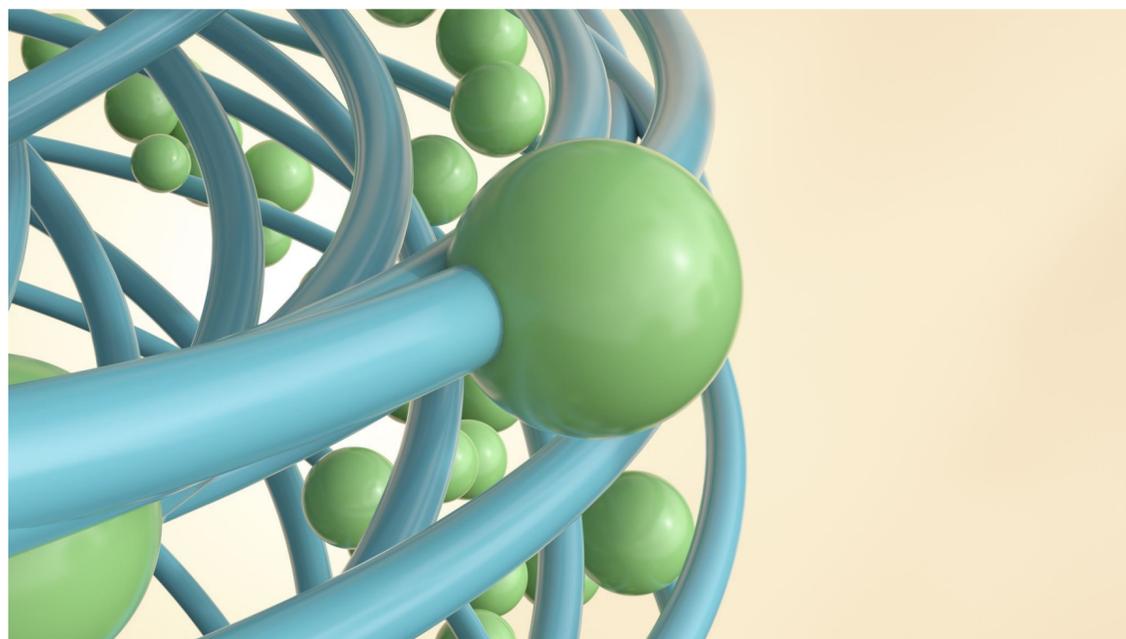


FinTech as an engine of the banking system digital transformation: the example of small countries



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Country ranking Findexable Index 2021 20 leaders



FinTech is

General definition: FinTech is a set of financial services and processes based on new technologies, modern hardware and software, the computer and mobile applications use, and innovative processes and business models implementation

Definition institutional approach: Fintech is a set of companies, organizations and start-ups that provide these kinds of services, as well as creating the conditions for their efficient operation.

Ranking	Movement	Country	Region
1	▶ ±0	United States	North America
2	▶ ±0	United Kingdom	Europe
3	▲ +9	Israel	Middle East & Africa
4	▼ -1	Singapore	Asia Pacific
5	▶ ±0	Switzerland	Europe
6	▲ +2	Australia	Asia Pacific
7	▶ ±0	Sweden	Europe
8	▼ -2	The Netherlands	Europe
9	▲ +3	Germany	Europe
10	▼ -6	Lithuania	Europe
11	▼ -1	Estonia	Europe
12	▼ -3	Canada	North America
13	▲ +1	Finland	Europe
14	▲ +5	Brazil	Latin America & Caribbean
15	▲ +6	China	Asia Pacific
16	▼ -3	Spain	Europe
17	▲ +46	Uruguay	Latin America & Caribbean
18	▼ -1	Ireland	Europe
19	▲ +13	Russia	Europe
20	▶ ±0	Denmark	Europe

Source: Global Fintech Index, findexable 2021

FinTech ecosystem: participants

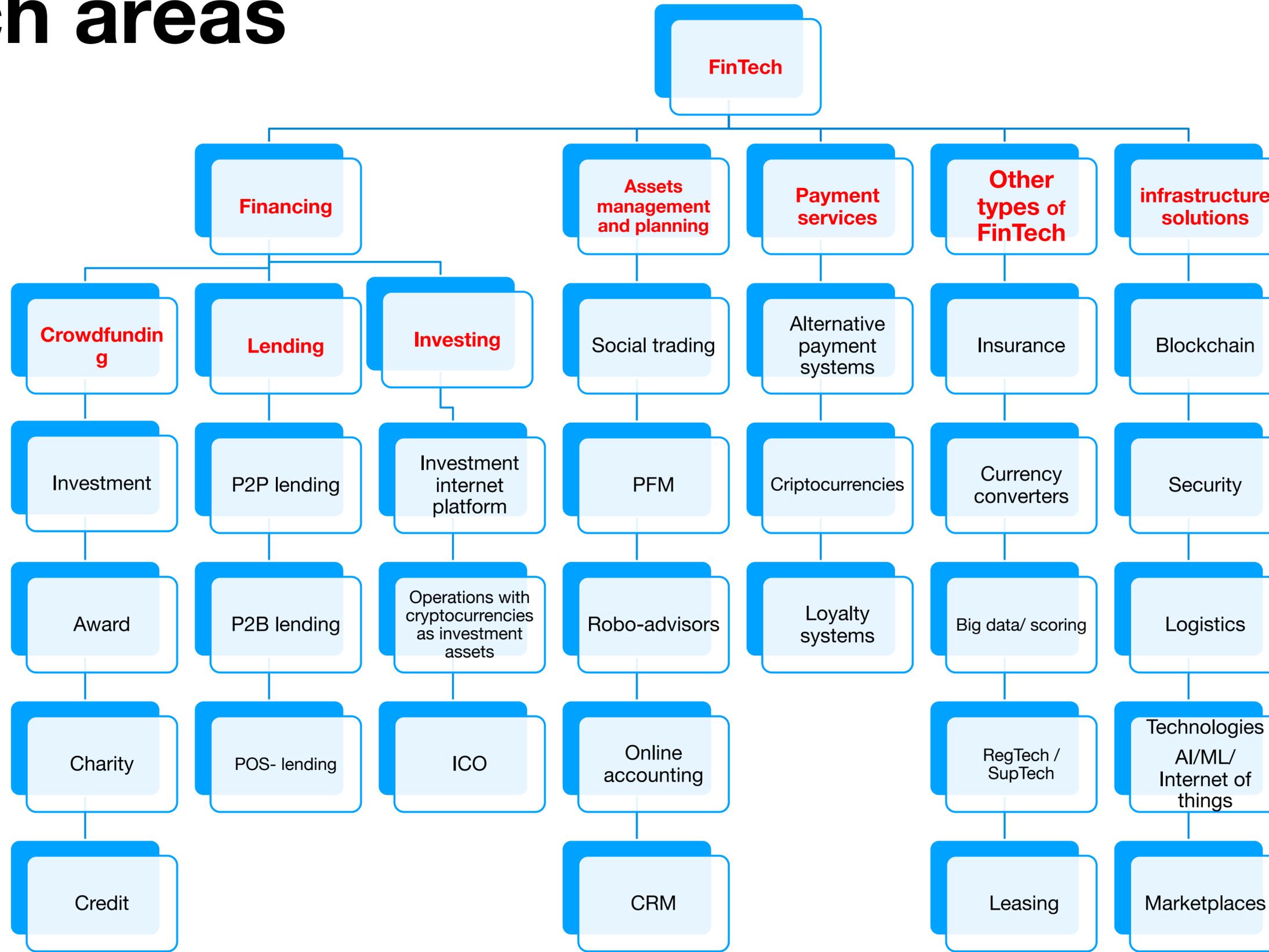
Regulation
Central Bank, Ministry of Finance, other interested public bodies

Infrastructure
Incubators and accelerators, associations, regulatory sandboxes, IT sector, financial institutions, consumers, inventors

Fintech entities
FinTech companies (legal entities)
Startups (projects)
Other entities (mobile operators, e-commerce)

Institutions that develop digital and financial literacy
Educational system: schools, colleges and universities
Mass media

FinTech areas



2 types of banks' business model and fintech's place in them

Bank as an ecosystem (for large institutions mostly)

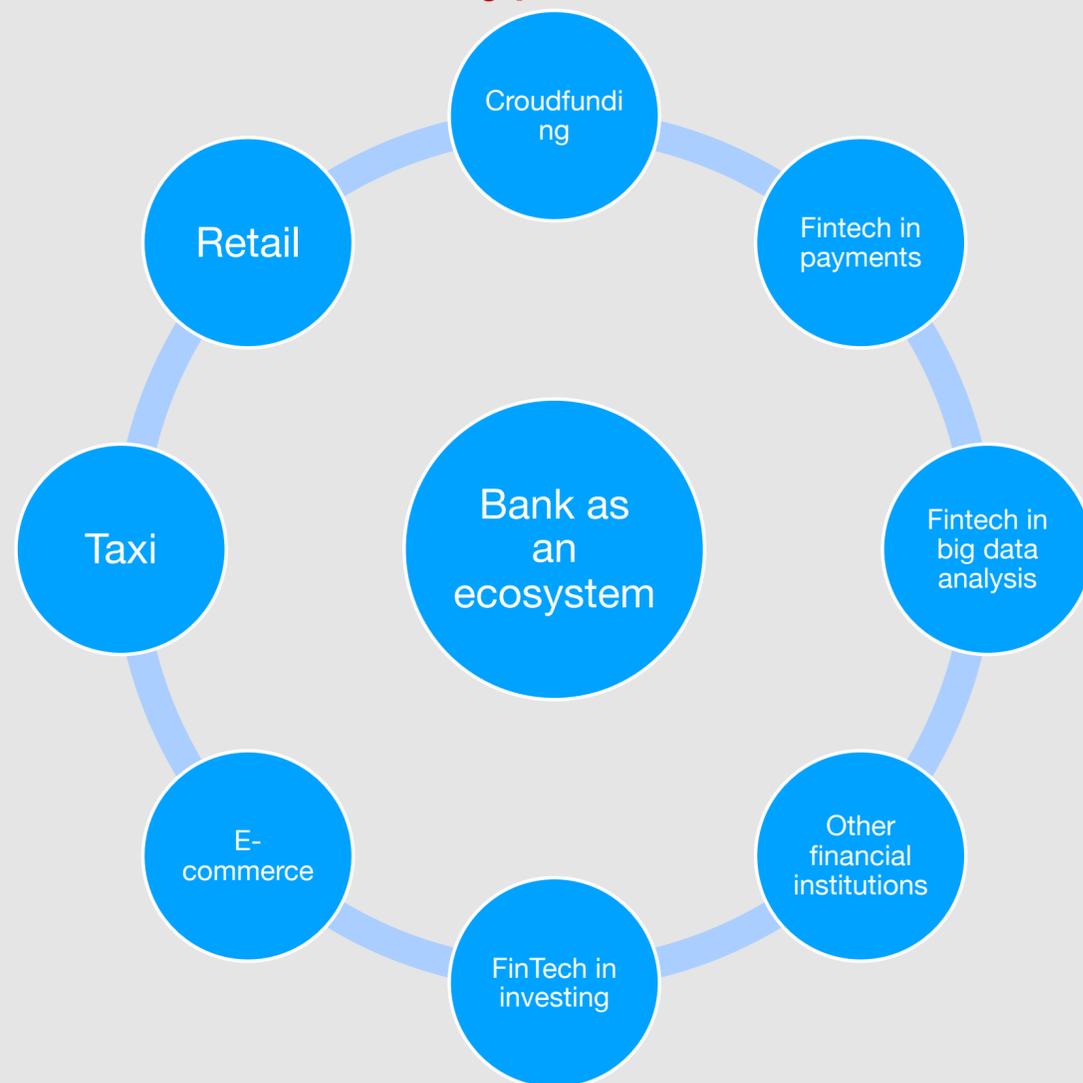
- *For banks, going the platform route would entail working with fintechs to create multi-product ecosystems*
- *Priority spheres for banks:*
 - *Investing;*
 - *Creating a single application for multiple fintechs, which is convenient for the end user.*

