INTRODUCTORY BANKING

Lecture 4B – Banks vs Bigtech

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11 March 2021

Key terms from Lecture 4A/Financial markets

- Bonds vs. stocks, stock exchange vs. OTC market
- Money vs. capital markets, IPO vs ICO
- Magic triangle of investing (return, risk, liquidity)
- TOP world stock exchanges: NYSE, NASDAQ
- 7 milestones in financial theory:porfolio theory (Markovitz), the CAPM model (Sharpe), interest rate structure theory (Vasicek), capital structure theory (Modigliani & Miller), agency theory (Jensen & Meckling; Akerlof), efficient market theory (Alexander, Fama), option pricing theory (Black & Scholes)
- 3 trends: digitalization, commoditization, globalization (increasing importance of Bigtech)
- Bank-based system in the Czech Republic

Agenda

1.	Introduction
2.	Banking in theory
3.	Banking in practice
4.	Fintech & Bigtech
5.	Future of banking
6.	Conclusion

Introductory notes

- What are recent trends in banking?
- Can we expect bankless future? What about uberization of banking and unbundling banks?
- A rising role of Bigtech and Fintech as bank disruptors - who will win? Will they fight or cooperate?
- Is the blockchain technology promising?

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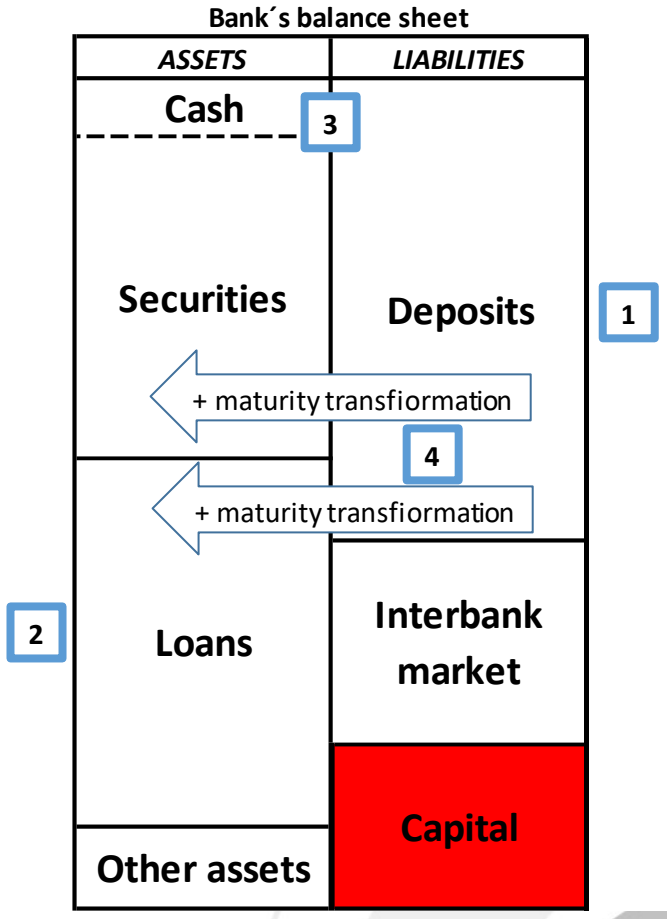
Four main functions of a bank

1) accepting deposits
2) granting loans
3) providing payments
4) providing maturity transformation*

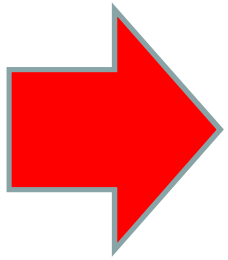


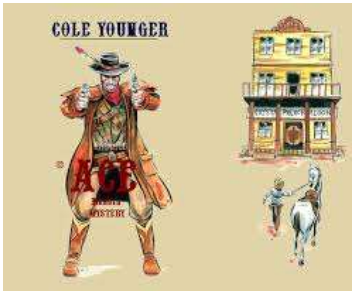
* Banks borrow short and lend long, i.e. from short-term depos they provide long-term loans and investments (=positive maturity transformation, unlike insurers that provide negative maturity transformation).

