of currency (including cryptocurrencies and traditional currencies). Users can upload funds to their mobile wallet via bank transfer, credit card or other payment methods and then use these funds to make payments. Mobile wallets are apps that can be installed on mobile devices such as smartphones and tablets, and some can be accessed via a web browser. They can also be secured with various authentication mechanisms, such as passwords or fingerprints.

When a user makes a payment to a merchant, the mobile app uses a wireless communication technology called Near-Field Communication (NFC) to enable communication between devices. So a person can make payments via their mobile phone using NFC - by placing the device close to the payment terminal. Not all smartphones and mobile devices have NFC technology. For iPhone users there are alternative options to make payments in shops using mobile wallets, namely the Apple Pay app. To use the app, the user must link a credit or debit card via the Wallet app on the Apple device. At the time of payment, the user has to authenticate the transaction

using the fingerprint sensor (Touch ID) or facial recognition (Face ID).

This means you don't have to confirm payments with codes, secret questions or passwords. Apple Pay offers a high level of security through tokenization technology, which replaces real card numbers with unique, unidentifiable tokens. In addition, Apple does not store information about transactions made with Apple Pay, making it more difficult for unauthorised access. In the US, the most widely used e-wallet is PayPal, which enables online transactions in a secure and fast way. This payment method has been accepted by most online stores and e-commerce platforms such as eBay, Amazon, etc. Fraudulent activities, such as identity theft, are more difficult with e-wallets. While credit cards can easily be stolen or cloned, access to a smartphone is usually restricted by a password or fingerprint. Mobile wallets can also be protected by encrypted keys, giving them extra protection against unauthorised access. E-wallets are often confused with digital wallets, but there are significant differences between them. Digital wallets are mainly used for online transactions and are not necessarily available on mobile devices.

A regular PayPal account is a form of digital wallet, but when used in conjunction with mobile payment services and mobile devices, it works like an e-wallet. Peer-to-peer transactions are transactions that involve the transfer of funds between two people using P2P software and without the involvement of a third party such as a bank or financial institution. These payments can be made via a mobile device or computer with internet access, providing a convenient alternative to traditional payment methods. Since the concept was launched, many companies have developed the ability to conduct P2P transactions, increasing competition in the space and providing convenience to consumers. There are a number of digital payment services, such as Venmo, PayPal, Square Cash, etc, that allow users to transfer money directly between themselves.

Many of the above-mentioned services have also developed a corporate version, specialising in payment networks, foreign exchange (FOREX) or digital exchange platforms. However, the number of applications in this category aimed at companies is

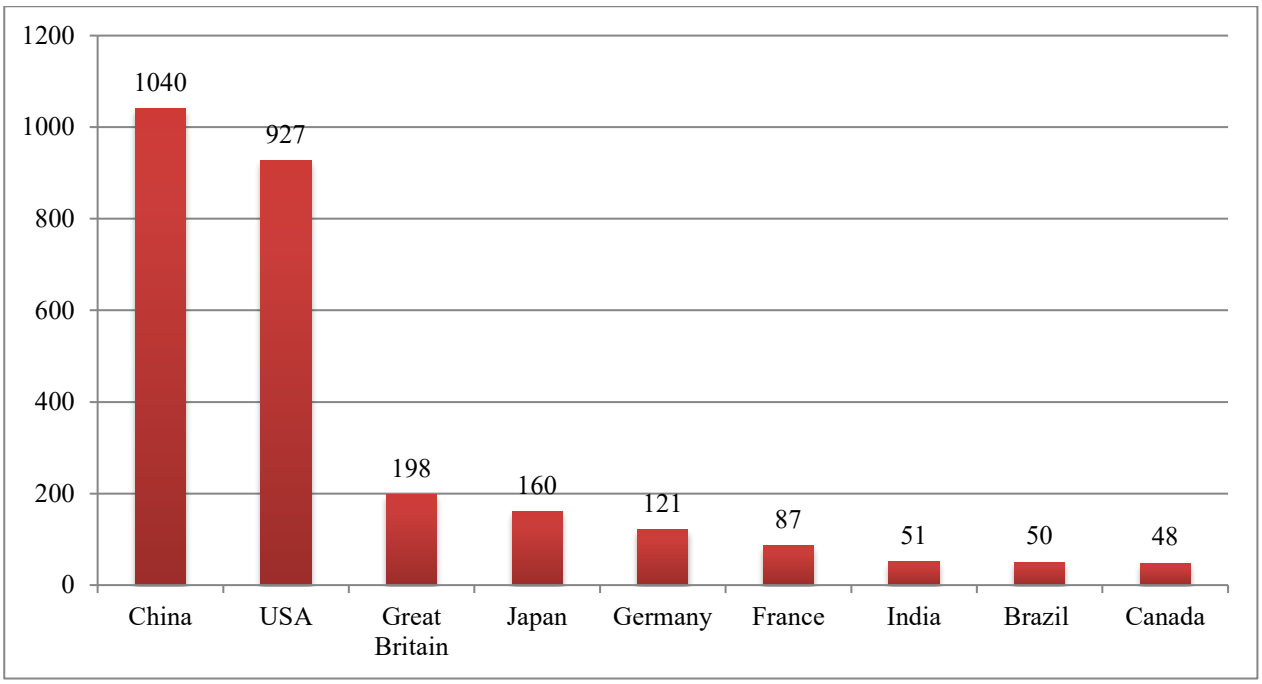

Figure 5. Evolution of e-transaction volumes between 2016 and 2022 for the main countries of the world (in billions of US dollars)

Source: Prepared by the author based on data *www.statista.com*

smaller and does not have the same notoriety as those aimed at the general public. Also, many of these applications, even if they operate in the virtual environment, seem to be resistant to government action, with states imposing bans or limiting their activity.

Fintech innovations in the payments sector are having a significant impact on the banking system. Technology has enabled the development of faster, cheaper and more efficient payment.

Transactions through new payment processors are increasing, but most of them continue to go through banks, as alternative systems do not yet have a global infrastructure, and the completion of payments requires the existence of legal tender issued by central banks.

Cryptocurrency issuers are gaining ground in the payments sector, and cryptocurrency holders are growing, but they too remain marginal due to very high volatility: their function as a means of payment and transaction volume are limited, and they have little acceptance for payments. In addition, many central banks have initiated projects to issue digital currencies, which in the future will replace legal tender.