Banks as a service (Baas) – for middle and small banks

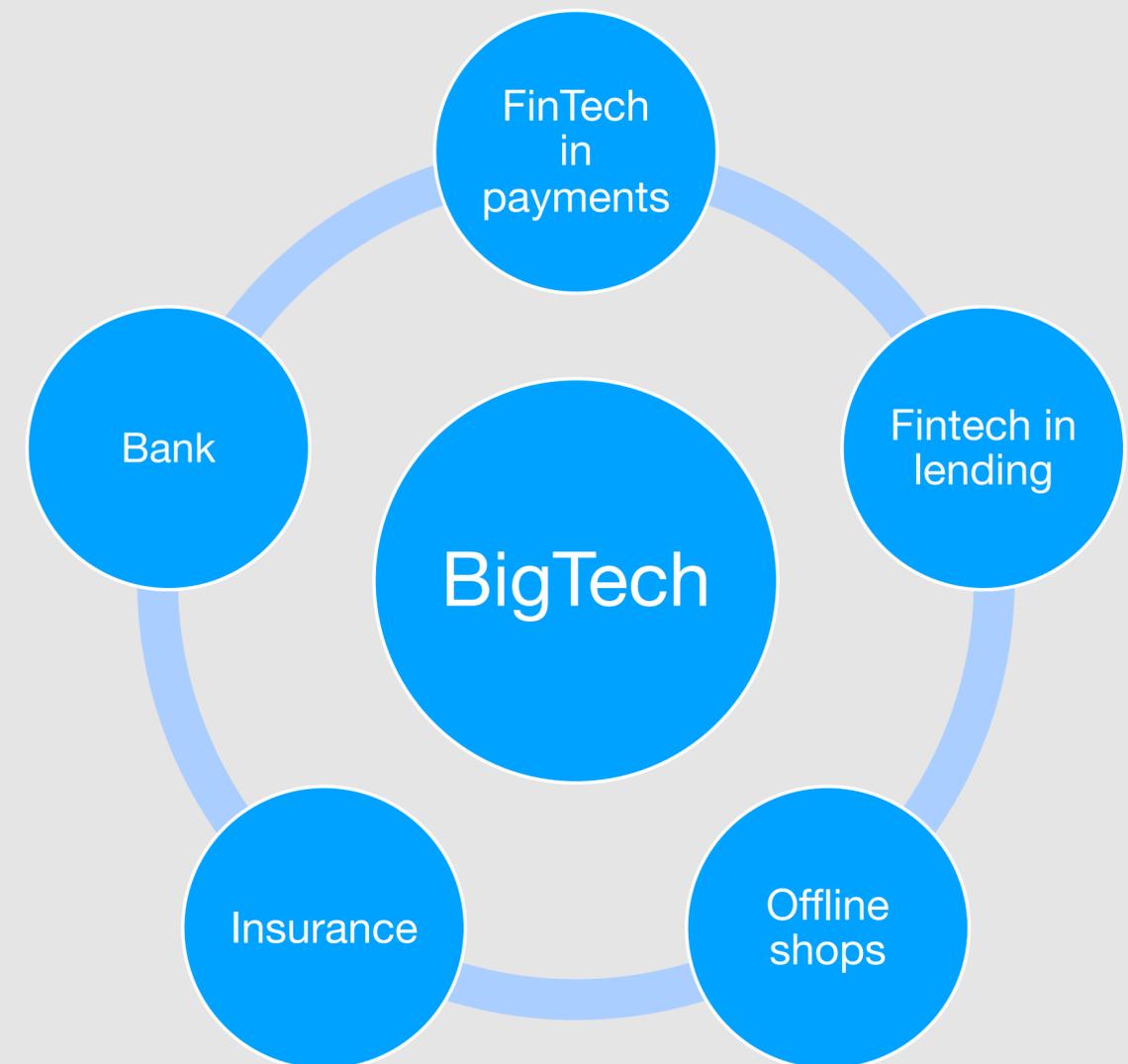
- *In this BaaS model telecom, e-commerce or fintech companies become potential clients and cash cows for banks*
- *Such platform economy can be high-volume revenue model with lower margin for banks*
- *In this case fintech are more likely to cooperate with BigTech*
- *Banks integrates their services into e-commerce companies.*

2 types of banks' business model and fintech's place in them

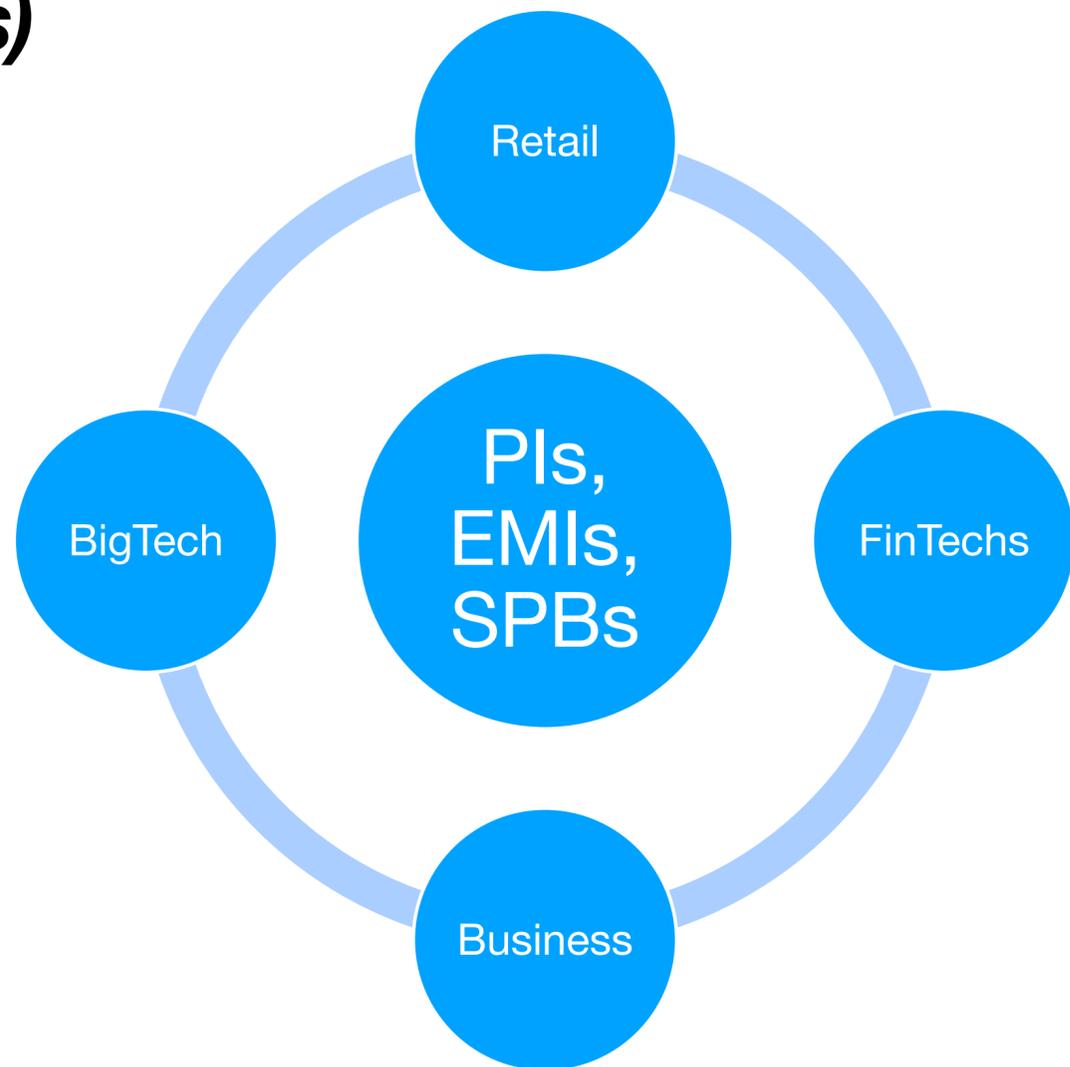
1. Bank as an ecosystem (for large institutions mostly)



2. Banks as a service (Baas)



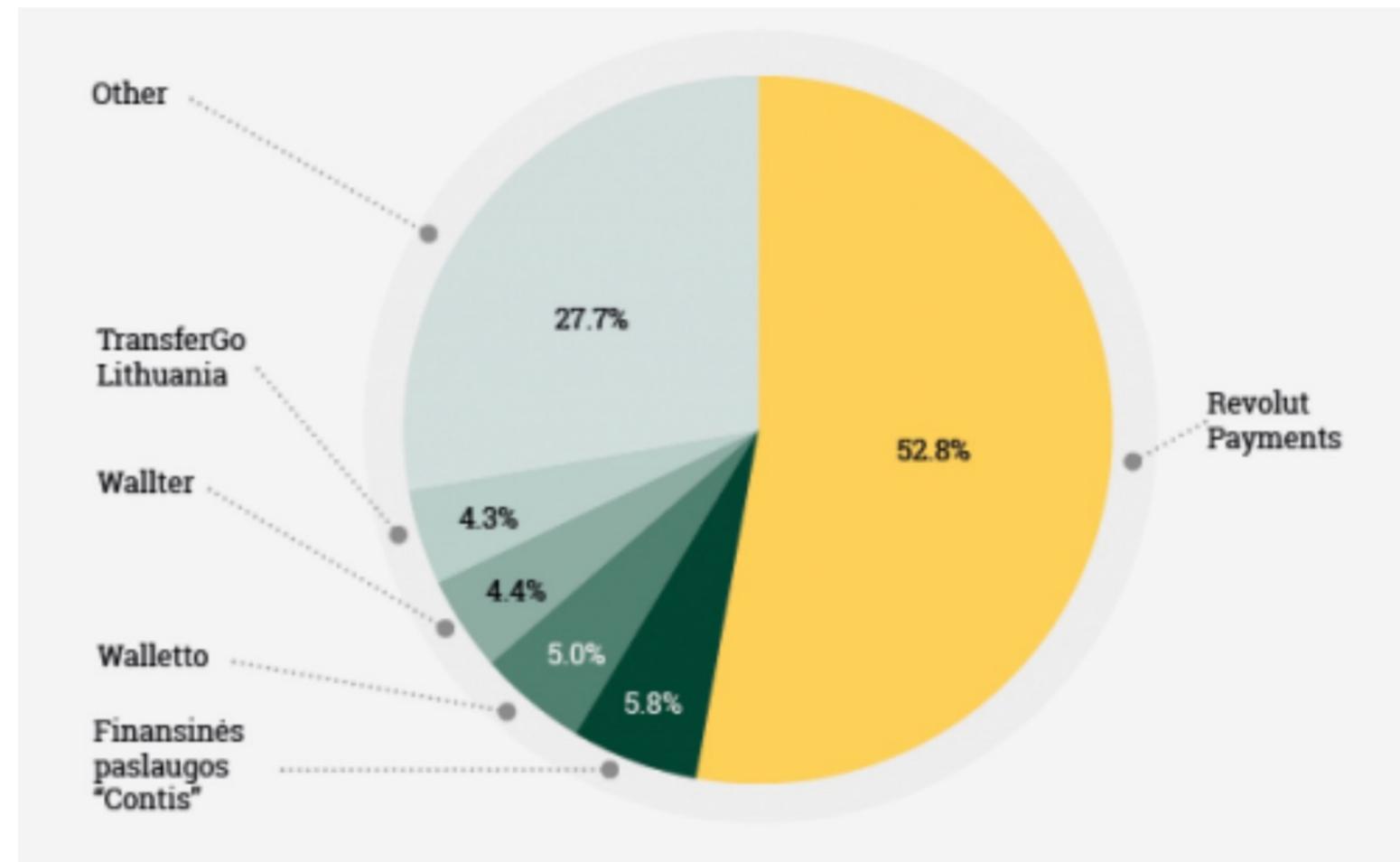
3d type of business model : Fintechs are handing over some of the functions of banks (*payment institutions, E-money institutions, special purpose banks*)