The shifting balance of money and information yesterday in contrast to today

Source: Oliver Wyman (2013). A money and information business

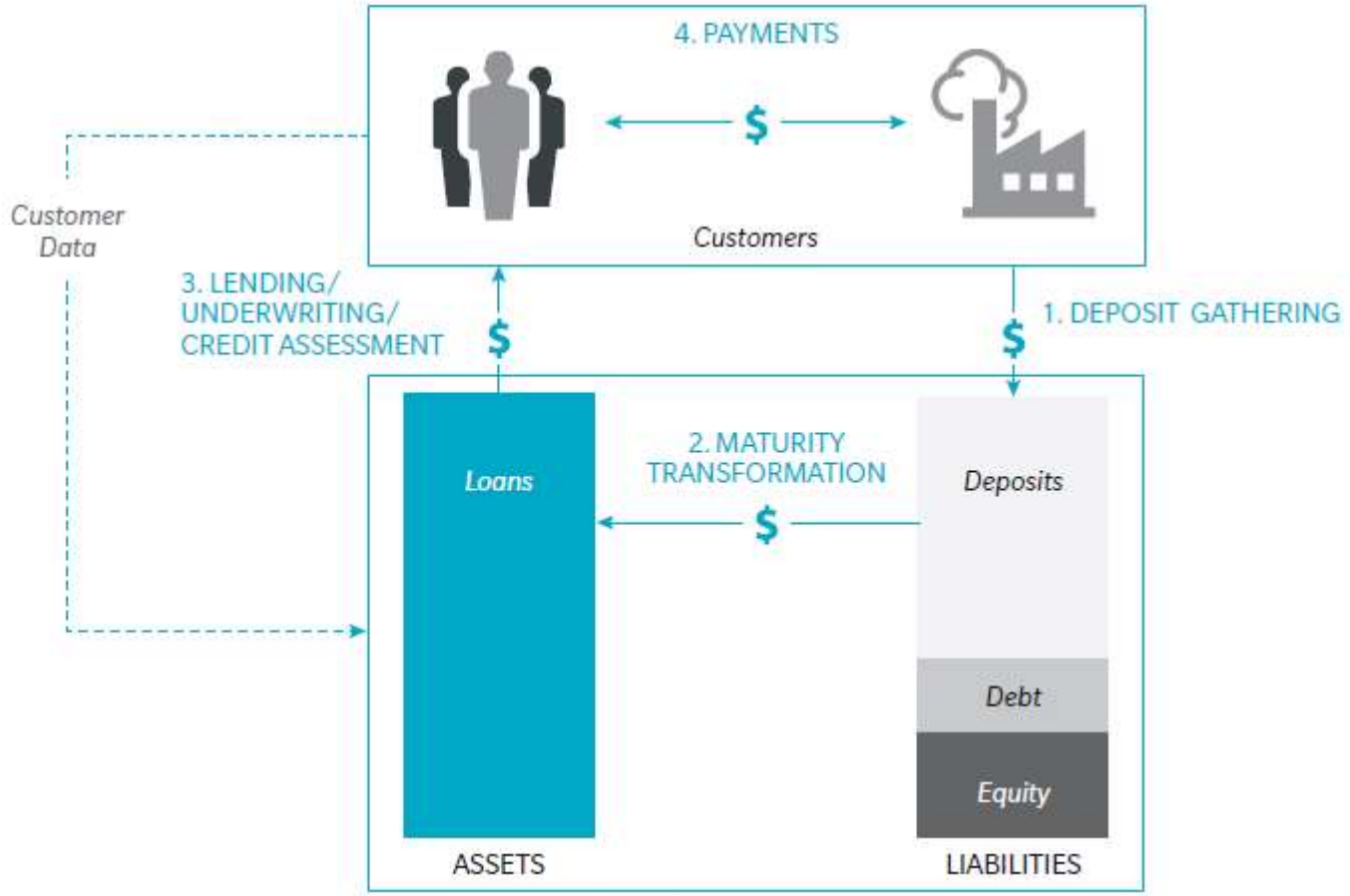
Traditional bank branch-based model vs. cloud banking model





