



INSTITUTE OF WORLD ECONOMICS
Centre for Economic and Regional Studies
Hungarian Academy of Sciences

THE FINTECH CHALLENGE: DIGITAL INNOVATIONS FROM POST-COMMUNIST EU MEMBER COUNTRIES

Firm Behavior in Central and Eastern Europe
Productivity, Innovation and Trade

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Ádám Kerényi

Content of the presentation

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- Transition in 11 BCEE countries
 - ▣ The proportions of internet users
 - ▣ European Union as a “Convergence Machine”
 - ▣ The impact of cohesion policy 2007-2023: model simulations with Quest III
 - ▣ Labor productivity
 - ▣ DESI Index
- What is Fintech?
- Fintechs in BCEE region
 - ▣ Overview of fintech in Hungary

1.1 post-communist EU member countries (BCEE)

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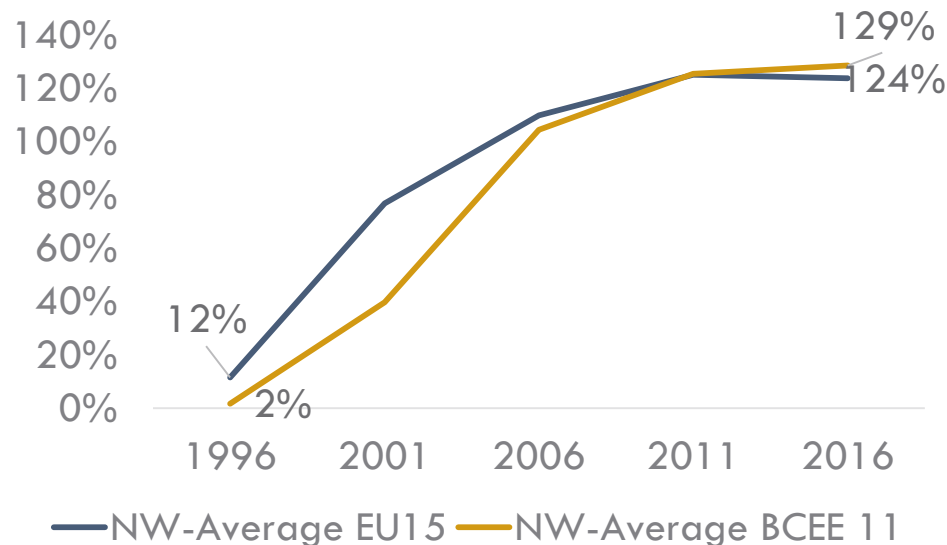


	Territory (km ²)	Population on 2008 January - total	Population on 2016 January - total
Bulgaria	111 000	7 518 002	7 153 784
Czech Republic	78 870	10 343 422	10 553 843
Estonia	45 230	1 338 440	1 315 944
Croatia	56 590	4 311 967	4 190 669
Latvia	64 490	2 191 810	1 968 957
Lithuania	65 300	3 212 605	2 888 558
Hungary	93 030	10 045 401	9 830 485
Poland	312 680	38 115 641	37 967 209
Romania	238 390	20 635 460	19 760 314
Slovakia	49 036	5 376 064	5 426 252
Slovenia	20 270	2 010 269	2 064 188
Total	1 134 886	105 099 081	103 120 203
European Union (28 countries)	4 511 825	500 297 033	510 278 701
Rate	25,2%	21,0%	20,2%

The proportions of internet users

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Mobile cellular subscriptions (per 100 people)	1996	2001	2006	2011	2016
Bulgaria	0%	20%	108%	142%	126%
Czech Republic	2%	68%	120%	125%	118%
Estonia	5%	47%	123%	136%	145%
Croatia	1%	40%	101%	119%	105%
Latvia	1%	28%	98%	110%	134%
Lithuania	1%	29%	143%	160%	145%
Hungary	5%	49%	99%	118%	121%
Poland	1%	26%	96%	131%	139%
Romania	0%	17%	75%	115%	116%
Slovak Republic	1%	40%	91%	111%	128%
Slovenia	2%	74%	91%	106%	115%
NW-Average BCEE 11	2%	40%	104%	125%	129%
NW-Average EU15	12%	77%	110%	125%	124%