Another aspect of the influence of technology on the banking system can be seen when analysing the use of fintech for lending, deposit and capital attraction. It takes

the form of crowdfunding, online lending platforms (both categories generically referred to as P2P lending), mobile banking apps (also known as digital banks or challenger banks). Digital banks do not have physical branches; all interactions with customers are conducted through mobile apps or websites. In general, they are known for their fast and convenient processes, as well as low rates and fees.

P2P lending, sometimes called "marketplace lending", is a form of participatory finance that is carried out through online platforms without the involvement of an intermediary bank. The app connects lenders with those who need money. P2P lending can be an alternative to traditional bank lending as it can offer lower or more flexible rates, without hidden costs and without the need to post collateral.

The P2P lending process works as follows. The person who wants to borrow money (called the borrower) submits an application on a P2P platform. It does a preliminary credit analysis and assigns a credit score, based on the risks associated with the loan and the applicant. Based on this information, the investor decides whether or not to offer the loan. If a common denominator is reached, an agreement is made between the two parties on the terms and conditions of the loan, including the interest rate and repayment period. Once the agreement is signed, the investor transfers the money to the lender's account. So the P2P platform does not invest in the loan, the money is provided directly by the investors, who finance the loan. The costs of the P2P platform are offset by loan origination fees (1-6%), possible late fees paid by the borrower and a service fee for the platform in the form of a percentage of all repayments (usually 1%).

Although P2P lending has grown significantly since the 2007-2009 financial crisis, the total volume of P2P lending remains small compared to bank lending. In 2021 the total volume of P2P lending was $82.3 billion and is projected to pass just over the $804 billion mark by 2030 [Acumen Research and Consulting "P2P Lending Market and Region Forecast 2022-2030"]. In comparison, the volume of loans extended by US commercial banks reached $13.1 trillion in December 2021. A 2019 study by the Cambridge Centre for Alternative Finance ["The Landscape of Peer to Peer/ Marketplace Lending", Camridge Centre for Alternative FInance, University of

Cambridge] shows that the structure of P2P lending is as follows: consumer loans- 36%; business loans- 26.1%, commercial paper finance/ factoring- 19.4%, mortgage loans- 18.5%.

The most popular P2P lending platforms are:

-In the US: LendingClub Corporation (LC), Upstart, Funding Circle (co-founded in the US and UK), Prosper Marketplace, CircleBack Lending, Peerform.

-In Europe: Grupeer, Minto, Housers, Zopa, IUVO Group, Bitbond, Auxmoney [Thakor Anjan "Fintech and banking: what do we know?", Journal of Financial Intermediation, 2019]. China's P2P lending market is the largest in the world, comprising over 4,000 platforms, totaling over $20 billion in loans annually. In the long term, the rise in popularity of P2P lending could diminish banks' market share, especially in short-term and consumer loans, but by no means

Fintech, being one of the most revolutionary areas in global business today, is also the fastest growing industry with an annual growth rate of over 60%. In a short time - just over a decade - the FinTech industry has changed people's perception of money.

Fintech companies are now at the helm of the financial industry, offering a wide range of financial products and services to make money management easier. According to the survey by McKinsey ["Global Banking Annual Review 2021: The Great Divergence", McKinsey, December 1, 2021] in 2021 in the US about 40% of customers are turning to banking services offered by fintech companies. In Western Europe this indicator is 30 percent.

Throughout their existence, Revolut and N26 have shown an impressive track record of expanding services, broadening their customer base and accessing new international markets while complying with legal regulations.

Revolut is a relatively new virtual bank with millions of users. The startup can be considered the "alternative to traditional banks" as it offers free and instant financial services for people who travel a lot, or want to have a global lifestyle.

While the global banking system has remained unchanged for centuries, Revolut brings positive changes that avoid the cumbersome and bureaucratic bottlenecks of traditional banking. Revolut offers financial flexibility, ensuring control over finances.

Revolut has two banking licenses, one in Lithuania and one in Australia. As Lithuania is part of the EU, Revolut's banking licence covers the whole of Europe. However, Revolut operates as a bank only in Poland, Lithuania, Bulgaria, Croatia, Estonia, Cyprus, Greece, Latvia, Malta, Romania, Slovakia and Slovenia. The company has applied for UK and US banking licences.

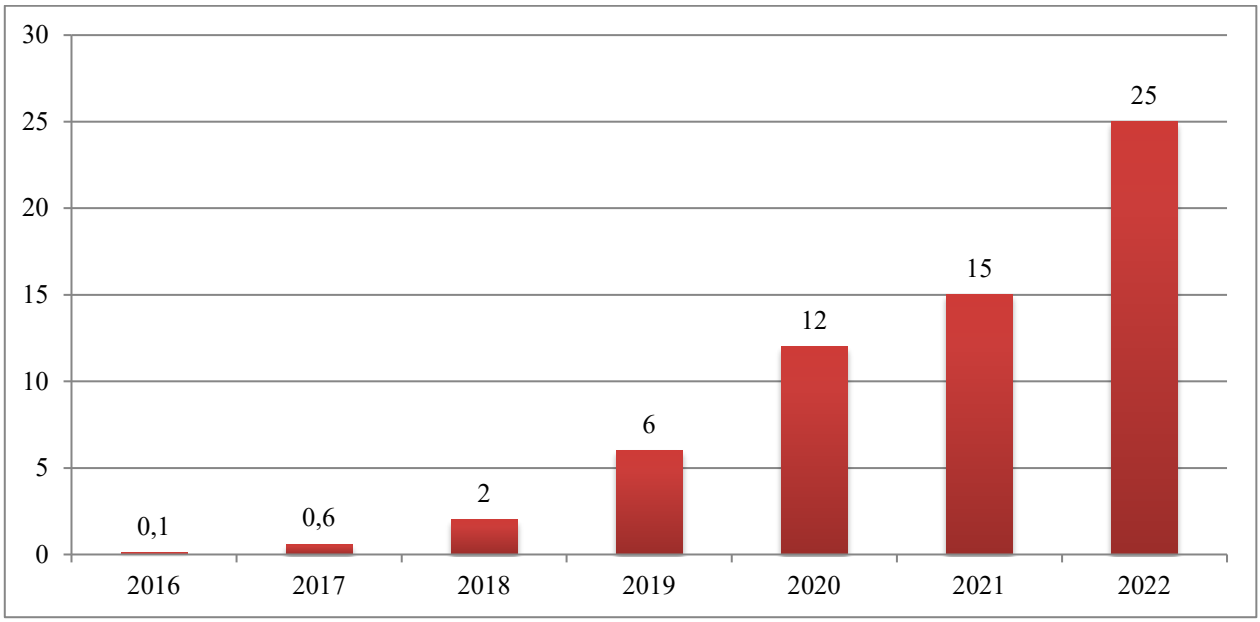

Figure N6. Number of active Revolut users, 2016-2022, millions

Source: Prepared by the author based on data The Fintech Times, Revolut[6]

III. *BC "MAIB" S.A. - bank developing some aspects of Fintech. Implications for the banking system in the Republic of Moldova*

Fintech is still at an early stage of development in the Republic of Moldova. Although some progress has been made in recent years, such as the increase in the number of fintech services and solutions available, as well as the number of fintech start-ups established, the market is still relatively small and not as developed as in other countries in the region.