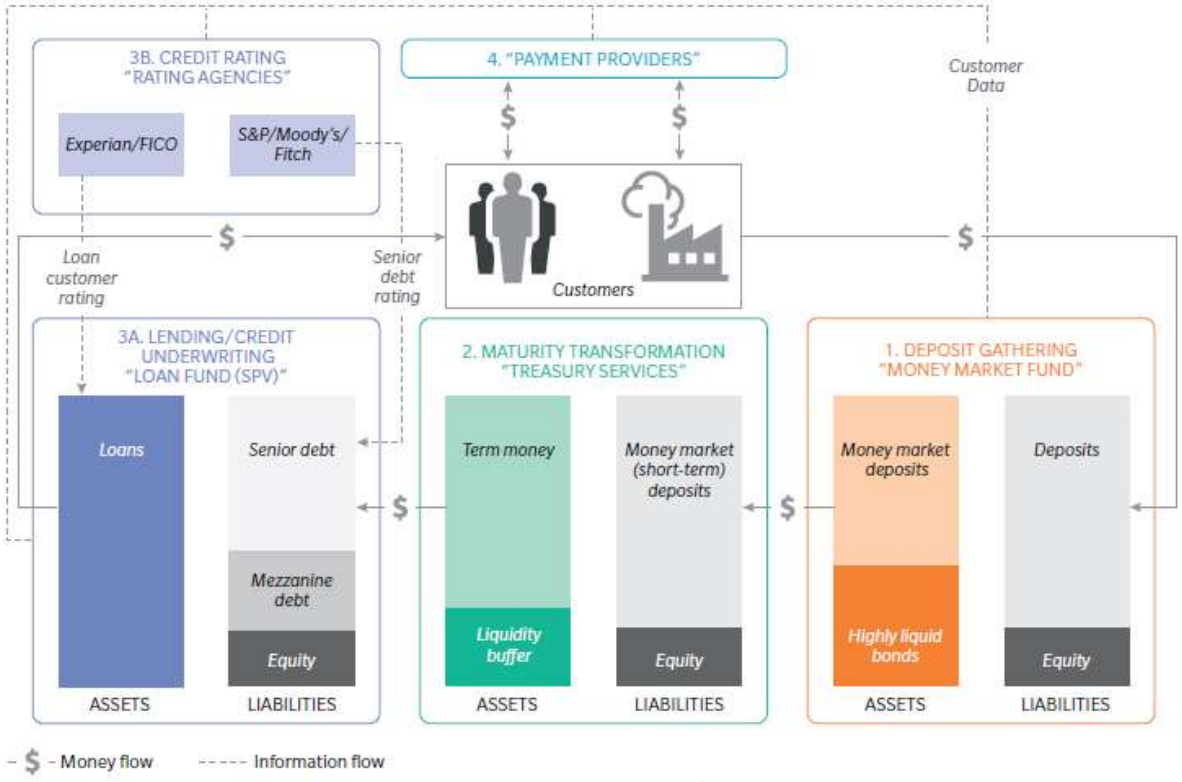
- The rising role of cyber risk and hackers

Traditional bank branch-based model (one-stop-shop for all banking services)



Source: Oliver Wyman (2015): A bankless future? Racing for the unbundling of banks

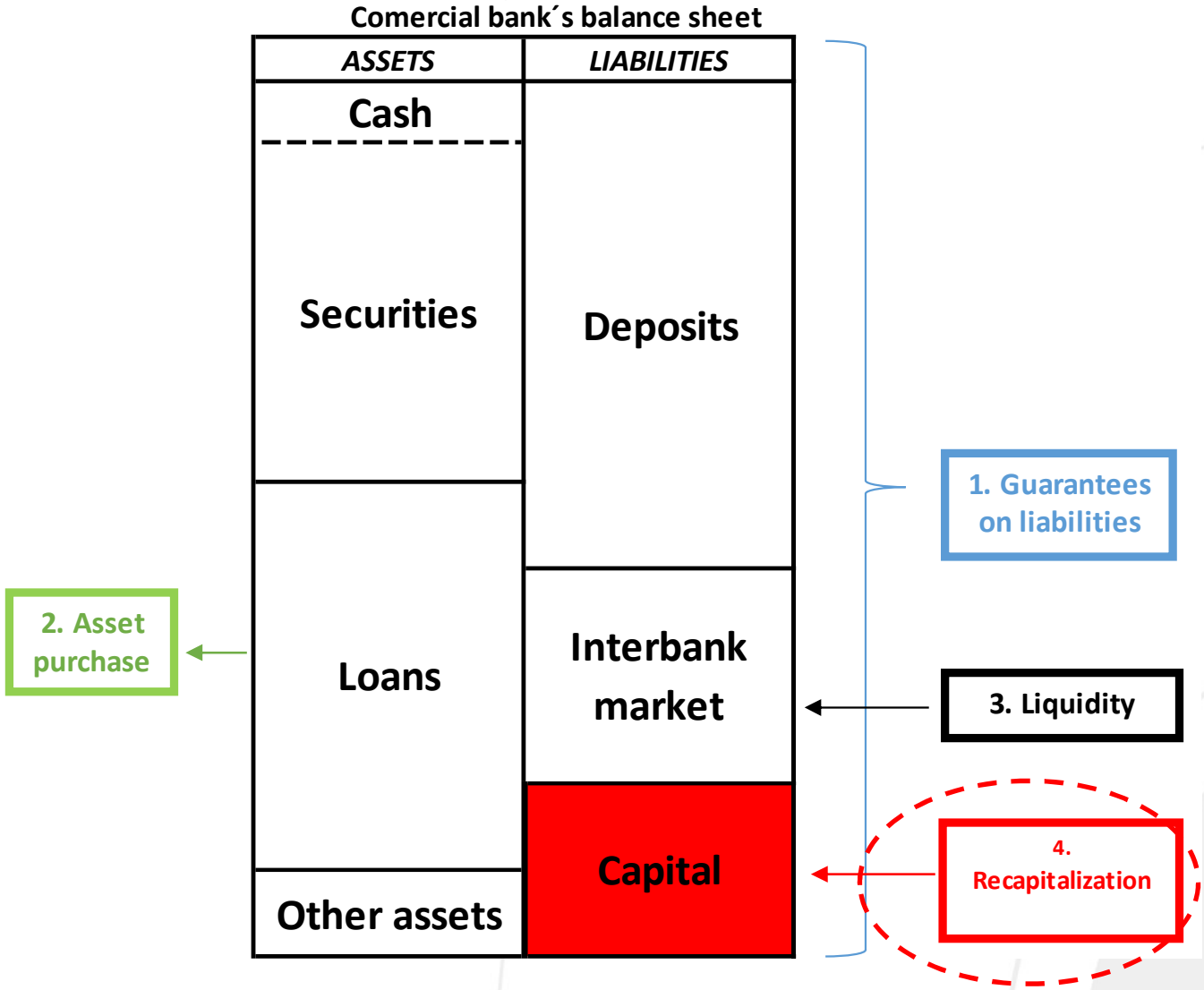
Total unbundling banks is not possible yet...