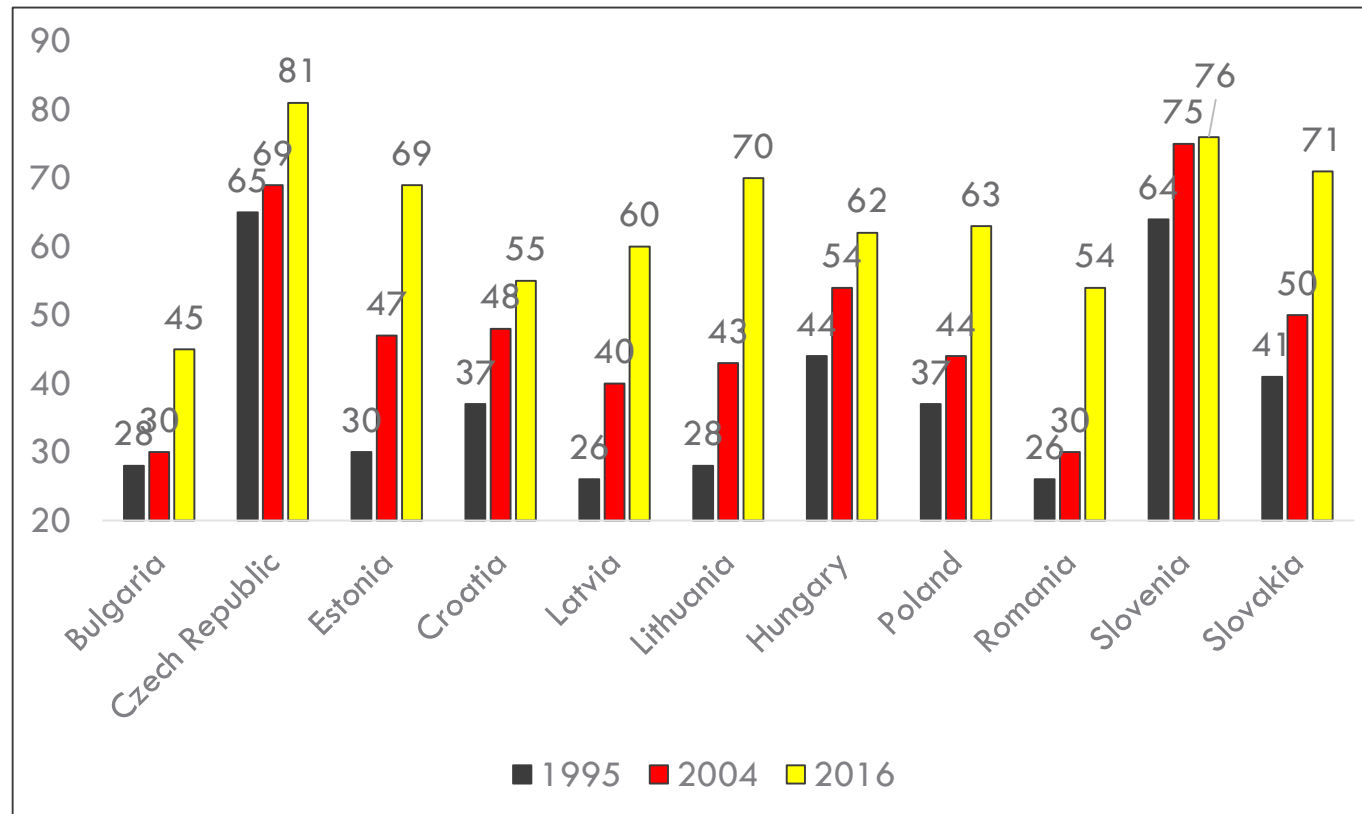


Source: World Bank 2018

European Union as a “Convergence Machine”

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Volume indices of real expenditure per capita in PPS (EU15=100)



Eligibility criteria:

- Regions: GDP/capita a less than 75% of EU average
- Individual countries: GNI/capita less than 90% of EU average