One of the main obstacles to the development of fintech in Moldova is the underdeveloped infrastructure of the banking sector and the financial system in general. In addition, there is a lack of government support for the industry and a lack of

[6] www.thefintechtimes.com

technological and financial expertise.

However, there are a number of fintech start-ups in the Republic of Moldova operating in areas such as mobile payments, digital banking, crowdfunding, money transfer and online financial advisory services. There are also some government initiatives encouraging fintech development, such as the Startup Moldova programme which provides funding and support for start-ups. A good number of innovative banking products have been implemented in Moldova through diffusion, which means that these products were initially successfully tested on the international market.

An eloquent example of this would be the innovations in Moldova's payment system. Since 2002 the central authorities have actively promoted the use of cashless payment instruments. The Strategy for the Development of the National Payment System of the Republic of Moldova has been approved. This was the start of the development of remote banking services: ATM-banking, POS systems, Internetbanking, PC-banking, mobile-banking, phone-banking, SMS-banking. In 2013, the Law on Payment Services and Electronic Money, harmonised with EU legislation, entered into force. Currently, commercial banks in Moldova issue and service payment cards only within international payment systems. The number of bank card users is gradually increasing every year. In this respect, we would like to mention the impressive development of self-service systems in some commercial banks.

The lending and warehousing offerings at this stage are more traditional than innovative. At the same time, the process of technology transfer in the banking system is not simple and mechanical. So far there are a lot of problems, which are partly related to the specific corporate culture of banks and the financial culture of customers. However, most banks in the Republic of Moldova are trying to adapt to the new conditions by developing innovative digital banking services. Notable examples include:

Mobiasbanca has launched an internet banking service that gives its customers the ability to conduct transactions online and access information about their accounts.Victoriabank has launched a mobile app that allows its customers to make transactions and payments from their mobile devices. Banca Transilvania acquired a

majority stake in Victoriabank and brought with it a number of innovative fintech technologies such as contactless cards and innovative internet banking services. Moldova Agroindbank introduced a number of digital innovations, such as contactless cards and an online transaction platform.

In addition, local fintech start-ups have emerged to work with banks to develop innovative fintech solutions for customers. Moldova Agroindbank is the largest bank in Moldova, with a 34% share of loans and 31% of deposits in the entire domestic banking system. At the current stage MAIB is going through a period of transformation, focusing on quality customer service, digitalization, and of course, internationalization and ecosystem development. The transformations that aim to be implemented cannot be achieved through traditional methods and techniques. Thus MAIB has introduced several digital innovations in recent years in an attempt to improve its services and better meet the needs of its customers.

In 2021, for the second year in a row, MAIB was awarded the title "Best Digital Bank Moldova" by Global Banking and Finance Review, which demonstrates the bank's focus on digital transformation, high competitiveness and what it is like to be "above customer expectations". Mobile app Maibank is the leading banking app in the Moldovan market, being the most downloaded and highest rated mobile app in the banking sector. Thanks to numerous improvements and new functionalities, the total number of maibank users has reached 430 thousand - an increase of 45% compared to 2021 - of which 72% are monthly active users and 34% - daily active users. The increased importance of the mobile app as a distribution channel is demonstrated by the fact that more than half of the total number of Retail deposits (55%) and 23% of the number of Retail loans came from the online platform.

In 2021, loans offered through the maibabk app accounted for 15% of the total volume and 33% of the total number of consumer loans granted to individuals. This demonstrates that in addition to the convenience offered to customers and the substantial cost reduction for the bank, the mobile app is becoming a sales channel that is definitely worth developing.

MAIB has made payment solutions such as Google Pay, Apple Pay and Garmin

Pay available to customers, enabling them to make digital payments using their mobile phones. These have simplified and accelerated the online payment process. The company claims that the implementation of these payment systems will contribute to customer satisfaction and long-term business growth. In addition to the multitude of innovative technologies for MAIB customers, the bank is continuously looking for solutions to improve internal reporting and forecasting processes. MAIB's IT department has built and implemented DataLake for all bank data. This is a solution that enables the storage, processing and analysis of large amounts of data in a scalable and efficient way. Moreover, the institution has implemented a modern reporting platform, which allows real-time tracking of all transactions and the detection of abnormal behaviour.

The digitization projects implemented by MAIB go beyond the bank's borders. An eloquent example of this is the launch in March 2021, in collaboration with Mastercard and the Chisinau City Hall, of a new payment solution in the capital - the pilot project for card payment in public transport, an initiative developed in support of the smart city concept.

This allows payment to be made individually by the traveller, receiving the ticket electronically in the mobile app, or via SMS notification, chat bot or bank statement. Moreover, the institution is also involved in another project, which aims to install turnstiles at the entrances of museums, parks, cultural events and car parks. These will allow instant payment, without human involvement. Private investment is becoming a trend worldwide. In the Republic of Moldova, this phenomenon is growing significantly, so more and more people are deciding to become investors. In recent years, participatory finance or P2P investing has become increasingly popular, and in Moldova this type of investment is offered through the Fintech platform Fagura.com.

Fagura.com was launched in 2019, becoming an award-winning project at several events in Romania and Moldova: Brand of the Year in FinTech, 2020 and 2021 (Moldova), Startup with the highest impact, 2020 (Moldova), Top 3 Best FinTechs, 2019 (Romania). In 2021 Fagura was ranked in the Top 100 Next Global Companies by the British magazine "Global Finance & Finance Reviews". The startup is the first

P2P lending platform, registered in Estonia and successfully launched for Moldovan customers looking for funding. Fagura's vision is for people to be able to manage their entire financial lives online. The startup aims to revolutionize the financial system and create exceptional services where customers can get, multiply and control their money at the click of a button.