Example: Electronic Money Institutions in Lithuania

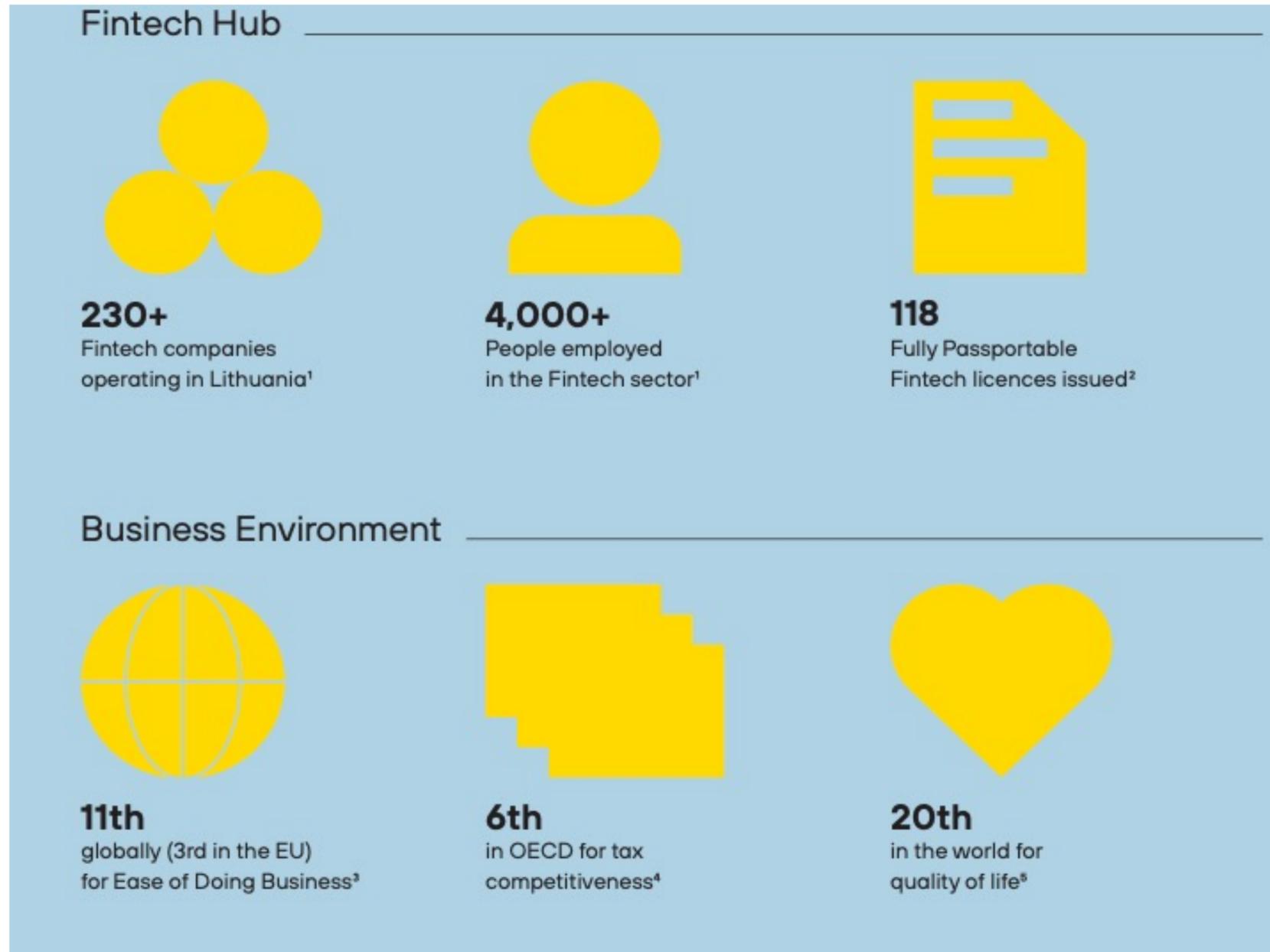


- In Q2 2021 the income from e-money issuance and payment services was 196 mln EURO



Main characteristics of fintech development in Lithuania

Why companies choose Lithuania



63%
Fintech-friendly regulation & infrastructure



43%
Ease of doing business



40%
Talent pool availability



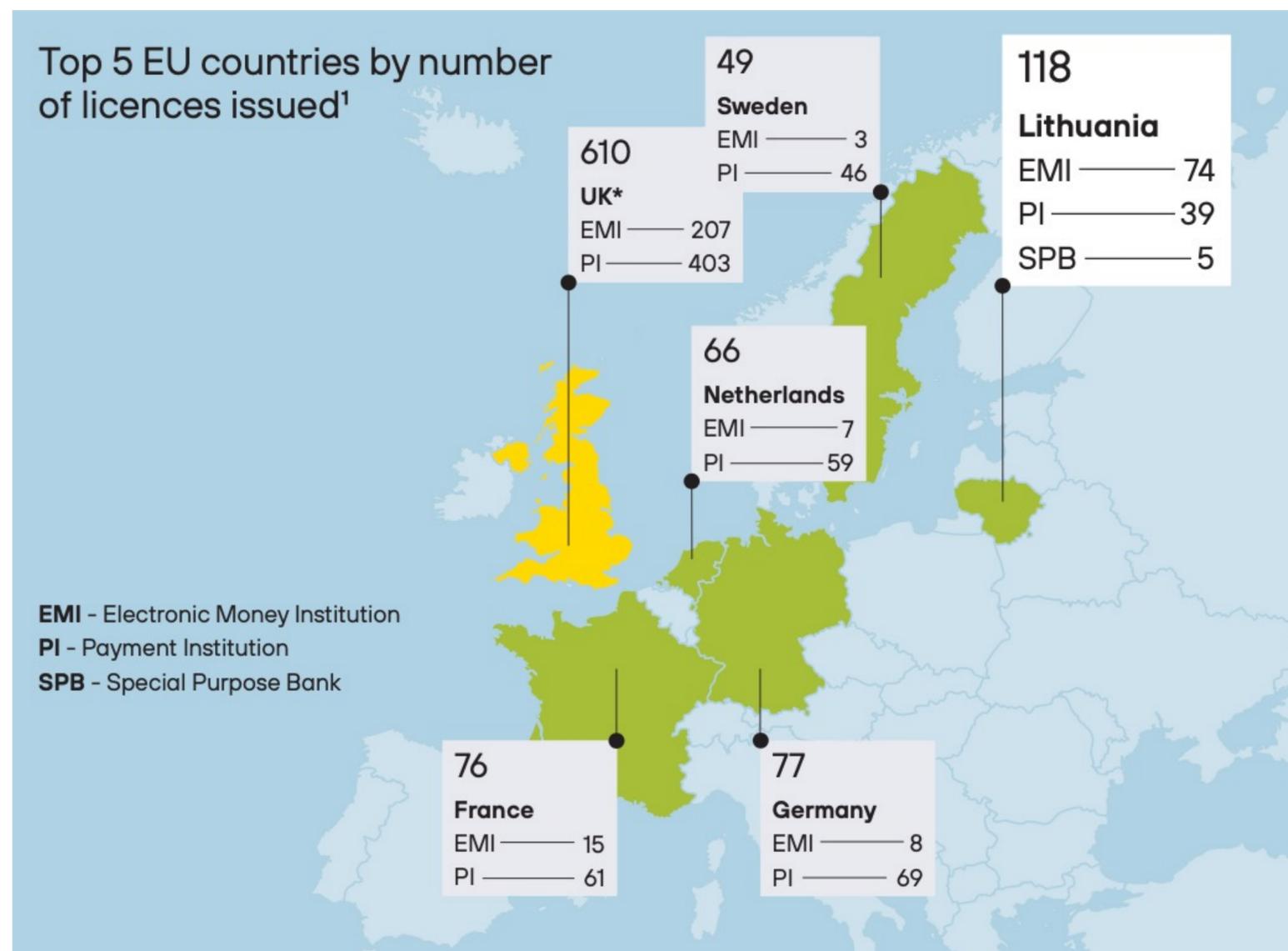
28%
Personal relations



25%
Target client market

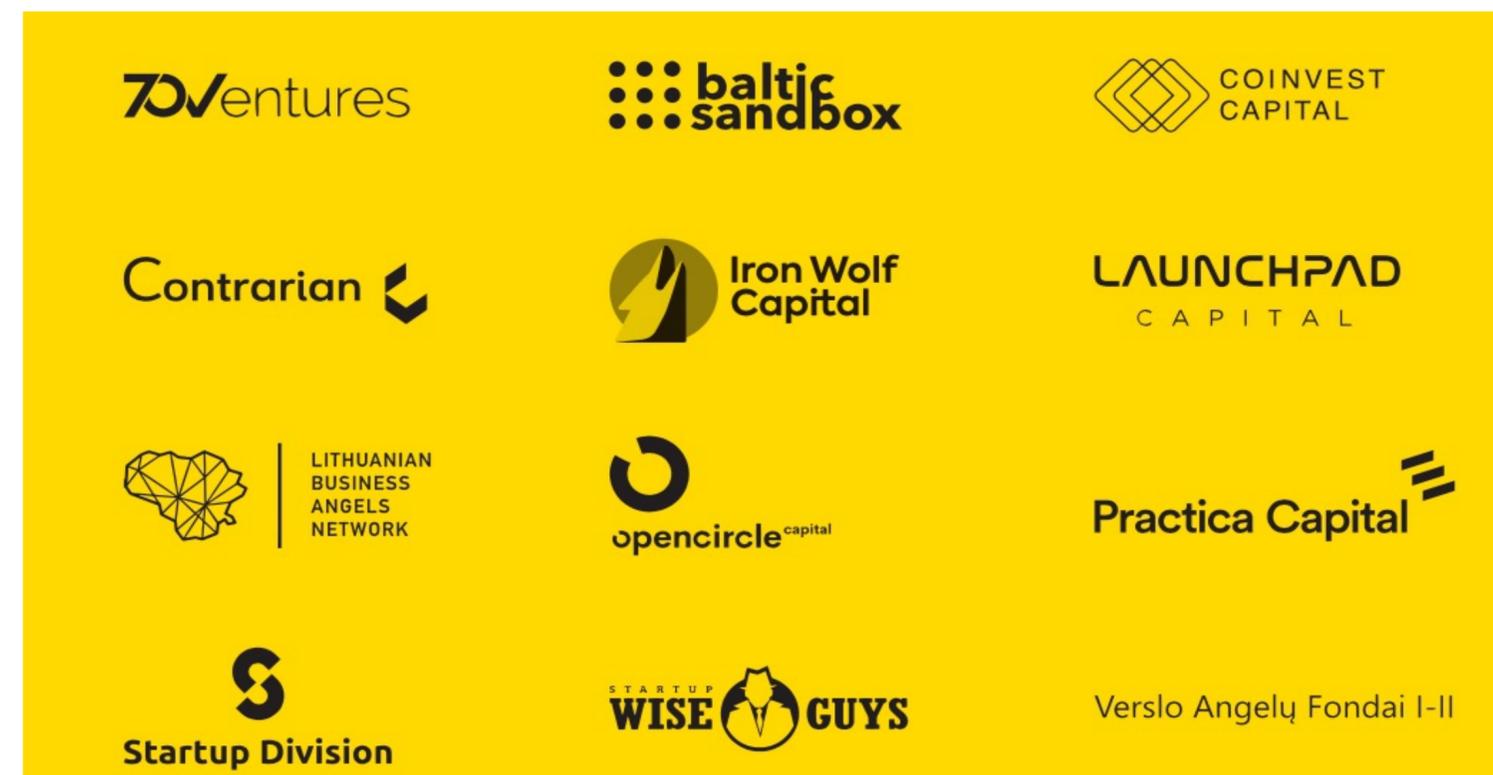
Lithuania's Fintech sector remains strong ***in payments and digital banking***. Almost 50% of players hold an Electronic Money Institution (EMI), Payment Institution (PI) or Special Purpose Bank (SPB) licenses

FinTech friendly regulation is one of the main reasons of Lithuania's fintech leadership



FinTech well developed infrastructure and Government support are another reasons of Lithuania's fintech leadership

Accelerators, funds and VCs active in Lithuania



Support from the agencies of development

<p>Invest Lithuania</p> <p>Invest Lithuania - the official agency for Foreign Direct Investment and Business Development</p>	<p>Startup Lithuania</p> <p>Startup Lithuania - a one-stop-shop for existing and future startups in Lithuania</p>	<p>Go Vilnius</p> <p>Go Vilnius - the official development agency of the City of Vilnius</p>
<p>Enterprise Lithuania</p> <p>Enterprise Lithuania - an agency for promoting entrepreneurship, supporting business development and fostering exports</p>	<p>MITA</p> <p>MITA - the main governmental institution responsible for implementing innovation policy in Lithuania</p>	<p>KAUNASTIC BUSINESS</p> <p>Kaunas IN - the official development agency of the City of Kaunas</p>
<p>INVEGA</p> <p>Invega - the agency responsible for investment and business guarantees</p>	<p>LVPA LIETUVOS VERSLO PARAMOS AGENTŪRA</p> <p>LVPA - the agency responsible for administering EU funds, including those for businesses and R&D</p>	<p>Klaipėda iD</p> <p>A non-profit city development agency supporting local and foreign businesses</p>