Source: Eurostat

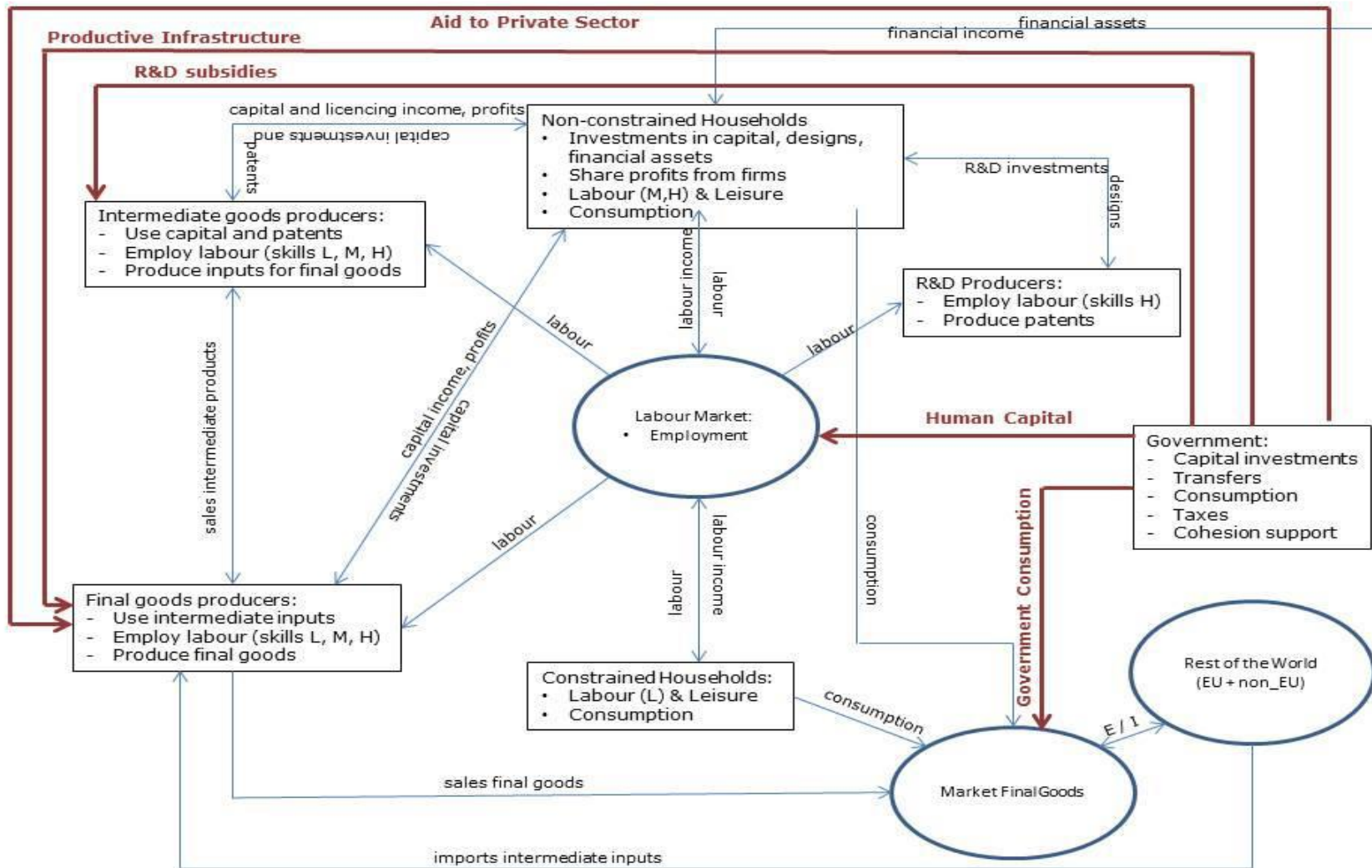
The QUEST model and its impact channels

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- The model is regularly used for the **analysis** of key **fiscal and monetary policy scenarios**, for **assessing** the **impact** of the **structural reforms** for contributing to the economic projections of DG ECFIN.
- Measure the macroeconomic potential impacts of the cohesion and rural funds invested in 27 Member States during **the period 2007-2015**.
- The model simulates the impact of policy interventions on a large number of economic variables relevant to cohesion and rural development policies such as GDP, employment, wages, productivity or investment from the private sector