Table 5. Differences between the lending process in commercial banks in the Republic of Moldova and Fagura Fintech.

Categories	Commercial banks in the Republic of Moldova	Fintech start-up Fagura
Source of funding	Financial institution is the main source of funding, usually through bank deposits or the capital market	A group of individual investors
Approval process	Rigorous analysis of borrower's creditworthiness	Automatic approval generated by the P2P platform
Interest rate	Determined by the financial institution based on credit risk and cost of funding	Individual investors compete to fund loans, which can lead to lower interest rates
Loan term	Loans are usually long-term, from a few years to decades	Short duration of the loan, depending on the term agreed by the borrower and the investor

Source: Prepared by the author

The major difference between the Fagura model and the traditional model is that in the former case, funding comes from a group of individual investors. While in traditional banking rigorous analysis is carried out to assess the borrower's creditworthiness, usually by checking credit history, current financial situation and repayment capacity, in P2P lending investors can analyse and evaluate credit applications from borrowers and the final approval decision is made by the platform.

The idea of the project is that people can borrow money from each other directly, without the intermediation of a traditional financial institution. The whole process, both investing and lending, takes place online.

The Fagura.com website operates an online calculator that can calculate the investor's approximate income based on the amount of the investment - from EUR 100 to EUR 100,000, over a period of 12 to 36 months - and on the risk grades chosen - from A to G. The higher the risk, the higher the interest rate for the borrower and the investor. Investing can take place automatically (AutoInvest) or individuals can manually choose the loans they wish to invest in (Manual Invest). For novice investors, the first option is recommended. The fee for investors is standard - 2% - and is paid only when they receive their money back in their account from the lenders. Investors have access to a dashboard with different loan applications, filtered by predefined requirements. You will only be able to invest 400-500 lei in a single loan. The amount that an investor has in the platform will be split across several loans to have a diversified portfolio. Today the Fagura community counts over 800 investors and 1200 borrowers, with a 100% online process to access a loan or investment. Among the advantages offered by the start-up we would like to list:

Randament high. This type of investment offers an incomparably higher return than bank deposits, providing investors with stability even in the face of 15% inflation. So if investments are made in euros, interest will be charged in euros as well. In addition, the income accrues in the form of compound interest. For example, if you invest €1000 over 24 months at an average level of risk, the income will be €1368. Compared with a deposit in foreign currency, the return will be more than 30 times higher.

Availability. The entire investment process - from registration on the platform to the actual investment - takes no more than one day. The registration process is online, following strict two-factor identification rules. The only requirement is the existence of a bank account, either in one of the e-wallets. The investment process is very easy and simple - everything is detailed and as user-friendly as possible.There are also a few drawbacks of the Fagura.com platform, including:

In this context, we would like to mention that the share of non-performing loans in Fagura is 3-4%, while in national commercial banks - 6-8%. At the same time, Fagura will implement additional measures to insure investors: a reserve fund will be created to cover all investor risks in case of bad debtors.

Medium liquidity. Money invested cannot be returned to the account immediately. Funds return to the account gradually as the borrower pays back monthly instalments. Sometimes this happens quite quickly: half of the money invested can be received within a few months, and then it can be invested again. Other times, it will wait until the end of the borrower's repayment period. To increase the liquidity of the proceeds, there are plans to create a secondary market on the platform, where investors will be able to sell their investments if they urgently need money, and then, when circumstances improve, they can return to invest.

In the long term, Fagura will be a digital bank where people can manage their financial lives online. The company plans to gradually add new financial products and improve the quality of the services offered, to increase the potential for scaling up and entering new markets. Overall, Fagura has a relatively limited impact on the Moldovan banking system. This is because P2P lending has not had a long testing period and people are not yet familiar with it. However, the Fagura platform creates additional competition in the market, offering an alternative to traditional loans offered by banks.

Yes, indeed, the FT industry has shown rapid growth rates and facilitates the process of financial practices more efficiently, could reduce the propaganda effects of institutions and minimize risks, (Pierri P., 2022, p.7-44).

In contrast, it does not exhibit resilience to the extent that it should because it has not been exposed to strong shocks. Digital transformation is a phenomenon that is occurring across industries and is having a significant impact on the way customers access and use financial services from non-financial sectors. This hyper-diversification has increased portfolio risk, competition and exposed financial entities to online threats.

Authorities are willing to support the benefits of digital transformation in the financial industry, but are at the same time aware that digital transformation of services

may increase the impact and new, or exacerbate existing, cybersecurity risks in market activities. Thus, this paradigm shift, questions how secure FT is and what risks it poses.

According to information from previous research (WBG,2022), Figure 2.1 highlighted several risks, although, the top six risks with a higher perception of risk over the next five years are visible, these include: cyber and operational security (in GFS, 2019, over 60% of authorities perceived higher levels of risk), data protection, third party services, illicit financial activities, reputational and consumer protection. These risks are directly associated with the technological base of the FT industry and the digital transformation process. According to the rankings, risk perception was moderate for all types of participants. Large banks and MFIs had a higher risk perception compared to small banks, FT companies and non-bank finance institutions, signalling concerns about new entrants. Small banks had slightly lower risk perception and had relatively less concern compared to large banks.