Specialized institutions / organizations

The Fintech Lithuania Association

FinTech HUB

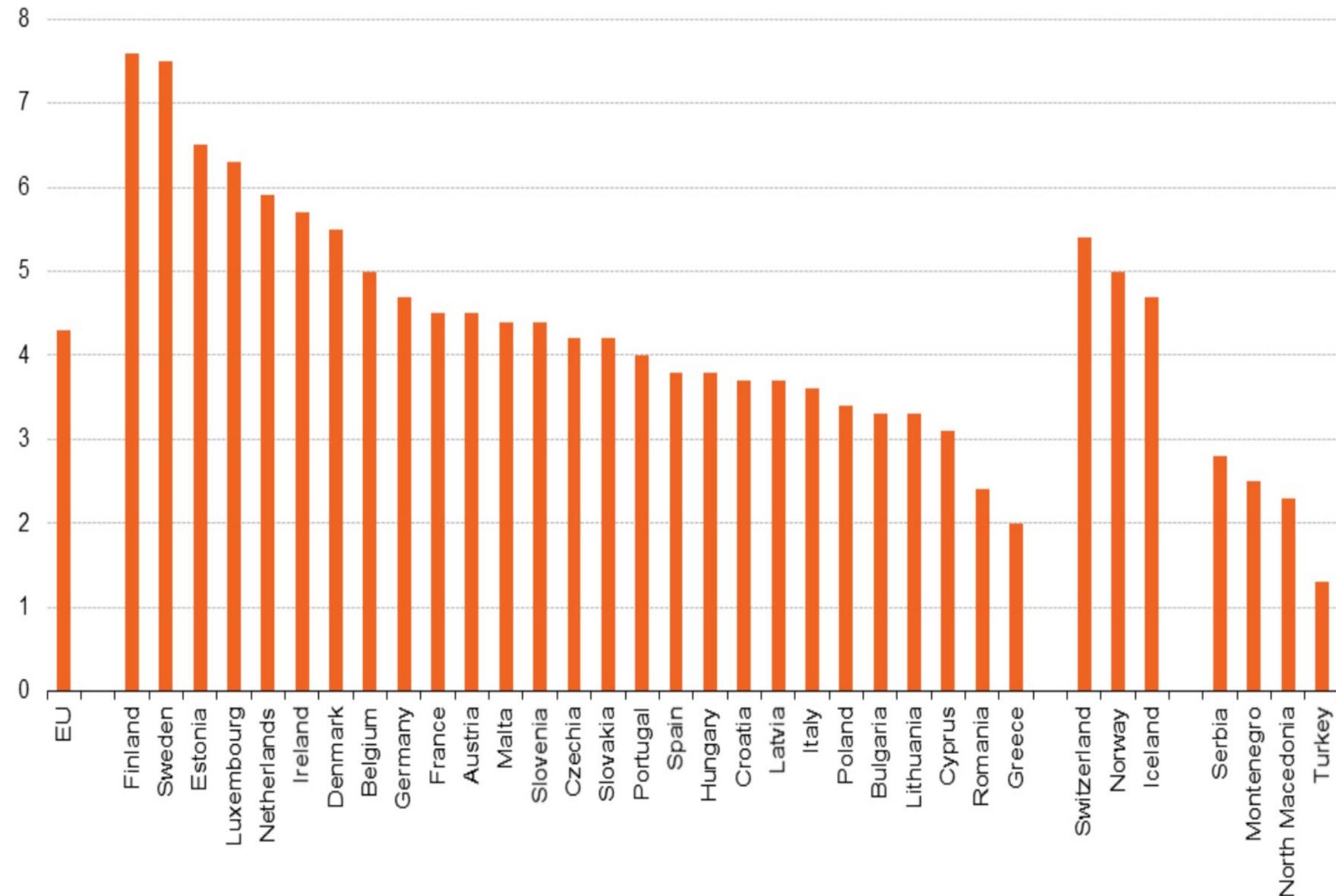
Rockit

SEB innovation center

High quality labor force is a the 3d reason of Lithuania's fintech leadership

The most popular degree subjects in Lithuania's universities are IT, Economics and Finance, which together attract over 10,000 new students to Lithuanian universities each year.

Proportion of ICT specialists in total employment, % 2020



Note: Details on data on ICT specialists estimated by Eurostat are available in Eurobase.

Data for Germany: provisional.

Source: Eurostat (online data code: isoc_sks_itspt)

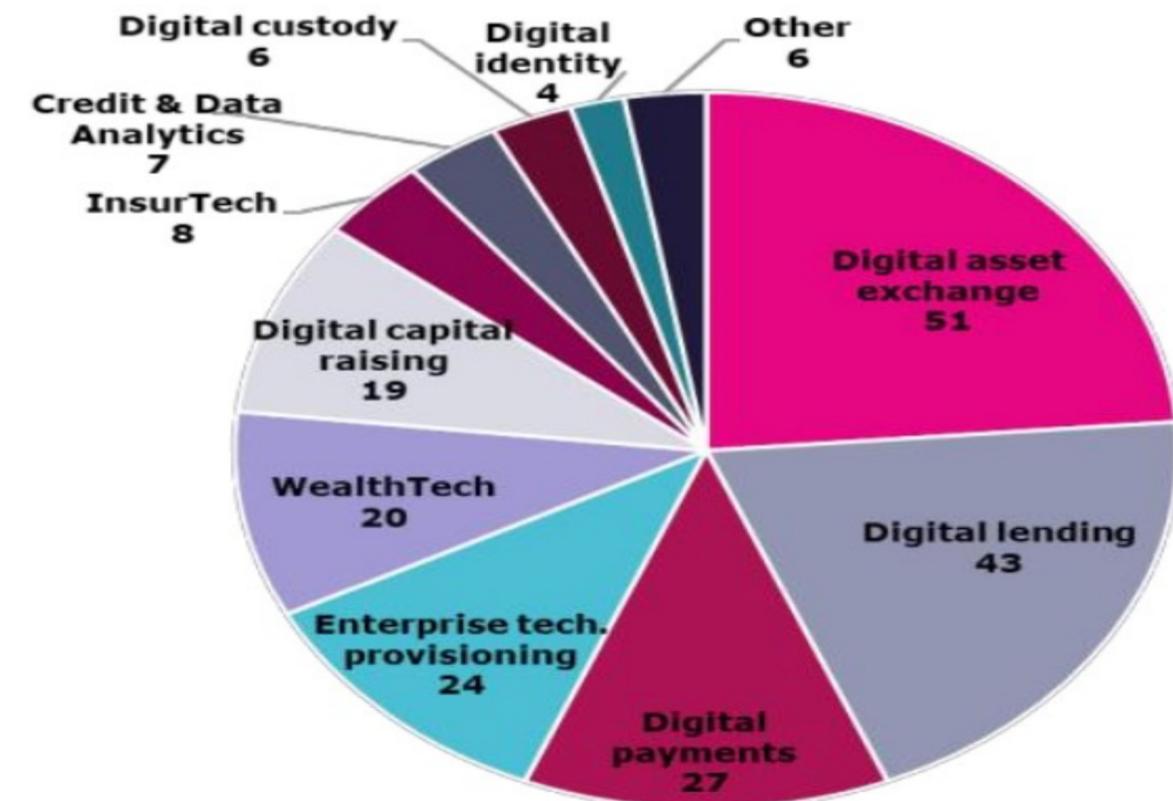
Main characteristics of fintech development in Estonia

Compared to the end of 2018, the number of FinTechs has increased by 1.5 times and reached 215 firms by the end of 2020.

- 1. Strong Estonian entrepreneurship culture.** The development of digital infrastructure (e.g., e-residency) and the spread of English as a business language have enabled to speed up the establishment of companies.
- 2. The ease of informal communication.** Most key ecosystem players know each other personally and this also makes it easy to connect with each other and with the Government.
- 3. A high level of interest among market players in the market development.** Fintech companies, interested public institutions, infrastructure players (incubators, accelerators and etc.) and other fintech players work on the market development very actively .

- FinTechs linked to the employment of distributed **ledger technology** and **digital lending** are the most popular spheres of FinTech
- The share of FinTech service providers concentrating on more traditional financial services has decreased in 2020.

Distribution of the number of Estonian FinTechs by type of activity



ENTERPRISE TECHNOLOGY PROVISIONING



WEALTHTECH



DIGITAL CAPITAL RAISING



REGTECH



ALTERNATIVE DATA & ANALYTICS



DIGITAL IDENTITY



DIGITAL PAYMENTS



DIGITAL LENDING



DIGITAL ASSET EXCHANGE



DIGITAL CUSTODY



DIGITAL SAVINGS



DIGITAL BANKING



INSURTECH

Main characteristics of fintech development in Uruguay

Uruguay– small Latin America country. 17th place in Findexable Index 2021

Main reasons of FinTech development:

1. Government programs of financial and digital inclusion development:

- from 2014 all wages and pensions are transferred to banks accounts
- in 2007 the country adopted the "One child –one laptop" program.

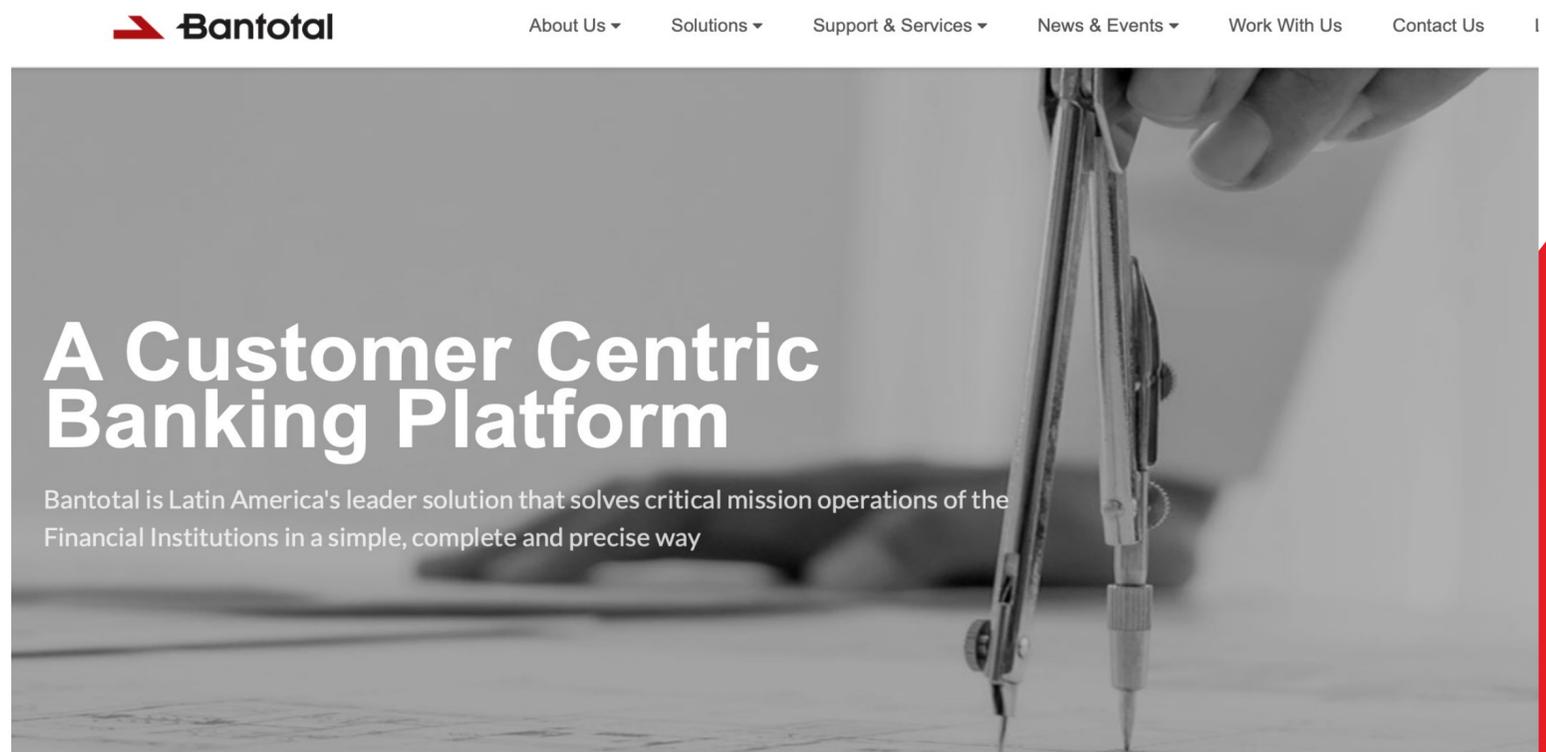
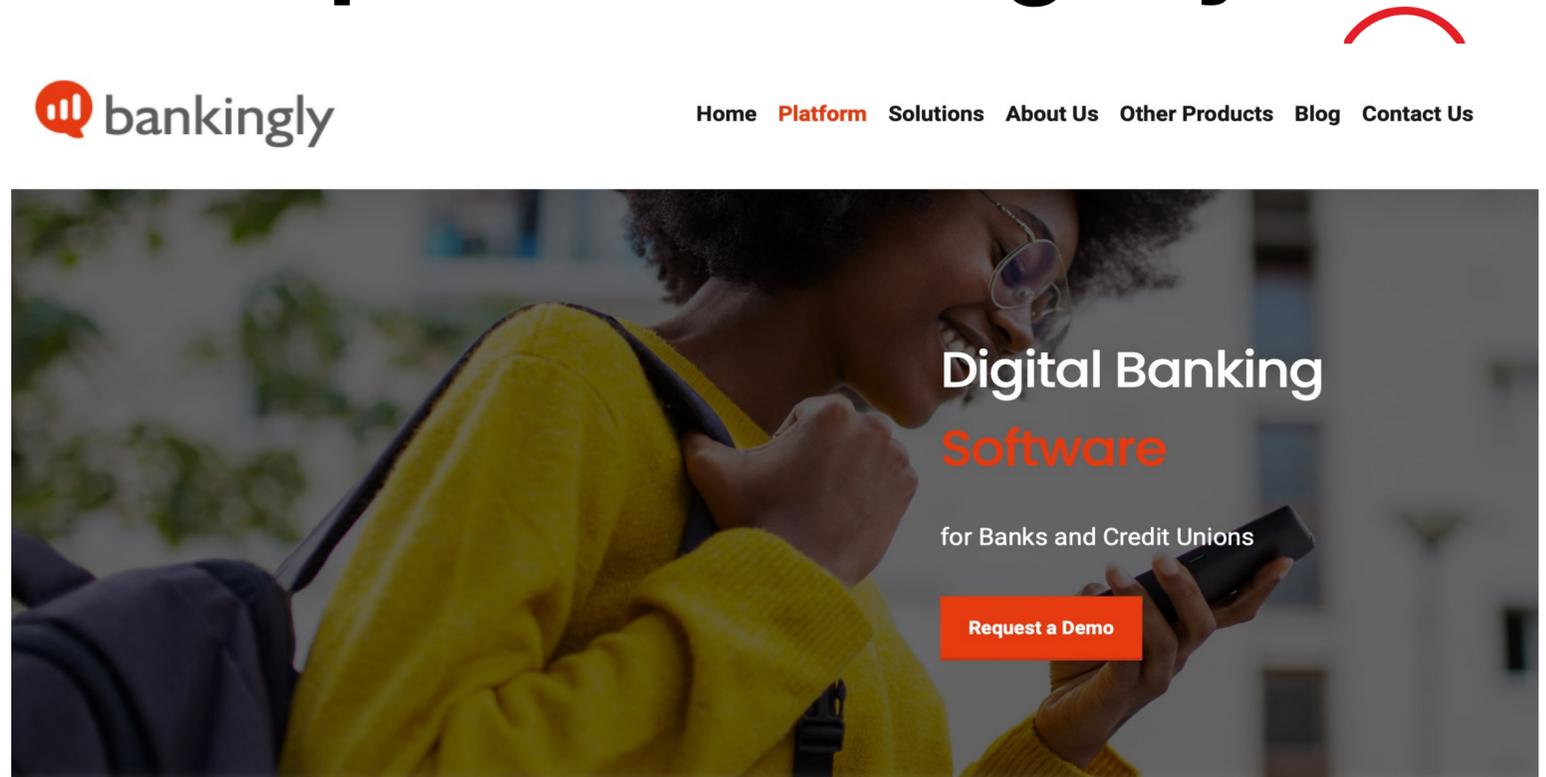
2. Banks as a center of ecosystem. Providing competitive and popular products.