QUEST model

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The impact of cohesion policy 2007-2023

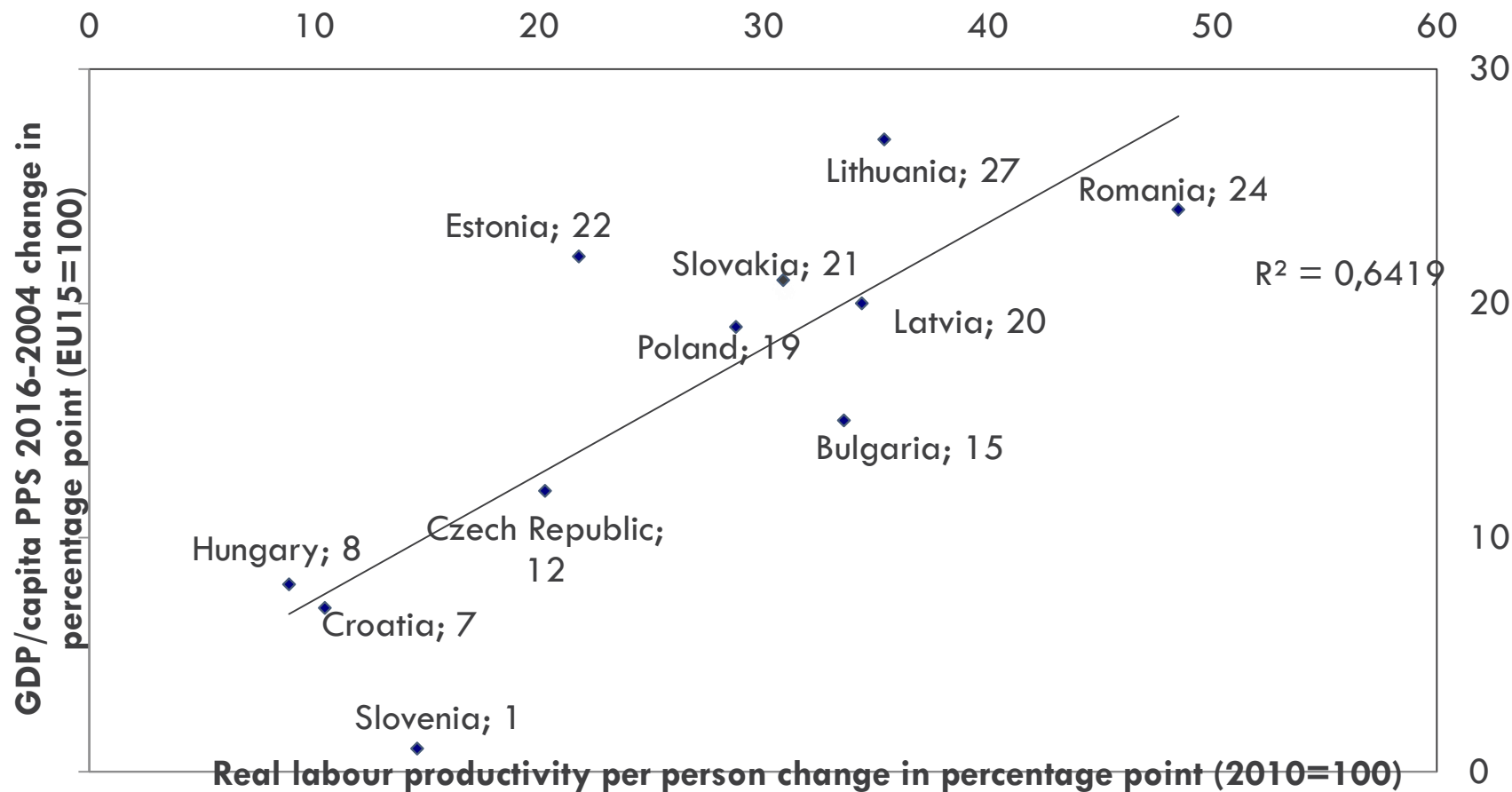
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Impacts on GDP of cohesion and rural development policies, 2007-2023 (% deviation from baseline)