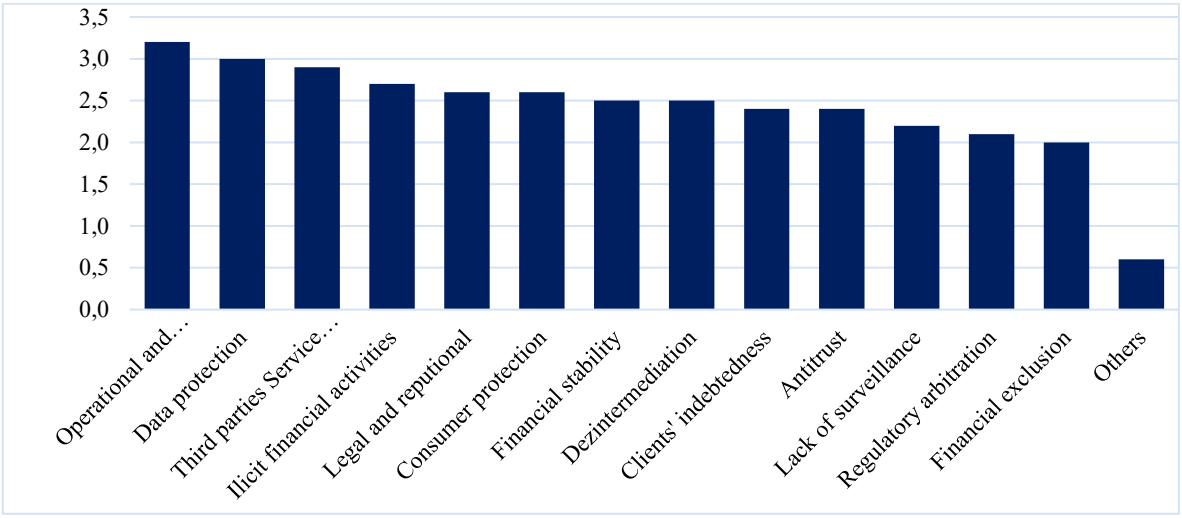

Figure 2.1. Aggregate risk perception

Source: GBM, Digital technology and the future of finance

All the risks mentioned above fall under the category of risks associated with FT and digital transformation in the financial industry, they cover aspects such as:

- Cyber risk. Recent cyber attacks have clearly demonstrated that security breaches can compromise business continuity, threaten financial stability and manage economic risks, (FSB, 2020). Manipulation of data or financial transactions can affect the integrity and trust in the financial system. For example, in EMDEs, the financial

market, payment infrastructure is less resilient than in advanced economies, the likelihood and cyber attacks are higher.

-privacy and data protection. This refers to the possibility of personal and financial information being accessed, used or disclosed without the individual's consent or knowledge. This risk is very important for FT as it often involves the collection and processing of financial information. Cyber-attacks and privacy uploads can lead to identity theft, fraud and consumer harm. It is therefore crucial to have measures and regulations in place to protect data and ensure privacy in the FT industry.

Operational Risk (Third Party Service Providers): Involves the risk associated with reliance on external providers for critical services, such as data storage and processing, which may create additional vulnerabilities. Platform or other technology failures, can negatively impact consumers, from inconvenience and poor service to monetary loss and data integrity. For example, a P2PL platform failing, or how the rapid expansion of the P2PL market in 2010 was followed by significant platform crashes.

This has resulted in loss of customer funds, refunds and profits, especially where there is no deposit insurance. Consumers may be more vulnerable to cyber fraud when purchasing FT products than when accessing traditional ones.

-Illegal risks (Illicit financial activities): The risk is posed by involvement in illegal activities such as money laundering, terrorist financing or financial fraud.

-Fraud risk (Consumer protection): The risk of fraud in FT is the threat of users falling victim to fraudulent or scamming activities in digital financial services.

These fraudulent activities can be carried out by malicious third parties, such as hackers or cyber criminals, or even employees of FT companies. There are several forms of fraud such as: fake identity, stolen cards, digital identity theft and fraudulent investments.

-Risk of eliminating intermediaries (disintermediation). This is the risk that FT technologies will eliminate traditional intermediaries and disrupt the existing business model.

- Risk of inadequacy, even if consumers are given all feasible information about

risks, this may be because FT involves more complex issues than financial products traditional

-Regulatory Risks (Regulatory Arbitration). This refers to the possibility that companies may fail to comply with requirements and regulations imposed by financial regulators and supervisors. In the case of decentralised systems, such as crypto assets, P2P digital platforms are proving harder to regulate. Because these systems are built on BC technologies and operate in a decentralised manner, there is no central governing body that can be subject to traditional regulation.

-Competition. Competition risk in the FT context refers to the threat that competitors pose to the success of a particular campaign or the sector as a whole. FT has brought a significant increase in competition as it has allowed a large number of new players, including start-ups and technology companies, to enter the market and offer innovative financial services. Fierce competition can lead to a race for features and prices. There are several issues associated with the risk of FT competition: unfair and accelerated innovation, loss of market share, pricing and profitability.

-Credit risk and liquidity. These risks refer to the possibility that a person or entity may not be able to repay debts to the creditor. This risk arises when the borrower encounters financial difficulties, becomes insolvent or fails to meet agreed repayment terms. Liquidity risk refers to the difficulty of obtaining sufficient liquid funds to meet payment obligations on time. This risk may arise when there is a lack of immediate cash availability or when assets cannot be quickly converted into cash.

According to the World Bank Group report (2022), a global World Bank survey covering a wide range of market participants was analysed. This survey was conducted by the IMF and the WBG on transformation, the future of the financial sector and its impact on financial markets. In Figure 2.2 we can, observe that most of the participants 70% and 82% from different institutions, expressed u opinion that their service line will have more potential to reduce costs through digitization. The greatest benefit they perceived in FT, among which large technology firms and insurance providers.

In contrast, less than 62% of participants, such as MFIs, banks, telecoms companies and payment service providers, highlighted that there is a risk to profit and

a risk of losing customers. Various areas of concern included data protection risks (59%), including operational, cyber risks (62%), even concerns that digitisation could impact traditional providers as well (45%), they may be excluded or replaced by new technologies and digital platforms that directly provide financial services to customers.

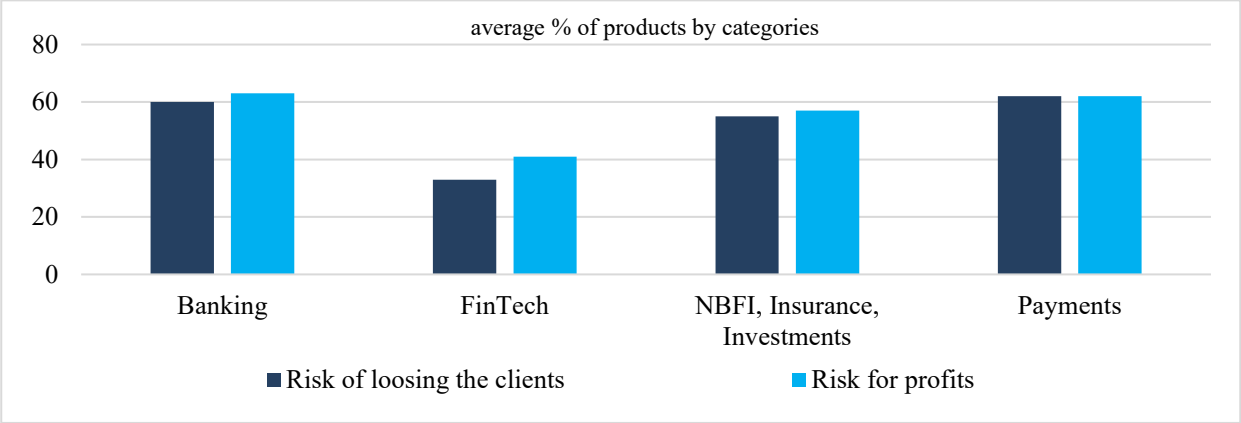

Figure 2.2. Risk of losing customers, risk to profit and potential

Source: Own processing based on World Bank Group data, available at: Fintech și viitorul finanțelor (worldbank.org)

Also in today's context, according to statistics (2023), today's cyber threats highlight the need for action. Whereas, the highest number of cyber-attacks was detected in June 2022, with approximately 13 million attacks (Figure 2.3), this is an alarming figure and indicates a significant increase in criminal activity in the digital environment. Such incidents highlight the need for tougher and more effective measures to combat cyber threats and protect sensitive infrastructures and data.