...since no (non-bank) institution can provide positive maturity transformation – importance of deposit insurance and government support!

Source: Oliver Wyman (2015): A bankless future? Racing for the unbundling of banks

Recapitalization as 1 out of 4 banks´ rescue tools (also applicable during the recent COVID-19 crisis)



Recapitalization in practice: nationalization of banks after the fall of Lehman Brothers (15.9.2008)

–> **privatization of profits and socialization of losses** will be also relevant during **the ongoing COVID-19 crisis**

Selected recent capital injections into banks by European governments/the US government

European banks	Country	EUR bn	US banks	USD bn
RBS	UK	23.4	Citigroup	52.1
Lloyds	UK	19.0	Bank of America	49.0
Commerzbank	DE	18.2	JPMorgan	25.0
ING	NL	10.0	Wells Fargo	25.0
BayernLB	DE	10.0	Goldman Sachs	10.0
Dexia	BE	5.6	Morgan Stanley	10.0
KBC	BE	5.5	PNC	7.6
BNP	FR	5.1	US Bancorp	6.6
LBBW	DE	5.0	SunTrust	4.9
UBS	CH	3.9	Capital One	3.6
Total		105.7	Total	193.7

Sources: Bloomberg, US Treasury, DB Research 3

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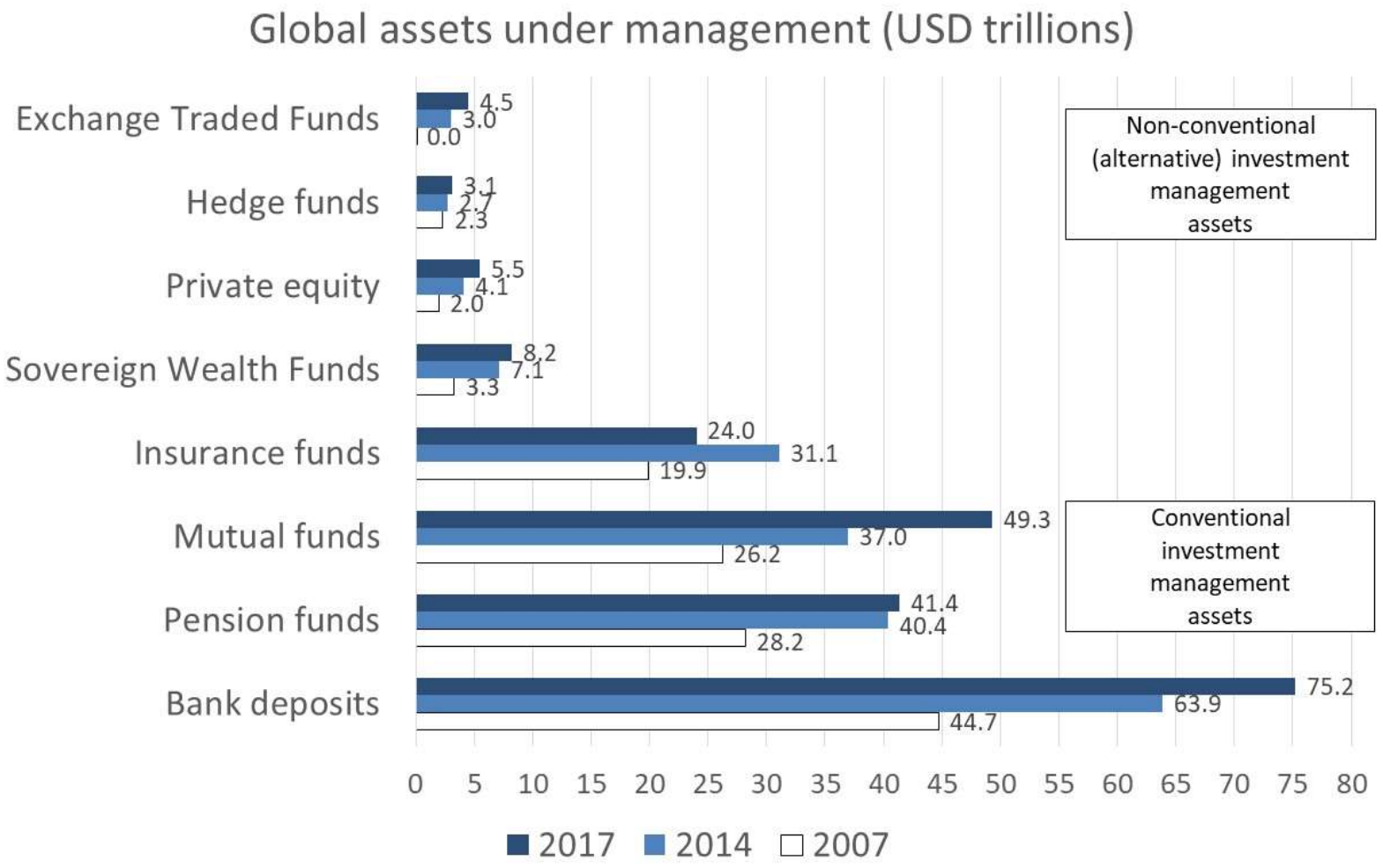
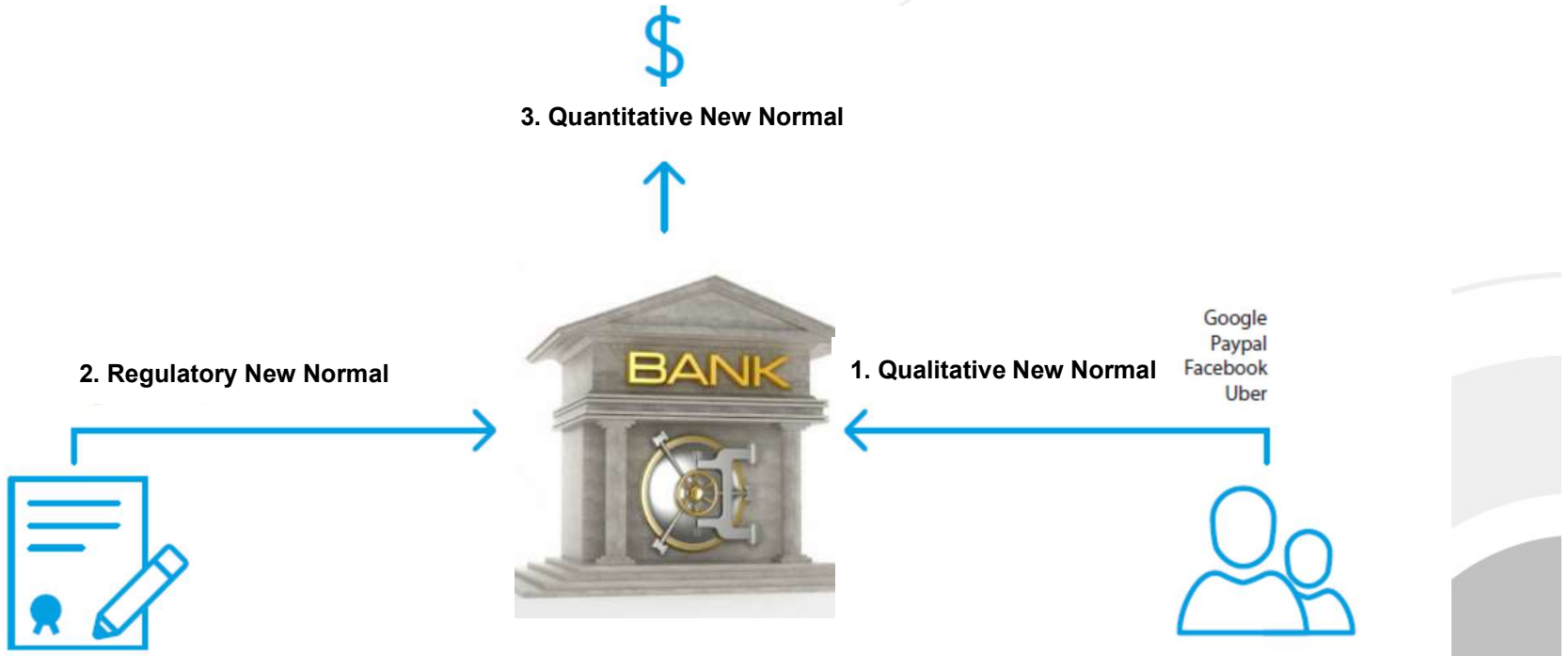
Recent dominant position of banks in global finance market