	GDP 2015	A	C	D	E	H	I	J
			TFP 2015	Wages 2015	Investments 2015	TFP 2023	Wages 2023	Investments 2023
Bulgaria	3,8	Bulgaria	4,0	2,7	0,5	1,9	2,7	2,4
Czech Republic	3,8	Czech Republic	3,8	2,9	0,7	2,3	2,7	2,2
Romania	3,8	Romania	3,9	2,8	0,0	2,2	2,7	2,6
Latvia	4,5	Latvia	5,1	4,0	1,7	2,4	3,6	2,9
Hungary	5,3	Hungary	4,9	4,2	1,3	2,5	3,4	2,8
Poland	4,3	Poland	5,1	4,0	0,1	3,5	3,8	2,3
Estonia	0,7	Estonia	0,8	0,6	0,5	0,4	0,5	0,8
Lithuania	5,1	Lithuania	6,2	4,9	1,0	3,9	5,0	3,3
Slovakia	3,5	Slovakia	3,6	2,7	0,6	1,8	2,4	1,7
Slovenia	2,4	Slovenia	2,7	1,9	0,6	1,4	1,9	1,7
10 BCEE countries unweighted average	3,7	Non-weighted average of the 10 countries	4,0	3,1	0,7	2,2	2,9	2,3

Labor productivity

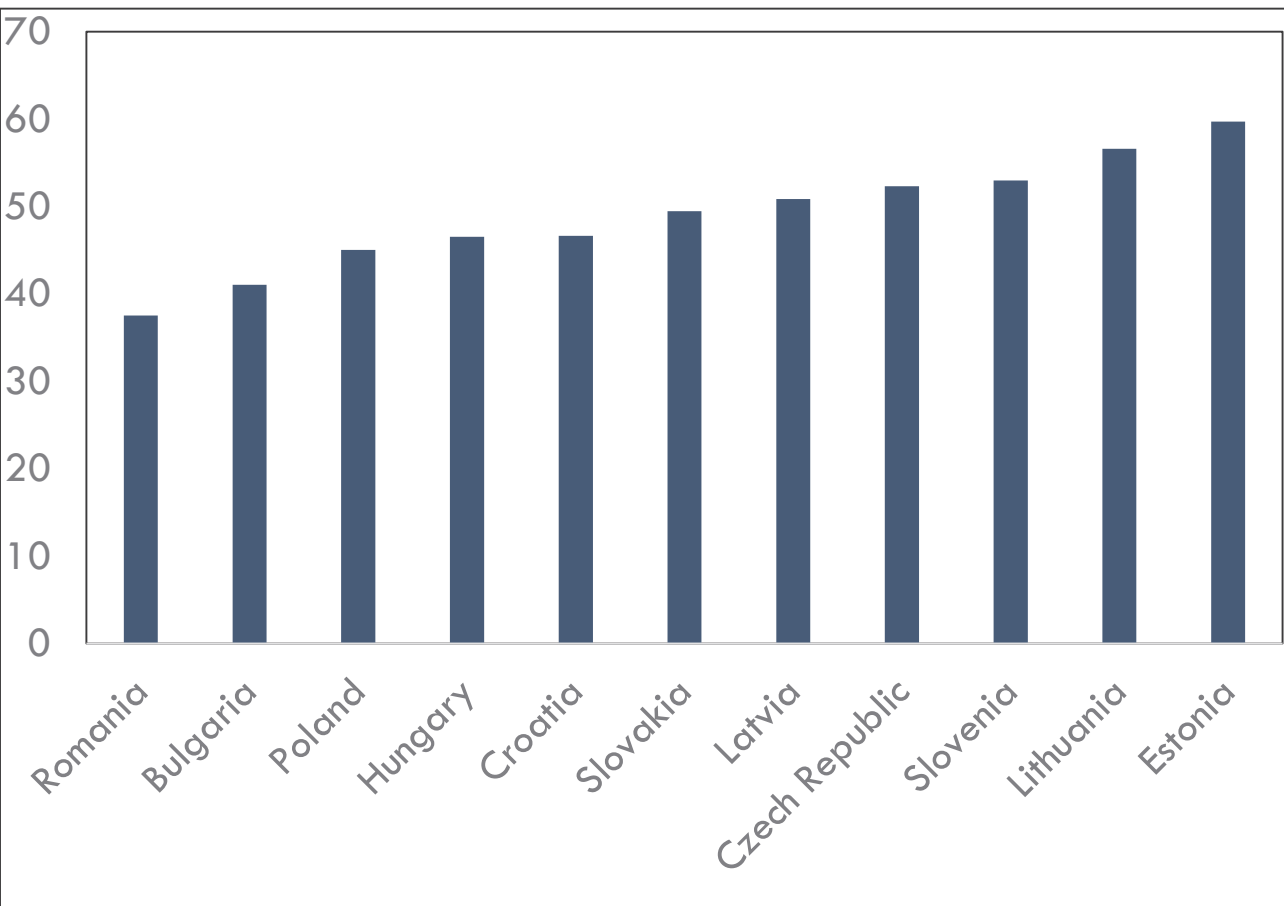
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Source: Eurostat 2018