Feasibility of applying innovative models based on information technologies in the country's economy

Romania is in a modest position in terms of the level of innovation, it is notable for having the second largest digital commerce market in the region. But it has a low penetration in retail, even a score below the EU average and occupying for several years one of the last places in Europe, we note in the table: This situation is a challenge for the country and highlights the need to stimulate innovation in various economic sectors.

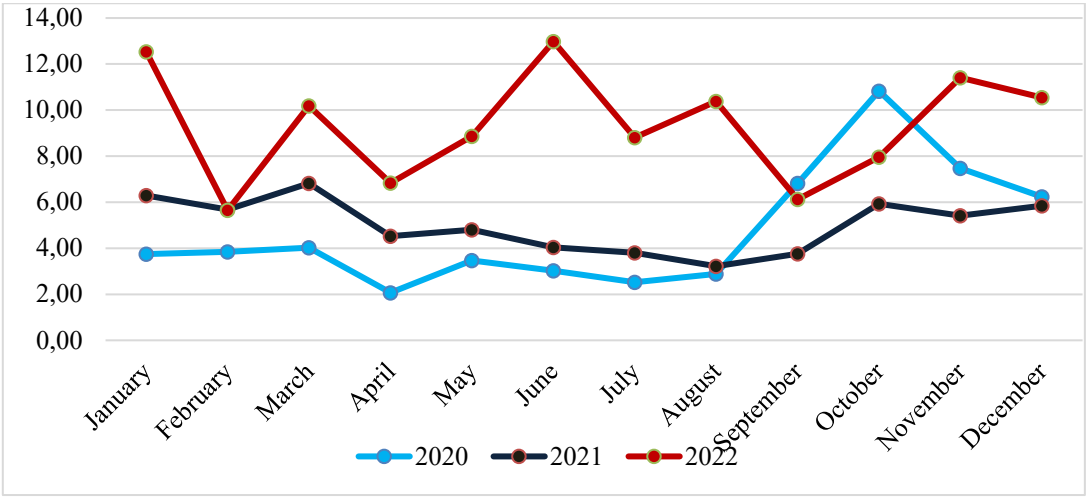

Figure 2.3. Monthly number of global IoT malware attacks from 2020 to 2022

Source: Created by the author, based on information from statista.com.

Table 2.1 Results on the integration of digital technologies between Romania and the EU

Integration of digital technology	**Number place**	**Accumulated score**	**UE**
DESI - 2022	27	15,2	36,1

Source: Created by the author, data taken fromDESI 2022.

Despite these challenges Romania has substantial strengths, in order to overcome these challenges and increase the level of innovation, a comprehensive and coordinated approach among all stakeholders is needed to increase the level of innovation in the financial sector. Thus investments in infrastructure, digital training and education programmes, stimulating innovation and creating a favourable business environment are key elements to overcome these challenges and accelerate the digital transformation in Romania. I also believe that there are several open opportunities for adopting financial engineering in the country's economy, covering various areas of the given sector: by leveraging European funds, through international collaboration and by stimulating the innovation ecosystem.

According to „EU-RER, both the pandemic and the war in Ukraine have had a negative impact on the development environment and have slowed down Romania's

convergence process with the European Union. Despite these challenges, it was important to relaunch the convergence process with the EU, through this process we are aiming at more projects and funding which gives Romania more opportunities to apply financial engineering in several areas.

The European Recovery and Resilience Facility and subsequently the National Recovery and Resilience Plan (NRRP), represent one of the most important opportunities for the financial sector in Romania. These initiatives offer the possibility to access significant funds aimed at developing and modernising digital infrastructure, promoting innovation and digitisation across key sectors of the economy. The NERP is an important funding instrument for Romania and is supported by the EU's new financial instrument, called NGEU. This is a post-pandemic investment and recovery programme, which aims to stimulate economic growth, infrastructure modernisation and sustainable development in the Member States of the European Union. Through the NGEU-EU, Romania benefits from significant financial resources for the implementation of the NERP. These funds are mainly targeted at investments in key sectors, such as the financial innovation sector. The main objective of this plan is to improve its resilience to future economic shocks, the package aims to contribute to the revitalisation and recovery of the affected economies and to create a solid basis for a sustainable and resilient recovery, (KPMG, 2022, p. 15).

Within the NRRP, several aspects are highlighted as particularly relevant, but the most important one is under 7, although in all components there are measures related to the digital domain in Romania. Component 7: called "Digital Transformation", as a whole this component is the most important pillar in Romania's recovery and resilience plan, aiming to accelerate the country's digital transformation and harness the technological potential for the benefit of society and the economy.

Specifically, it includes reforms such as modernising and digitising public services, simplifying administrative procedures through digital technologies and creating online platforms and tools for interaction with citizens and business. A crucial aspect of digital transformation under Component 7 is ensuring cyber security and improving connectivity. The aim is to create a secure and cyber-resilient environment.

Specifically, this component includes a set of important reforms, such as the implementation of the 5G Network Security Law in Romania and the adoption of the National Cyber Security Strategy for 2021-2026.

This component aims primarily at accelerating the digital transformation process and ensuring adaptation to the new requirements and challenges of the digital economy. It includes measures to strengthen capabilities to protect against cyber attacks and to promote a culture of security among citizens and businesses. Among other reforms, the adoption of the Government Cloud Law, a key reform that will generate investment in implementing and upgrading digital services, is planned. In addition, an analysis of options for the government cloud architecture is included, along with the establishment of the task force for the implementation and monitoring of digital reforms and investments in the NREP. As a result, it shows that €1820 million has been allocated, the largest contribution for one component compared to the others.