Payment service "dLocal" expands the influence on different countries in Africa, Latin America and Asia.

3. FinTechs provides modern unified products for financial institutions that are in demand not only on the national market.

Bantotal provides digital banking operations in Latin America for financial institutions.

Bankingly develops consumer facing apps and online banking products for banking institutions.



Main characteristics of fintech development in Belarus

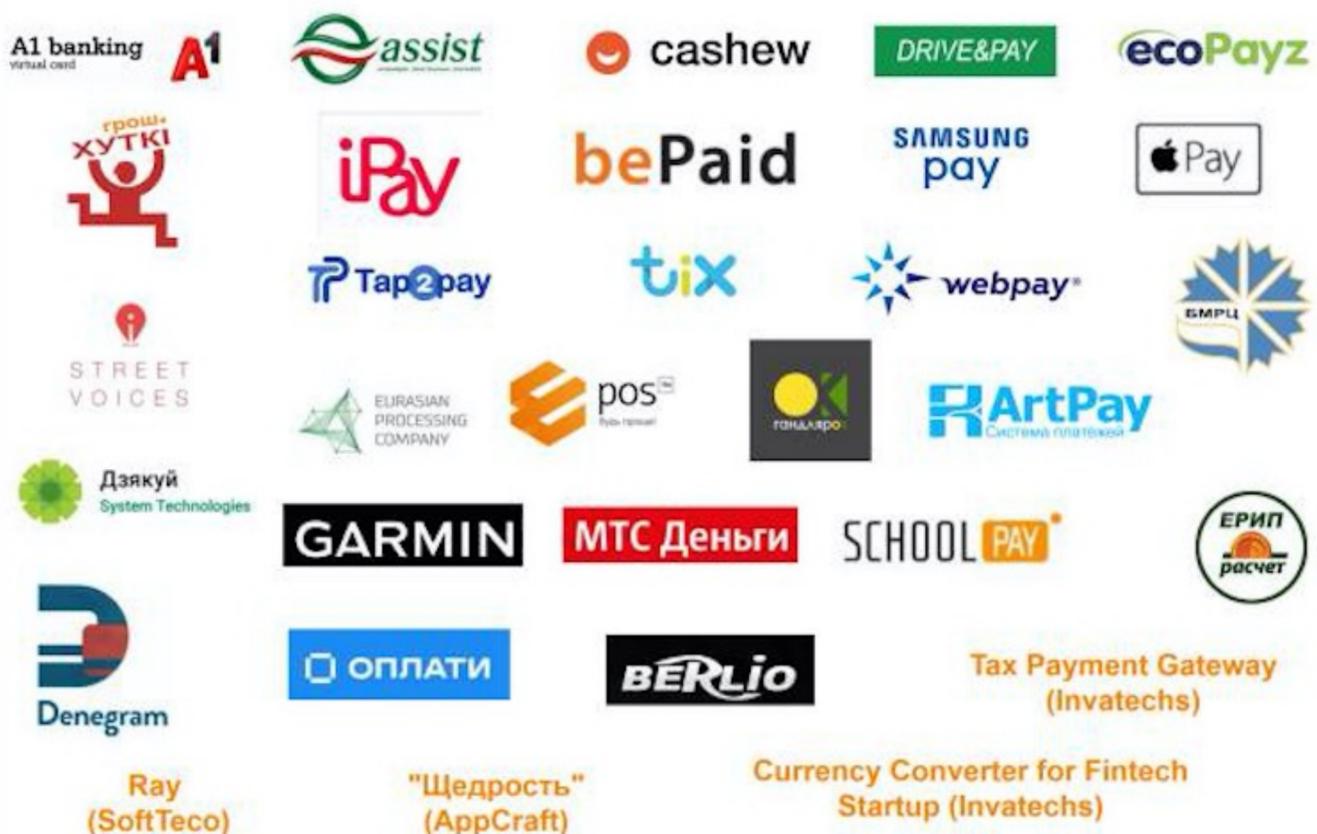
- Belarusian IT companies successfully develop a wide range of fintech products for domestic and foreign markets. A part of fintech producers prefers to use an outsource model of work while others create their own fintech services.
- There are companies that specialize in servicing Belarusian clients mostly. For example, ***Softclub IT company*** provides services for Belarusian banks.
- Some Belarusian commercial banks transform their business models and offer different online services.

Belarus FinTech Map

Created by:



Alternative payment services/currency converters/cash transfers



Developers of software products for Fintech



PFM services



Online accounting



P2P lending (crowdlending)



POS/ online lending



InsurTech

Niche is free

Social Trading

Investment Internet sites, ICO, cryptocurrencies, blockchain



Crowdfunding (rewards-based & donation)



Scoring/Debt Settlement/Payments Processing

Support of FinTech projects

Prerequisites for development

1. Strong IT sector:

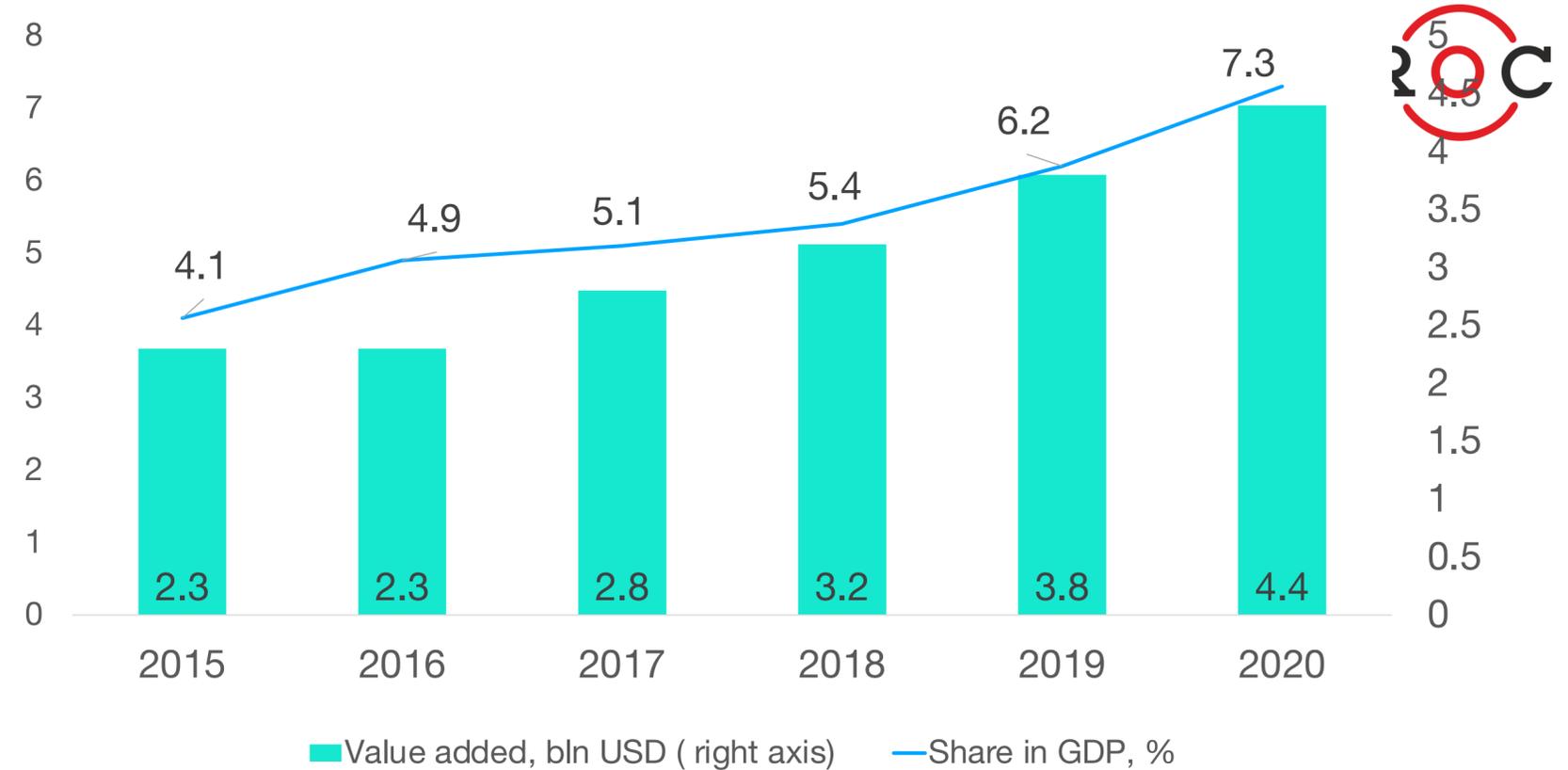
Because of the small domestic market and high competitiveness of the ICT sector, most services are exported. Total exports of ICT services in 2020 was 2.7 billion USD.

It is expected that by 2025 the share of the ICT sector will reach 10-11% of GDP.