The Digital Economy and Society Index (DESI) index

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Composite index tracks the evolution of EU Member States, across five main dimensions:

1. Connectivity,
2. Human Capital,
3. Use of Internet,
4. Integration of Digital Technology,
5. Digital Public Services

Source: European Commission, Digital Scoreboard (2018)



What is Fintech?

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- **Digital is the new normal** in financial sphere also.
- ‘FinTech’ is defined as **‘technologically enabled financial innovation** that could result in **new business models, applications, processes or products** with an associated **material effect** on **financial markets and institutions** and the provision of financial services’.

How fintechs can foster economic growth ?

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- FinTech can offer a range of benefits:
 - ▣ it can enhance **consumer choice and experience**,
 - ▣ **reduce the costs** of financial products and services,
 - ▣ promote **financial inclusion**,
 - ▣ **drive efficiencies** in the provision of financial services,
 - ▣ support more **effective compliance** and reporting processes.

Push and pull factors

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Mobile penetration & digitalization

Big data

Crowd solutions, Open platforms

Machine learning

Decreasing cost of computing

Artificial intelligence

Blockchain

New generations
(Digital natives)

Extreme impatience

Experience focus

Sense of „specialness“

Trust-decrease
towards banks

Decreasing cost of computing

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	Computer used by MIT (1967)	Laptop (2004)	iPhone5S (2015)
Processor speed (unit: MIPS)	0,25	1 000	18 200
Memory (unit: KByte)	144	256 000	16 777 216
Retail price (unit: USD in 2003)	\$11 000 000	\$2 000	\$399