Component 8: Tax reform and pension reform. In this component one of the measures proposed is the creation and operationalization of the NDB, the National Development Bank is a specialized institution aimed at mobilizing the necessary financial resources. In view of the needs and challenges existing in the Romanian market, the NDB has an important role to play in bridging the financing gaps identified in the financial sector and in supporting innovative SMEs.

To achieve its objectives, the bank will provide considerable financial resources. In the first five years it would provide 8% funding and support to cover part of the gap between funding needs and available resources in the financial sector, and it also aims to provide 50% funding for innovative SMEs. By covering part of these gaps, the NDB would help facilitate access to finance and stimulate growth and innovation in the sector. As a result, it is estimated that by 2026 it will allocate €300 million annually to financial instruments for the financial sector and innovative SMEs. These instruments will accelerate business, support project development, stimulate technology transfer and create new jobs.

Researcher career reform: this reform aims to create an enabling environment for private sector development and innovation in digital technologies. Action will be taken

to increase and promote the careers of innovators in the financial sector. This may include measures to support training and professional development, facilitating access to finance and resources for innovation, and strengthening the link between business and R&D. Collaboration and exchange of knowledge and technologies between the private sector and research institutions will be promoted, which can lead to the transfer of innovations and the development of new products and services. This highlights a number of significant investments, including facilitating private sector access to special financial instruments designed to support resilience investments and state aid and de minimis schemes for the private sector. These schemes will provide financial resources to help them adopt digital technologies and upgrade their IT infrastructure.

It is also proposed under this component to implement a programme to attract highly qualified human resources from abroad to participate in financial sector activities. This component aims at strengthening the quality, performance and support of Romania in partnerships and missions under Horizon Europe.

Through this programme, the aim is to bring in experts and professionals from various fields to contribute to the development and advancement of knowledge in this sector. This can encourage the development and implementation of advanced technological solutions, as well as the generation of innovative results and products with potential market impact. Overall, the private financial sector support component aims to create an environment conducive to innovation and economic development by promoting cooperation and investment in technology and specialised human resources.

In Romania's NRRP, there are six pillars in which investments and reforms are concentrated, although they may vary depending on the country and the specific plan of each country. However, there are two core elements that are closely linked to Romania's digital transformation process, (trade.gov, ITA, p. 15).

The first pillar (NRRP), which focuses on digital transformation, includes four important priorities. The budget allocated to the digital component of the first pillar, i.e. government cloud and public sector digital infrastructure, is $2 billion. This involves implementing four reforms and making nineteen investments, which will help modernise public services through the adoption of digital technologies such as Cloud

C and eID. The implementation of the government cloud will enable efficient data storage and management in a secure environment. The eID card will provide 8.6 million citizens with more possibilities to access online services in a simple and secure way. The skills, development and retraining programme will also support 100,000 civil servants and thirty thousand citizens in developing digital skills. Through these programmes, it will promote greater digital development and use, thus contributing to capacity building and efficiency in the public sector. An important aspect of the investment is also to strengthen cyber security. By implementing advanced security measures and training specialists in the field, organisations will be well prepared to protect information and deal with cyber threats.

Under the second pillar of the NRDP, there is a key component, namely support for business environment, development and innovation. This component proposes two reforms and five investments that will benefit from a considerable budget, similar to the first pillar. One of the key next IT&C investments is the digital transformation of at least 3000 SMEs. Through this transformation process, the aim will be to ensure that SMEs can take advantage of the opportunities offered by digital technologies and align with current business trends.

Romania can accelerate the innovation process and gain competitive advantages in the global economy. Thus, by implementing the planned reforms, investments and opportunities offered by the EU, Romania will be able to secure its future and bring significant benefits to both citizens and the environment.

Predicting the growth of investment in FinTech companies globally

Part of the economic analysis is data-driven, from which we extract future trends to make decisions today, in order to identify future directions and developments. In economics, predictions and trends are understood in a variety of contexts, including but not limited to finance.

By collecting and evaluating against this information, we can use statistical analysis models to project estimates of future investments in FT companies worldwide. These models can take into account factors such as FT industry growth, investor interest, capital flows and financial market trends. Econometrics, however, is that

branch of economics that takes data from statistics to study the relationships caused between different economic variables.

Using this system, we made a prediction about the total value of investment in FT companies worldwide for the year 2024. In general, around 80 percent of the predictions that we make today using econometrics, are based on three types, families of models: model 1(Trend-based), Model 2 (models based on autoregression in the data set) and model 3 (regression), here theoretically we have two types of models, models that within them use one factor, namely simple regression and then we talk about several factors at once, in which case we are dealing with multiple regression. These models are welcome for any prediction, whether we're talking about sales, costs, wages and any kind of prediction, just different data.

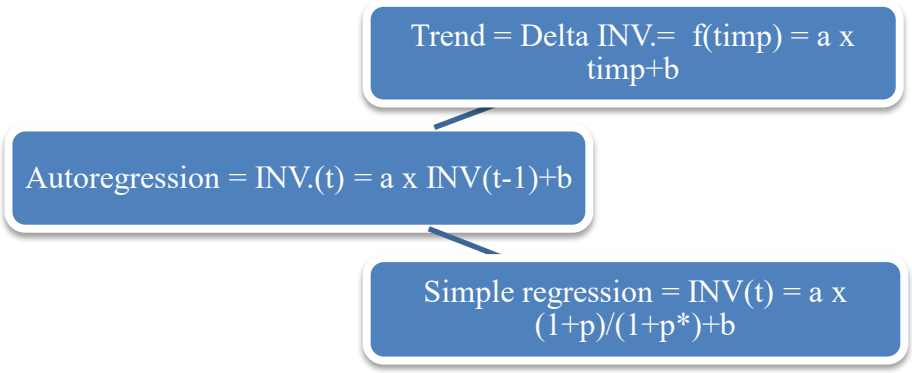

Figure 2.5. The three models used for predictions

Source: Elaborated by the author on the basis of information studied in the IBFI course

Based on the analysis of the excel data, values for all models were calculated and a probability of 95% statistical significance was obtained. Based on the tables in SUMMARY OUTPUT, data for the three models were chosen. Thus all the data in the table showed us that our model is statistically relevant in terms of the strength of the link between the variables as well as in terms of the coefficients in the regression function in this model. The first thing we notice is Adjusted R Suare, the one that shows us the intensity of the link between the variables tested, the closer it is to 1 the higher the intensity.