Source: Author based on various sources
Note: ETF = Exchange Traded Funds, SWF = Sovereign Wealth Funds

Three times ‘New Normal’ in recent banking

1) Qualitative New Normal
2) Regulatory New Normal
3) Quantitative New Normal



1. Qualitative New Normal (new client´s expectations)

1) Digitalization

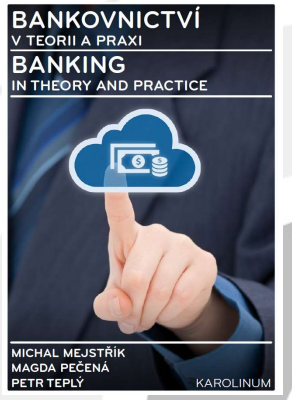
- ✓ New Normal – everything is online and for free
- ✓ Interaction with clients/importance of feedback
- ✓ Internet, on-line apps (future of branches)

2) Commoditization

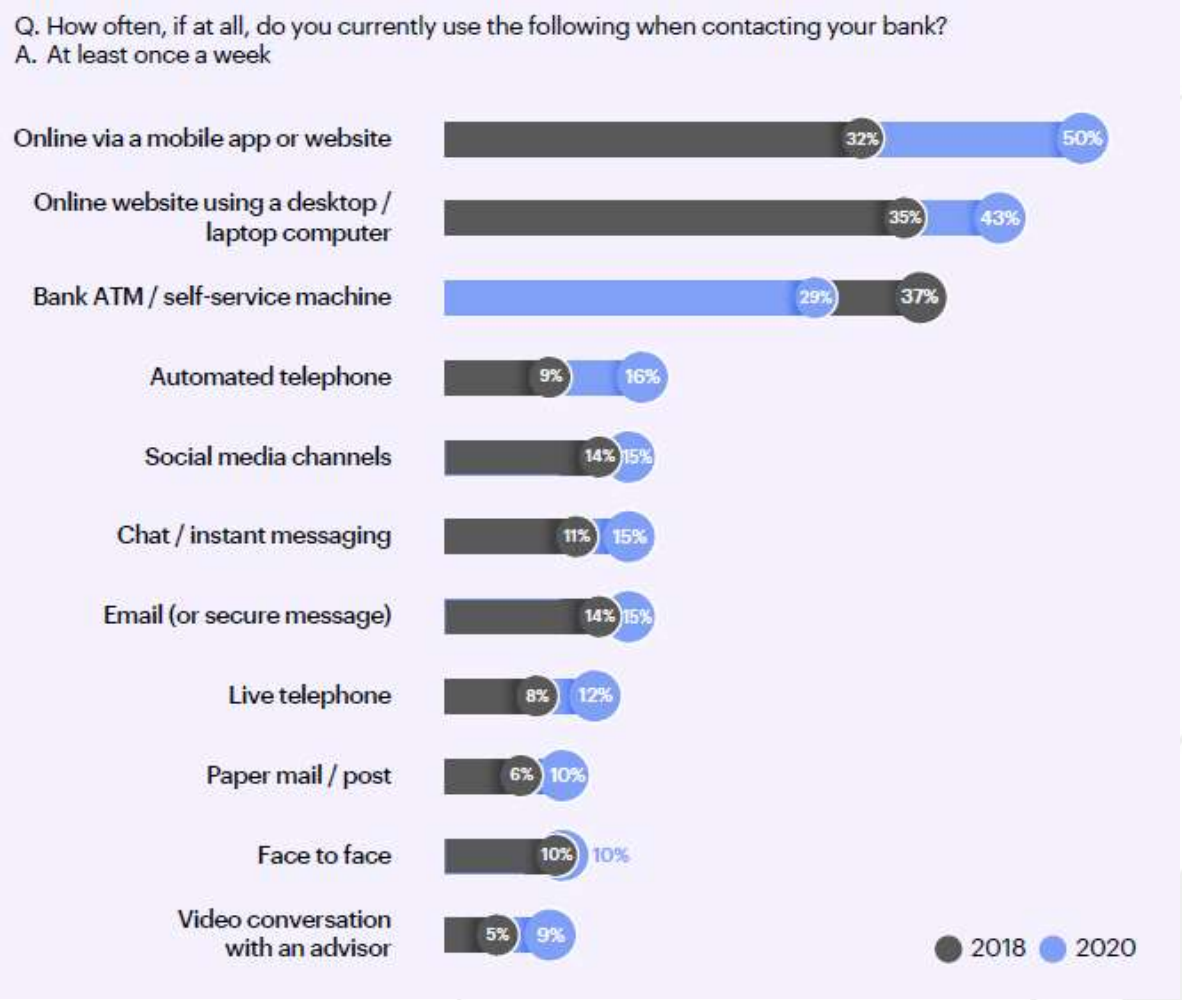
- ✓ a client considers bank products as commodities and evaluates it based on its price rather than on its quality – importance of price comparators