Adair Turner

Chairman, Governing Board

Former Chairman, United Kingdom
Financial Services Authority

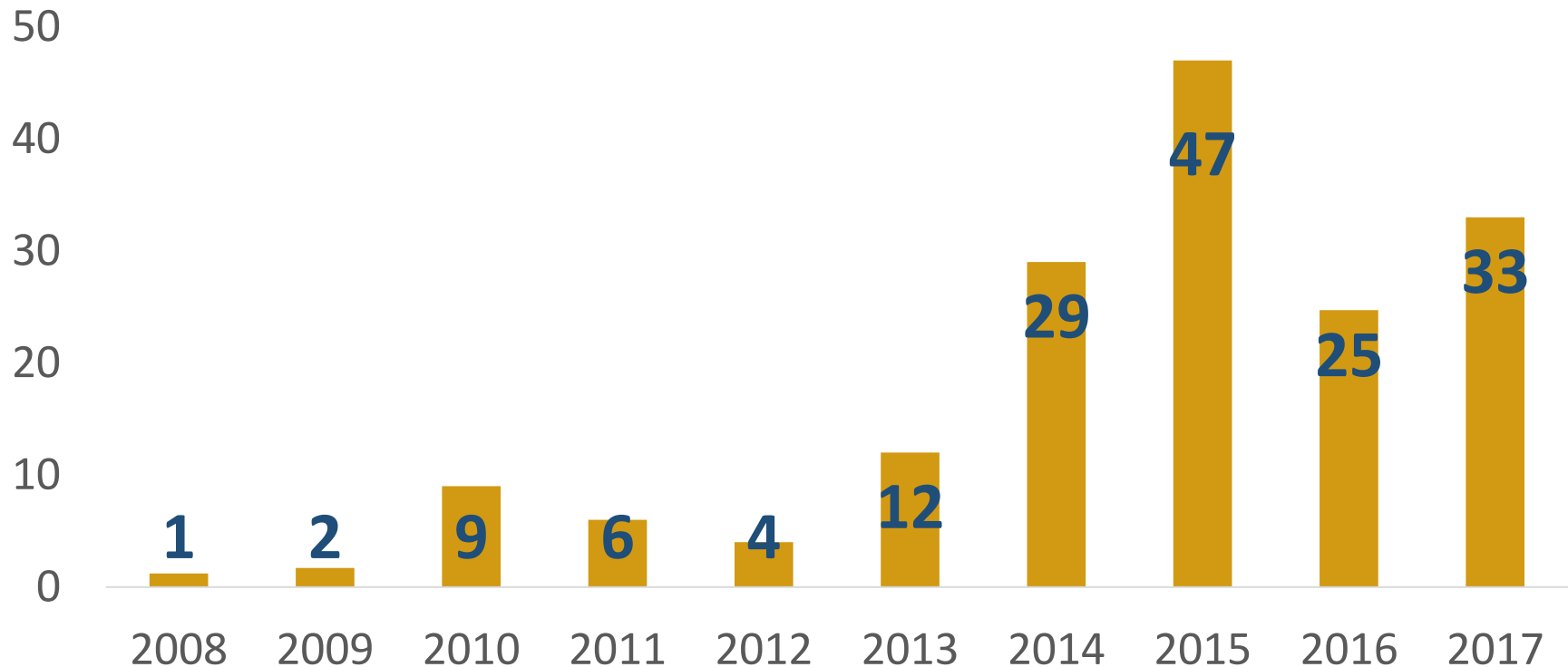
Mobile phones' processing power many times more powerful than NASA used to put a man on the moon.

Investments in FinTechs 2008-2017

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Funding is ballooning.

Since 2008 **\$B 165** has been invested in FinTech companies throughout 7,500 deals



Total global investment in FinTech companies - USD billions

Source: KPMG, 2018, PitchBook, 2018

Ground for cooperation between Fintech firms and banks

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Bill Gates said that **banking is necessary, banks are not**

Banks' strengths:

- Broad existing customer base

- Broad product set

- Low cost of capital

- National bank law protections

- Regulatory Compliance

FinTech firms' strengths

- New ideas

- Quick implementation

- Online customer acquisition

- Online/Mobile user experience design



Fintechs in BCEE region

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- Across the 11 BCEE countries the estimated size of the FinTech market is more than **2 billion** euros.
- FinTech activities may increase considerably in the EU due to **PSD2**, which has been introduced in 2018.

Made digital payments in the past year (% age 15+)

	2014	2017
Bulgaria	38%	41%
Czech Republic	73%	76%
Estonia	94%	94%
Croatia	63%	75%
Latvia	82%	83%
Lithuania	56%	67%
Hungary	58%	62%
Poland	53%	79%
Romania	30%	33%
Slovak Republic	69%	76%
Slovenia	82%	90%
Average BCEE 11	64%	70%