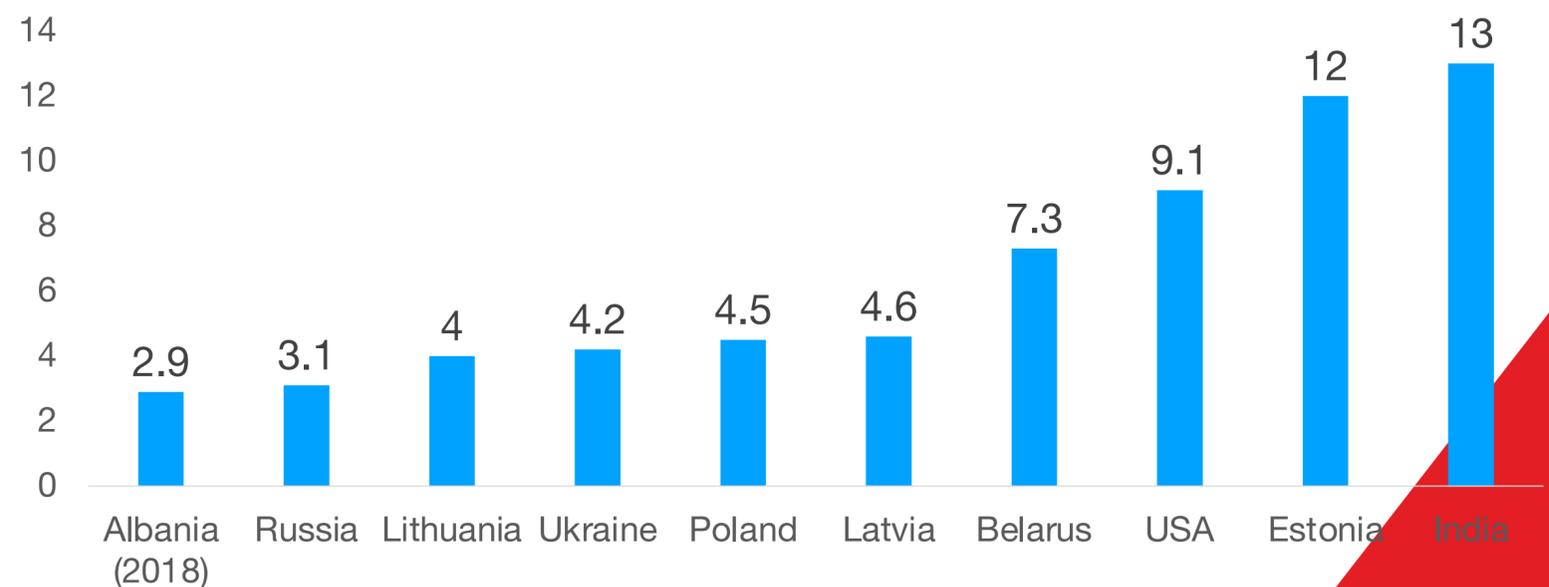
Ave. salary in IT sector is about 2200 USD (ave. salary in the country is less than 500 USD)

IT companies have tax incentives

ICT sector: Value added and share in DGP

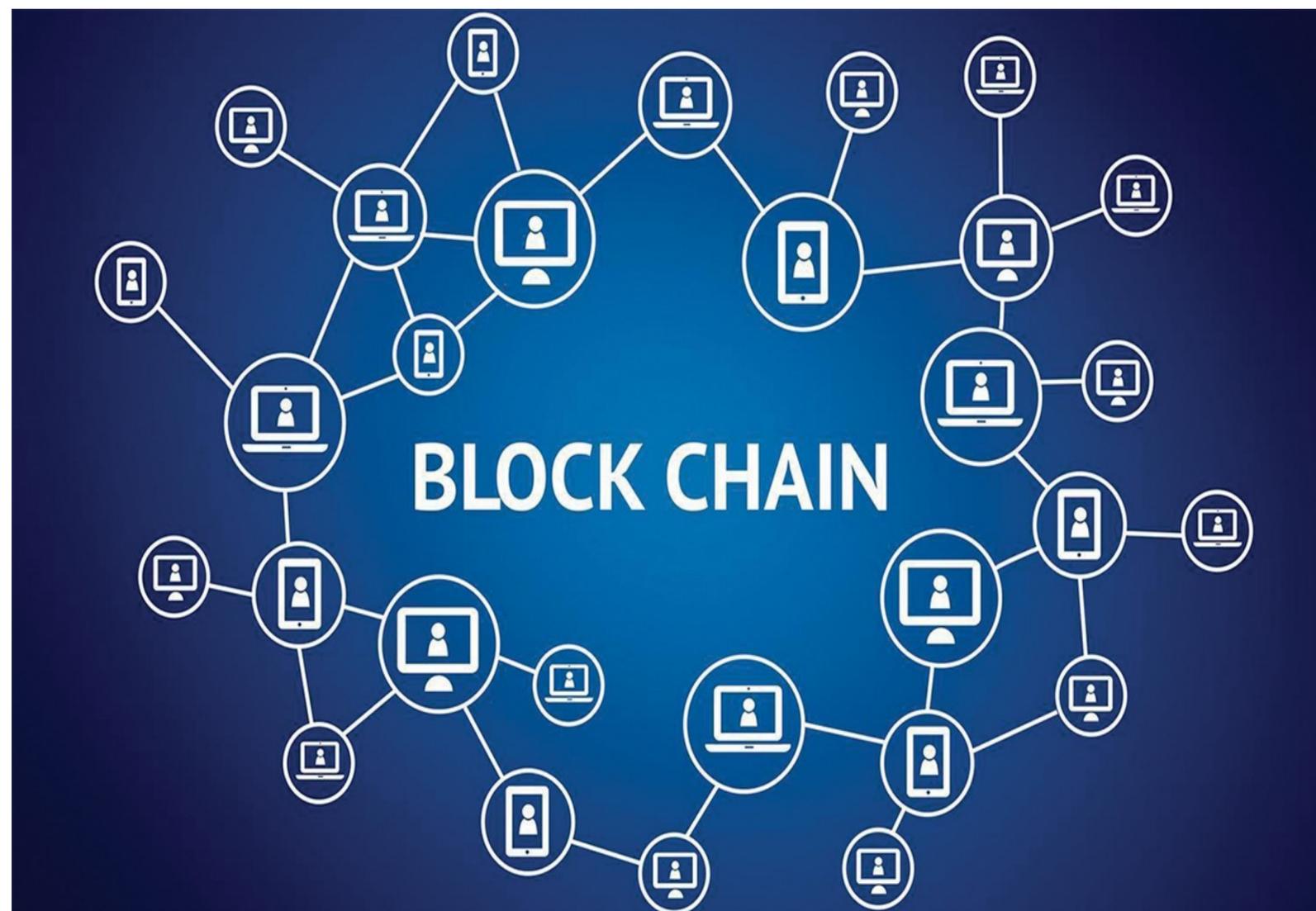


- ICT sector: Share in GDP by countries in 2020, %



2. Government regulation in FinTech

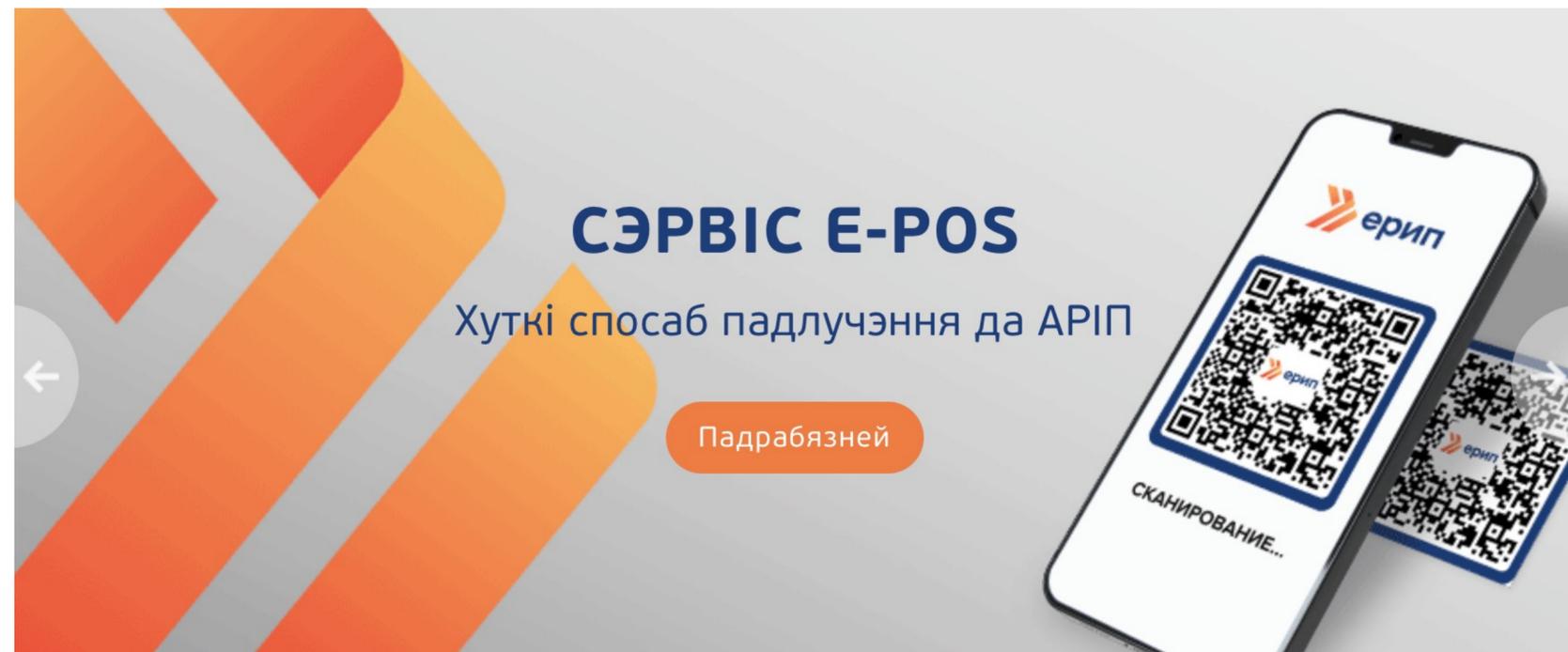
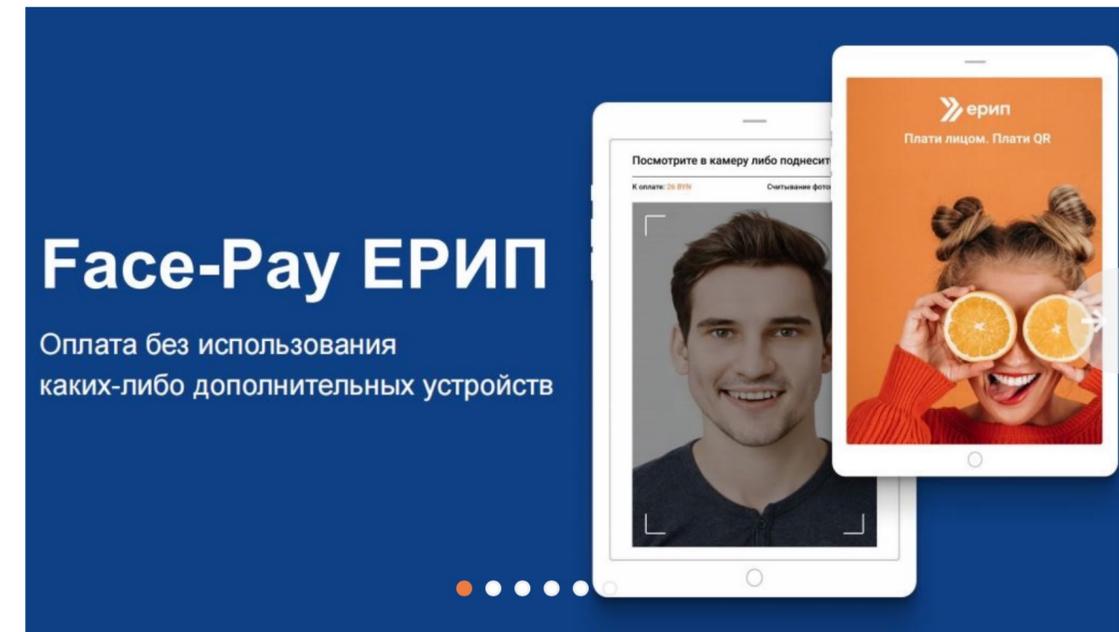
1. **Special Online Platform Development** for financial literacy will be created in 2021-2023
2. **Online lending development** : Presidential Decree # 196, 2021 “About Services of online-lending and leasing»
3. **Interbank Identification System** (2016)
4. **”Non-bank financial institution ”Single Settlement and Information Space”- ERIP**
5. A draft law On payment systems and services is expected to be approved, (But the process of approval has been going on about 4 years. For example, in Ukraine similar document was approved this year) .
6. **Presidential Decree of the Republic of Belarus #8 as from December 21, 2017 “On the Development of Digital Economy”**



ERIP (2008)

- ERIP manages the acceptance of payments from businesses and individuals
- The system includes 19500 service providers.
- More than 65,600 services are allowed for payments.
- **All payments are without any commissions for customers**

FACE-PAY ЕРИП



Customers can pay by 1) QR-codes, 2) choosing a service through the ERIP “tree” or by 3) identification of the customer’s face (pay-face)

Besides payment services and money transfers, the most popular segment in Belarus is online investment platforms, including blockchain - based projects.

Belarus is the first country in the world to legalize operations with crypto assets.

1. Several crypto exchanges are registered in the country (currency.com, iexchange).
2. Companies may create and distribute tokens, buy or sell cryptocurrencies, and do other operations with tokens through cryptocurrency platform operators, cryptocurrency exchange operators (Finstore).
3. Population can unlimitedly mine, buy/sell, and exchange cryptocurrencies.
4. The National Bank of Belarus has launched an information network on the basis of blockchain technology.