3) Globalization/fierce competition

- ✓ Depos: investment platforms, mutual funds
- ✓ Loans: P2P lending: Zopa, JD Finance
- ✓ Payments: Google, PayPal, Samsung



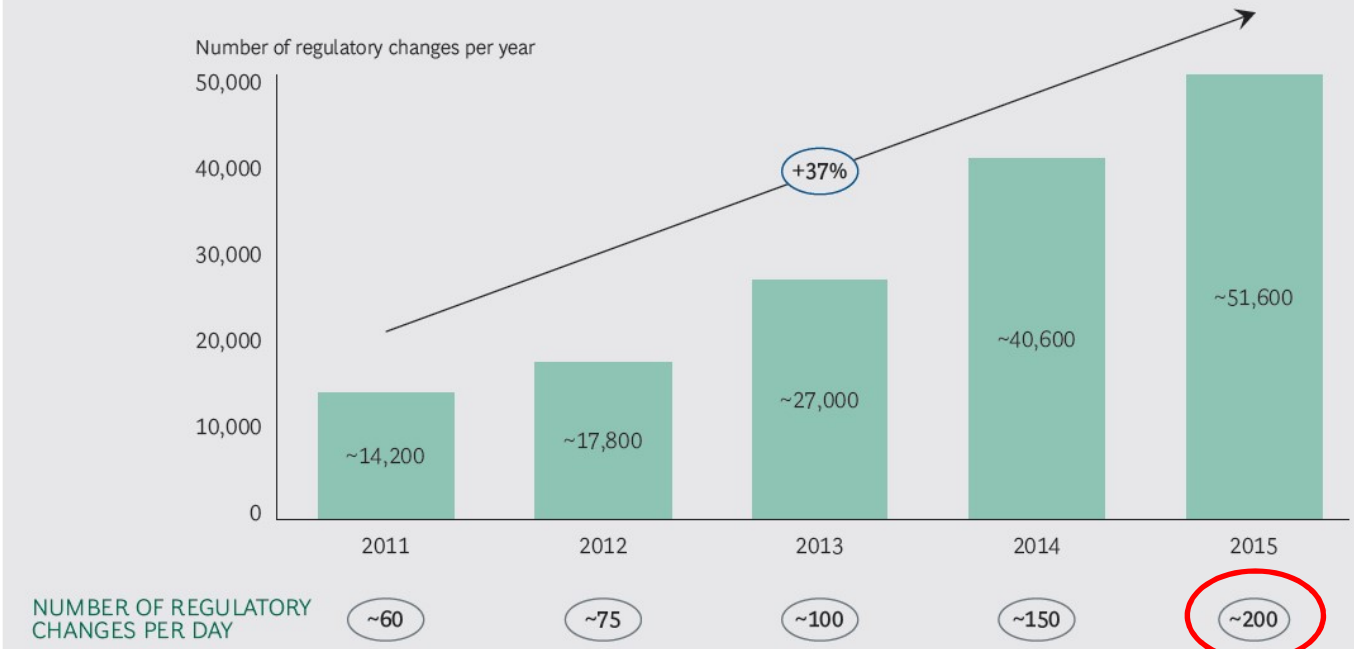
1. Qualitative New Normal: result of the COVID-19 crisis: Digital channels are increasingly used to interact with banks



Source: Accenture (2021). Accenture Global Banking Consumer Study 2020

2. Regulatory New Normal (higher requirements)

EXHIBIT 3 | Banks Must Adapt to Greater Regulatory Changes, Which Have More Than Tripled over Four Years



Sources: Thomson Reuters; BCG analysis.
Note: Regulatory change is defined broadly here to include any new local, national, or international policy, ruling, reform, action, law, ban, comment, announcement, publication, or speech that the compliance department of a bank would be expected to note and monitor.