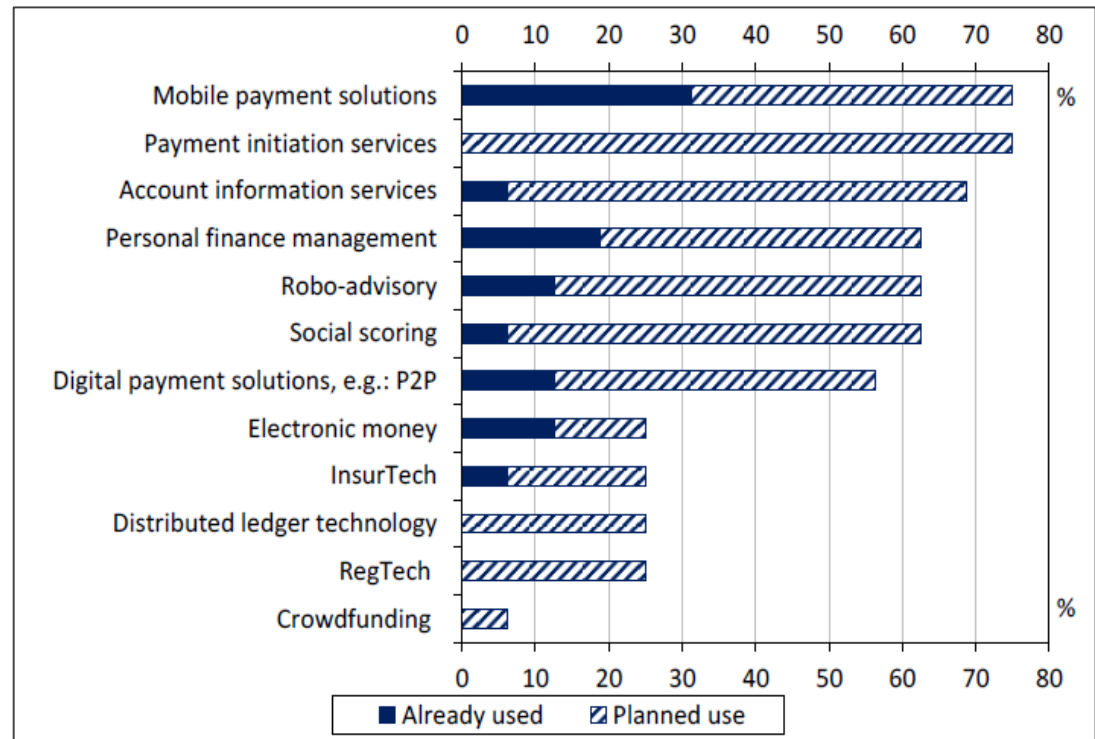
Source: World Bank 2018

Overview of fintech in Hungary

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Types of existing and planned FinTech innovations among banks

- Consumers are already interested in FinTech innovations.
- In terms of the active population, 1 million consumers can already generate potential demand for novel solutions



Hungarian Fintech startups

		Product/capabilities				
		Account management	Lending and Financing	Payments	Financial assets and Capital markets	Other
Customer segments	Retail					
	Commercial					
	Large corporates					

Hungarian Fintech startups

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- Shinrai. MrCoin. Online platform that enables **users to buy Bitcoins for Hungarian Forints (HUF)**.
- B-Payment. **Online card payment service provider** for Hungarian SMEs,
- Transgate. Provides **card payment solutions** which are ideal for **webshops**, the collection of membership fees and **fundraising**
- Fizetési Pont. **Provides contactless** terminals which enable payments, loyalty programs and mobile balance top-up.
- Rufftech. A software development company providing **online invoicing software**.
- VEMOCO. **Connects the car to the driver's smartphone** with the help of a plug-and-play device and provides continuous monitoring of data.

Hungarian Fintech startups

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- Forex Broker Stars. **Forex Broker comparison** service with additional **cost analyzation** and reporting function.
- BankRáció. **Comparison site for banking products** in Hungary.
- Funsave. The platform **helps children** to evolve and **improve financial literacy** through thought-out savings.
- **Talk-A-Bot. Chatbot solution offered for corporates and brands to communicate on commonly used social media platforms.**
- Skoopy Good. Online platform which enables groups to collect money on special occasions.
- Family Finances. **Digital financial ecosystem for families integrating** payment services, savings, PFM, and EduTech functions.

Conclusion

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- EU serves as an anchor for the post-communist countries, EU is able to be the point of reference and to catalyze the process of changes.
- **Banks are investing heavily** in order to fend off the FinTech newcomers and keep the all-important customer relationship, or **cooperate** with them.
- The **most forward-looking banks** will not just survive the wave of digital disruption, but **will thrive**, as these FinTech-driven challengers gain momentum.

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