Crypto-exchange: Currency.com

Cryptocurrencies Indices Commodities Shares Currencies



Name		Price	Spread	Chg
DOGE/USD	TRADE	0.20495	0.00156	+2.370%
Bitcoin / USD	TRADE	56979.30	0.55	+4.030%
Ethereum / USD	TRADE	4302.43	0.06	+4.240%
Litecoin / USD	TRADE	197.40	0.14	+2.810%
MANA/USD	TRADE	4.94743	0.03186	+5.780%
Ripple / USD	TRADE	0.97652	0.01013	+4.770%

Crypto platform operator – Finstore

Smart partner (50 BYN, 24%, 33 months);(20 USD, 10,5% 3 years)

Belarusian railway - (100 USD, 7.5%, 3 years)

MA3 – Minsk (100 USD, 6%, 2 years)

Avangard Leasing (20 USD, 10,5%, 3 years)

Vitebsk Carpets (50 USD, 10.1%, 2 years)

Eneka (100 EUR / 100 USD, 10%, 3 years)

Leasing Resurs (10000, 6.5%, 5 years)

BFS (100 USD, 8%, 5 years)



SMART Партнер



ЛИЗИНГ РЕСУРС

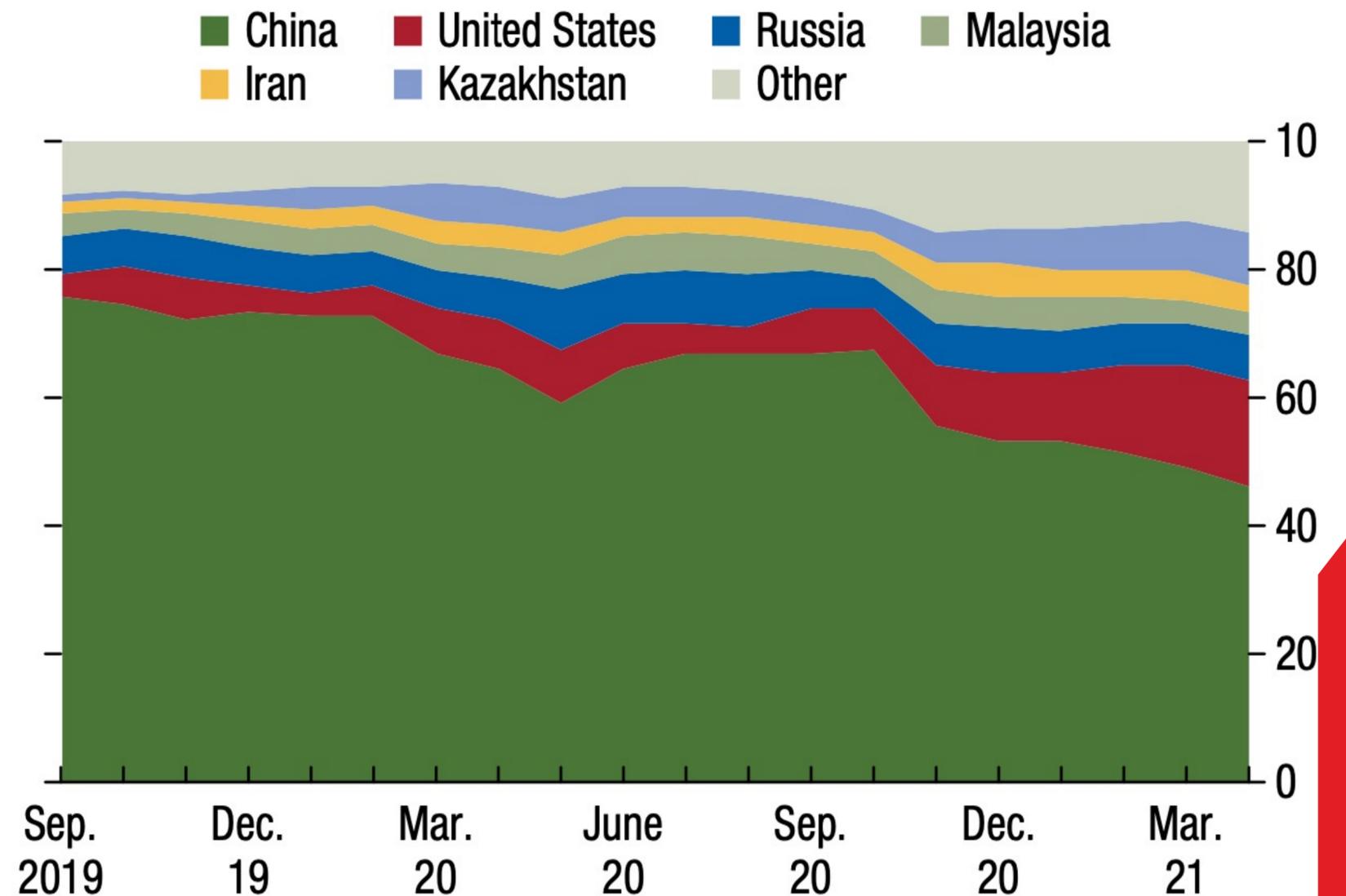


ЗАКРЫТОЕ АКЦИОНЕРНОЕ ОБЩЕСТВО
АВАНГАРД ЛИЗИНГ



Despite the fact that Belarus was the first state that introduced legislation of cryptocurrencies, crypto-mining is not very popular in the country

Bitcoin mining activity by country (leaders)



Main risks of crypto assets popularization

Portugal consumes 46.94 billion Kilowatt hours (kWh) of energy annually.

Comparing 100 Million Transactions in 2019



Bitcoin

95.16 Billion

kWh



Ethereum

4.29 Billion

kWh

1. Tax evasion
2. Reducing the impact of central bank monetary policy
3. Declining consumer protection
4. Uncontrolled capital inflow/ outflow
5. Energy consumption of some most popular cryptocurrencies mining is very high. Mining farms create threats of green economy development. Bitcoin farms spend 0.36% of world energy
6. Annual electricity consumption is estimated to reach the level of Ukraine or Argentina energy consumption.
7. High volatility of crypto assets without relation to economic business cycles or capital market behaviors create high risks for personal savings in crypto assets

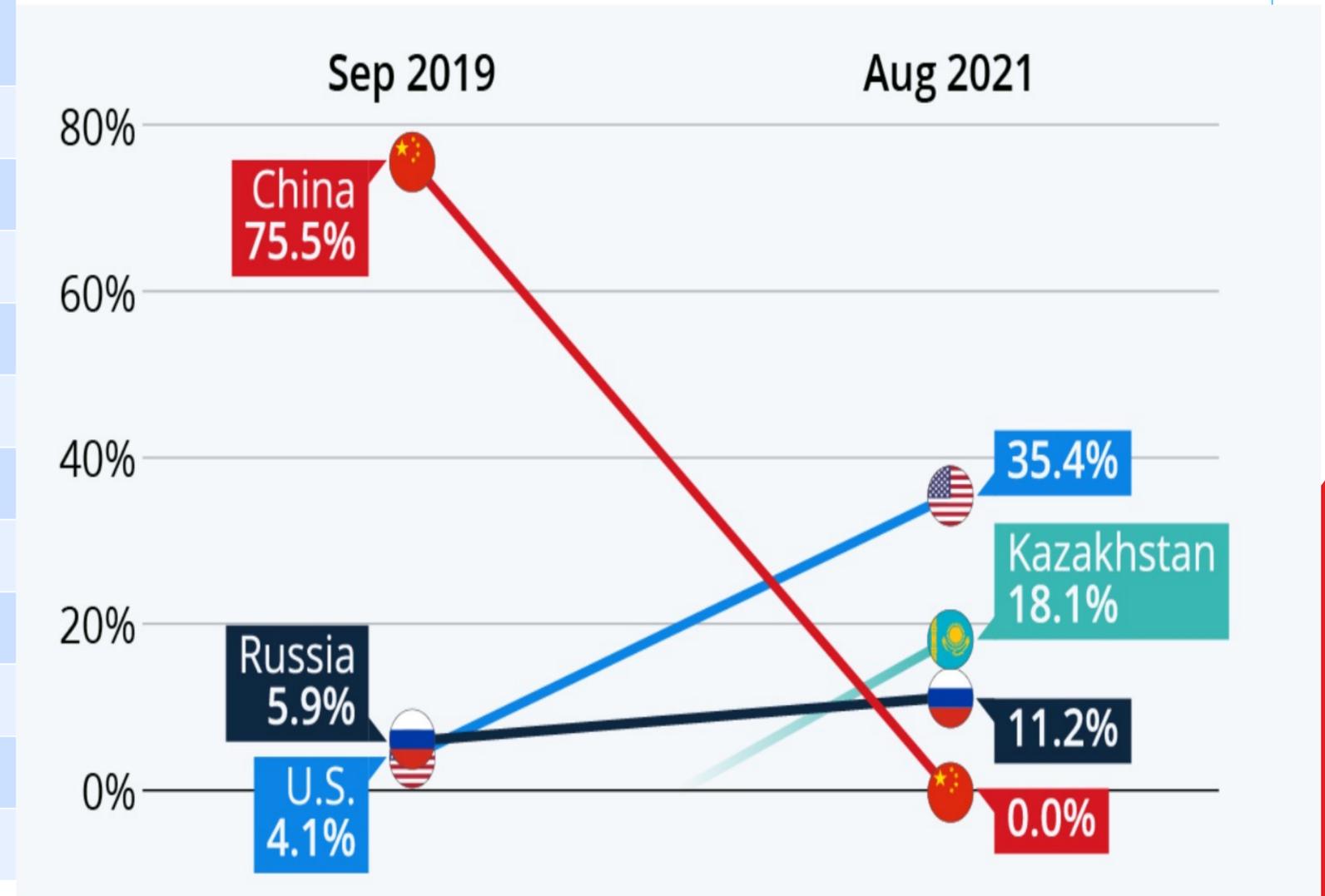
Green Currency Interactive Tool

How Green Is Your Currency? <https://xrpl.org/carbon-calculator.html>

Crypto-mining develops in countries with low level of electricity costs and/ or good operating conditions of crypto-farms

(March 2021 prices)	Electricity cost kWh
World households	0.135
World business	0.124
Kazakhstan households (March 2021)	0.041
Kazakhstan business	0.053
Russia households	0.062
Russia business	0.088
USA households	0.150
USA business	0.109
Belarus households	0.084
Belarus business	0.115
Estonia households	0.169
Estonia business	0.087
Albania households	0.106
Albania business	0.117