In Table 2.2 we can see that for model 1 (trend), the value is 0.82814, close to one, which implies a good result. The second important element, we art the statistical significance of the model, i.e. the larger it is and the more outside the range (-2; 2) the better it is.

In our case, the statistical significance is 57.8259, so that's pretty good. The third thing we draw attention to is the probabilistic value, in general we take into account two coefficients, the variable coefficient and the free coefficient.

In the prediction in Model 1, the formula in Figure 2.5 was used. Thus, based on the history of investment, in financial companies, I can say with 95 percent probability that at the end of this year the investment should be $237.886703 billion.

Table 2.2.Prediction for the year 2024 based on the three models.

	Prediction 2024	**Adj. R S.**	**F stat**	**P-Val.**	
				C. Var.	**Coefficient Free**
Model 1 (Trend)	**237,886703**	0,82814413	57,82595464	0,0000	0,0000
Model 2 (AR)	**154,749877**	0,52154661	14,08081301	0,0032	0,1837
Model 3 (Regresia)	**178,945678**	0,58227878	16,72729338	0,0015	0,0404
		Val. 1	As high as 2	As small as possible	de 0,05 = 5%

Source: Own calculations, with data taken from statista.com

Model 2, helps us figure out these autoregressive patterns. For this, the choreogram was used to determine how much we go into the past, how much the past matters to the present. For example, sales made yesterday are related to sales made today, as some of yesterday's shoppers are still in the stores today, and on some data series, yesterday's sales determine today's sales. The critical value has fallen, we have a slight loss of statistical significance, but the model itself remains, still robust and the strength of the relationship between the variables is still strong, (0.52154). This model comes out slightly weaker than the previous one for prediction.

Model 3, based on simple regression. This time it means that not time, not the variable itself with the lake, but another variable influences my variable, inflation. In

the end, I obtained three values. The question is which one do we choose? Out of a hundred models, the one with the maximum Adjusted, maximum F-statistic and minimum p-value, that's the one we choose, the minimum. We have to pay a lot of attention to regression models and coefficients, inflation is the one that positively influences investment. This can accelerate the adoption of technology in the financial industry and spur the growth of FT companies. As consumers and investors seek alternative and more efficient financial solutions in times of inflation, this can generate increased demand for FT services and increase the adoption of innovative financial technologies.

In Figure 2.6, observing the total amount of investment in FinTech companies worldwide, it can be seen that the volume has increased drastically between 2010 and 2019. In 2020, however, FT companies saw a drop in investment by more than a third, falling below $125 billion. The value of investment increased again in 2021 to almost $239 billion. However, 2022 was another slow year for FT, as the value of investment fell considerably, although it remained well above the value measured in 2020. Thus, large investments in digital transformation in 2023 are seen to have grown to a value of $219.365 billion. At the same time according to our prediction it is expected to boost the Fintech market in the next year with an even higher investment volume worth $237.886 billion.

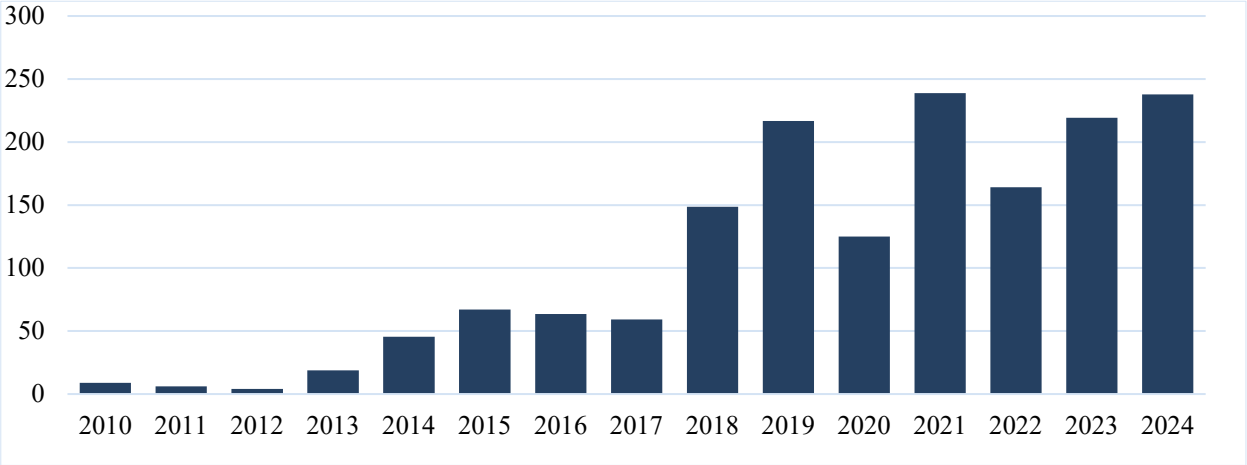

Figure 2.6. Total value of investment in FT companies worldwide 2010-2023 and prediction for 2024.

Source: Created by the author, inspired by statistical data available at:statista.com

Conclusion

The FinTech industry will scale as technological developments and consumer needs continue to drive innovation opportunities in the financial sector. The FinTech, Reghtech and Insurtech industries are the business models that will increasingly develop. These areas bring a high added value, for this reason they will contribute to the sustainable growth of economies while imposing the need to adapt to ongoing technological and economic changes. The undeniable advantages: faster service, lower costs, higher profits for bank shareholders. Investment will increase in these areas, and their development also brings with it some problems that will arise in the coming years. One of these problems will be the reduction in the number of people employed in the sector, where some of the front office workers, the financial industry and the service industry will be employed. Another issue that is already there is how the training process for specialists in the field will change. According to our forecasts the Insurtech industry will have considerable growth potential in the coming years. Some well-known companies are already active in this field, such as Bdeo, Etherisc, Dacadoo, Lemonade, but their number is currently quite modest. It also raises questions about the risks associated with these activities and the lack of a regulatory framework in the field, or a rather vague legislative framework, few specialists to prevent some rather sophisticated frauds. One thing is certain, the latest innovative processes will develop rapidly, practically changing the architecture of doing business, marketing, etc. The industries described are already the future of the global financial system based on decentralisation, and at this stage it is necessary to take preventive action so that the transition phase is less painful.

Acknowledgments / Note: *This article is part of the research of the project within the state programme "Shaping innovative busin***ess** *in the context of regional competition" with the number 20.80009.0807.42.*