China's bitcoin crackdown changes the mining map



Prerequisites for development

3. Financial inclusion in Belarus is at a good level

Financial inclusion 2018, World Bank Group

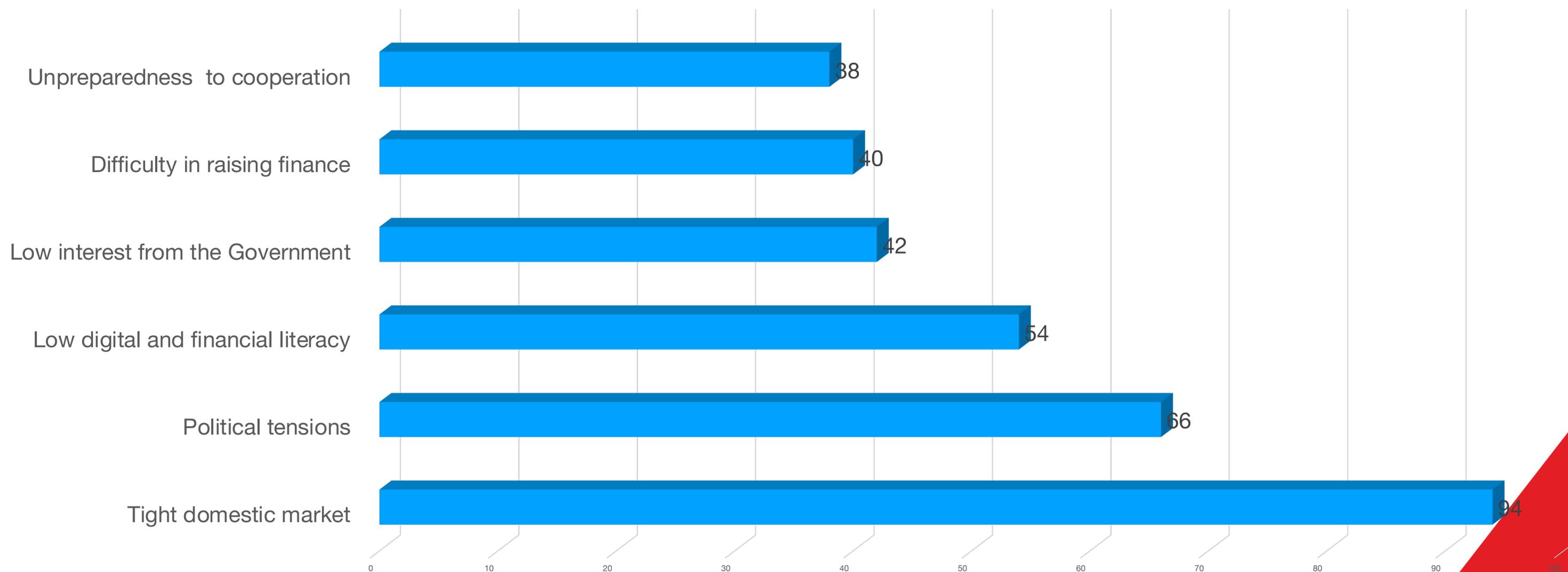


	Belarus	Uruguay	Estonia	Israel	Lithuania	Asia and Europe
Population (15 years + million)	7.9	2.7	1.1	6.2	2.5	
Financial institution account (% age 15+)	81.2	63.9	98	92.8	82.9	65.1
Financial institution account of adults living in rural area (% age 15+)	74.7	57	98.2	89.1	84.3	61.7
Financial institution account of women (% age 15+)	81.3	60.6	98.4	93.7	81	62.5
Financial institution account of adults out of labor force (% age 15+)	56.7	55.1	97.4	76.8	63.6	52.8
<u>Digital payments in the past year (% age 15+)</u>						
Made or received digital payments	78.7	59.3	96.8	90.8	77.6	60.4
Used an account to pay utility bills	36.4	19.7	72.3	51.9	33.2	23
Used the internet to pay bills or pay something online	45.7	30.9	74.8	50.4	55.9	30.6
Used a debit or credit cards to make a purchase	60.8	50.6	85.5	80.1	49.3	38.5
Saved at a financial institution (% age 15+)	22.2	11.8	46.9	53.4	34	14.4
Borrowed from financial institution or used credit	21.5	43.4	31.8	78.8	20.7	24.2

The difficulties of fintech ecosystem in Belarus, % of respondents



70% of FinTech companies think that they are not involved in ecosystem's life.



Fintech country ranking. Findexable ranking 2021

Ranking	Movement	Country	Region
21	▲ +1	Japan	Asia Pacific
22	▼ -6	France	Europe
23	▼ -8	India	Asia Pacific
24	▲ +3	Norway	Europe
25	▼ -2	Luxembourg	Europe
26	▼ -8	South Korea	Asia Pacific
27	▼ -2	Austria	Europe
28	▲ +6	United Arab Emirates	Middle East & Africa
29	▼ -3	Belgium	Europe
30	▲ +15	New Zealand	Asia Pacific
31	▲ +11	Kenya	Middle East & Africa
32	▼ -2	Mexico	Latin America & Caribbean
33	▲ +16	Latvia	Europe
34	▼ -6	Portugal	Europe
35	▲ +15	Taiwan	Asia Pacific
36	▼ -7	Poland	Europe
37	▼ -13	Italy	Europe
38	▲ +10	Cyprus	Europe
39	▲ +17	Bulgaria	Europe
40	▲ +4	Turkey	Europe
41	▼ -10	Czechia	Europe
42	▼ -9	Malta	Europe
43	▲ +4	Indonesia	Asia Pacific
44	▼ -7	South Africa	Middle East & Africa
45	▼ -5	Colombia	Latin America & Caribbean
46	▼ -10	Malaysia	Asia Pacific
47	▼ -12	Chile	Latin America & Caribbean
48	▼ -5	Ukraine	Europe
49	▼ -11	Argentina	Latin America & Caribbean
50	▲ +4	Slovenia	Europe
51	▲ +2	Hungary	Europe
52	new	Liechtenstein	Europe

Source: Global Fintech Index, findexable 2021

Ranking	Movement	Country	Region
53	▼ -7	Philippines	Asia Pacific
54	▲ +3	Romania	Europe
55	▼ -16	Thailand	Asia Pacific
56	new	Croatia	Europe
57	▼ -5	Nigeria	Middle East & Africa
58	▼ -17	Greece	Europe
59	new	Seychelles	Middle East & Africa
60	new	Slovakia	Europe
61	new	Rwanda	Middle East & Africa
62	▼ -7	Peru	Latin America & Caribbean
63	new	Georgia	Europe
64	▶ ±0	Uganda	Middle East & Africa
65	new	Saudi Arabia	Middle East & Africa
66	new	Kazakhstan	Asia Pacific
67	new	Belize	Latin America & Caribbean
68	new	Tunisia	Middle East & Africa
69	new	Ecuador	Latin America & Caribbean
70	▼ -19	Vietnam	Asia Pacific
71	▼ -13	Ghana	Middle East & Africa
72	▼ -12	Egypt	Middle East & Africa
73	▼ -8	Lebanon	Middle East & Africa
74	▼ -15	Belarus	Europe
75	new	Jordan	Middle East & Africa
76	new	Zimbabwe	Middle East & Africa
77	▼ -15	Pakistan	Asia Pacific
78	▼ -17	Bangladesh	Asia Pacific
79	new	Somalia	Middle East & Africa
80	new	Cameroon	Middle East & Africa
81	new	Iran	Middle East & Africa
82	new	Venezuela	Latin America & Caribbean
83	new	Ethiopia	Middle East & Africa

Conclusion – Fintech market in Belarus

Belarus FinTech environment is characterized by:

- 1) strong IT sector;
- 2) good level of financial inclusion;
- 3) highly qualified specialists;

There are 2 main areas that have been stimulated by the Government at a particular time: **payment services, crypto-investment platforms**

- Neo-banks, such as Tinkoff Bank in Russia or MONZO, Revolut in EU, are not presented in Belarus.

EUROPE				
Region Ranking	Overall Ranking	Movement		Country
1	2	▶ ±0		United Kingdom
2	5	▶ ±0		Switzerland
3	7	▶ ±0		Sweden
4	8	▼ -2		The Netherlands
5	9	▲ 2		Germany
6	10	▼ -6		Lithuania
7	11	▼ -1		Estonia
8	13	▲ 1		Finland
9	16	▼ -3		Spain
10	18	▼ -1		Ireland
11	19	▲ 13		Russia
12	20	▶ ±0		Denmark
13	22	▼ -6		France
14	24	▲ 3		Norway
15	25	▼ -2		Luxembourg
16	27	▼ -2		Austria
17	29	▼ -3		Belgium
18	33	▲ 16		Latvia
19	34	▼ -6		Portugal
20	36	▼ -7		Poland
21	37	▼ -13		Italy
22	38	▲ 10		Cyprus
23	39	▲ 17		Bulgaria
24	40	▲ 4		Turkey
25	41	▼ -10		Czechia
26	42	▼ -9		Malta
27	48	▼ -5		Ukraine
28	50	▲ 4		Slovenia
29	51	▲ 2		Hungary
30	52	new		Liechtenstein
31	54	▲ 3		Romania
32	56	new		Croatia
33	58	▼ -17		Greece
34	60	new		Slovakia
35	63	new		Georgia
36	74	▼ -15		Belarus

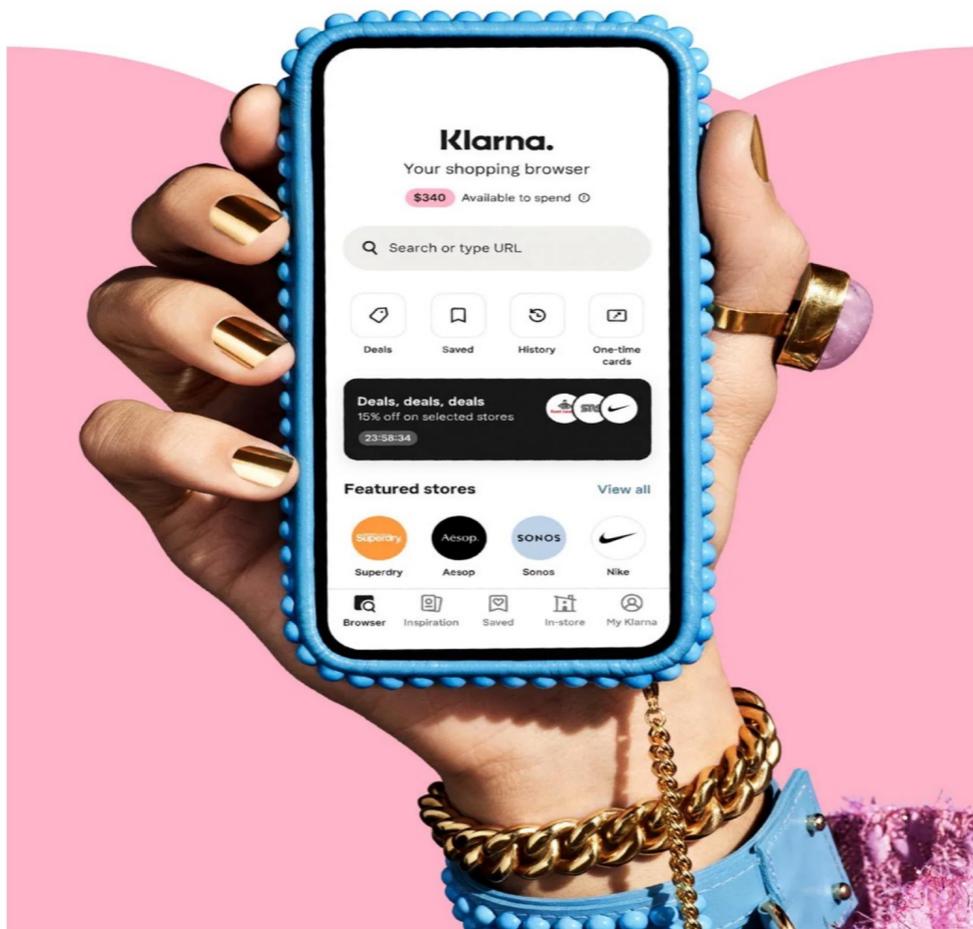
Strong IT sector, talent labor force and online payments popularity among population are important, but not the only factors for the fintech development.



In Belarus, next incentives are absent or poorly represented:

- **Government interest.** Adoption of legislation in the fintech field is fragmented and uneven
- Infrastructure for start-ups development (specialized associations, incubators, accelerators, fintech hubs)
- **Availability of financing** (lack of external and domestic funding incl. V capital)
- **Comfortable jurisdiction for foreign fintechs and domestic innovation financial institutions.** Today there are economic and political risks as well as inflexible legislation
- **Collaboration with foreign partners, study international expertise and international best practices adopting.**
- **Banks' cooperation with fintechs, startups and companies.** Banks prefer to build their own ecosystem and not ready to cooperate with fintech companies and fintech startups closely.
- **Implementation of best innovation products, business models**
- **Priorities of sustainable, including green development** in finance sphere
- Despite adaptive legislation Belarus is **not a center of crypto activities.**

Conclusion – Fintech market and banking system development in small countries



E-commerce, Telecom and Fintech can replace bank's activities in many spheres (**embedded finance**). Legislation about open API is supporting the process.

In many countries (including small ones) Government starts to interfere in FinTech market's work. National authorities allow the sector to grow and then decide what has to be more regulated because of customer protection needs. Authorities develop special FinTech market regulation, issue licenses etc.

Sandboxes is a good chance for fintech startups to launch the products on the limited number of customers and check its competitiveness.

For regulators sandboxes allow to control new innovations and identify viable companies and even fintech spheres (Lithuania)

Countries with small economies are more attractive for fintech if they have friendly markets for products distribution (Estonia, Lithuania – EU; Belarus – EAU).

BUT: there are successful stories when fintech companies from small countries became started to work on different markets. It is similar to IT or BigTech sectors development (EPAM, Amazon, Azon)

”Klarna, the Stockholm based fintech at a valuation of \$31bn, about the same as the public market capitalisation of Deutsche Bank”.

Conclusion – Fintech market and banking system development in small countries



Small countries can become attractive jurisdictions for FinTechs because of:

1. The ease of informal communication among Fintech players: everybody knows each other;
 2. High level of economic digitalization;
 3. Friendly business environment;
 4. Flexible and adaptive legislation;
 5. Access to finance;
 6. Supported infrastructure.
- In modern financial environment classic banks have to be transformed to the centers of financial services (banks as an ecosystem) or become a financial backend for BigTech companies (BaaS).
 - Online-banks, SPBs are new types of banking institutions in modern financial system.
 - In many cases Fintech service providers complete banks activities by providing less traditional financial services such as P2P lending, digital assets exchange.
 - FinTechs support traditional financial institutions in implementing modern digital transformation (Uruguay – Bantotal, Bankingly).

Thank you!!

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