- Higher regulatory burden on banks (capital requirements, new liquidity ratios etc.) – 200 changes per day!

Source: BCG (2017). Global Risk 2017. Staying the Course in Banking. Boston Consulting Group

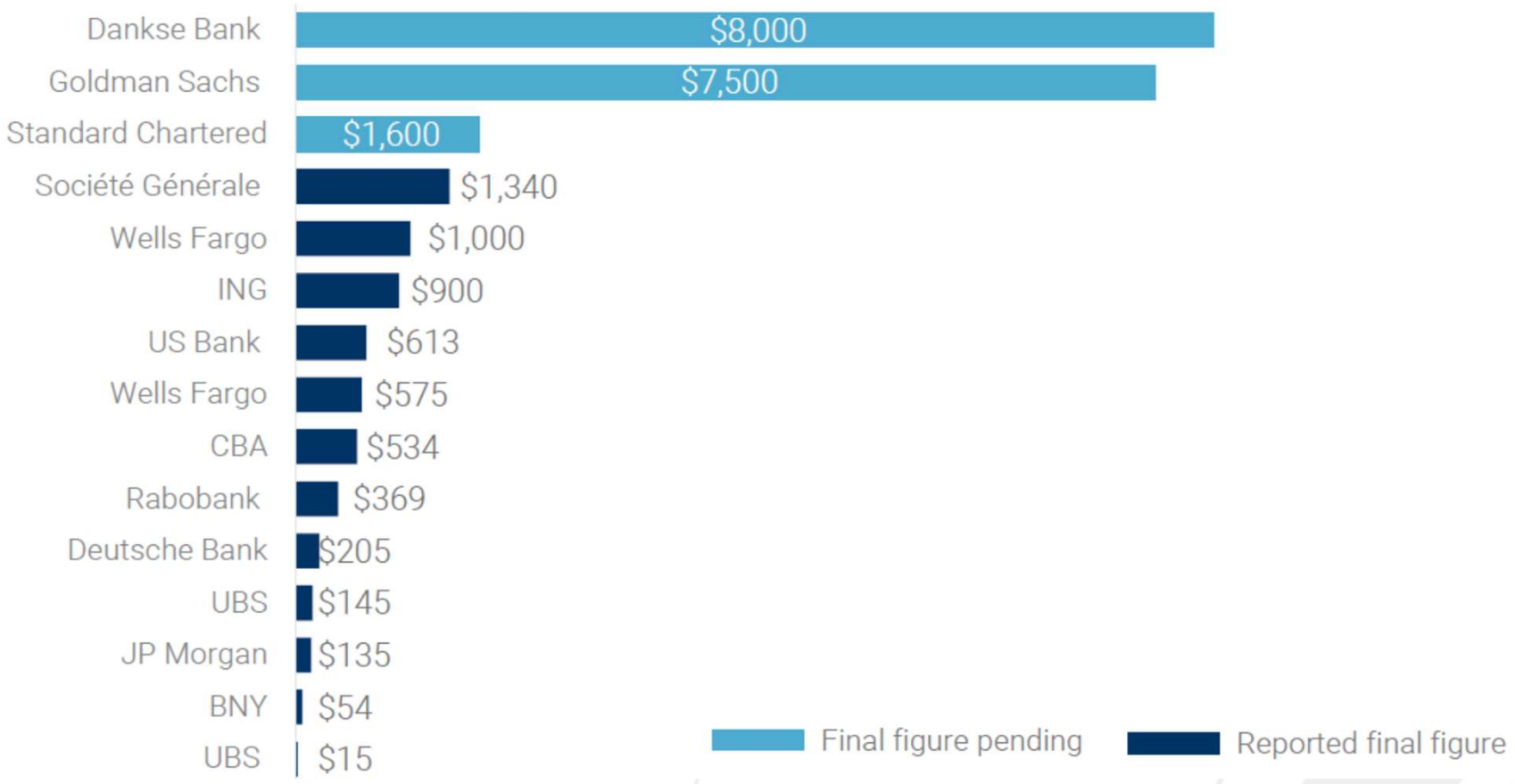
2. Regulatory New Normal (**higher penalties**, tighter regulatory capital and liquidity requirements)

Source: Annual reports; press reports; BCG analysis.
Note: The sample covers the 50 largest European and North American banks. Data through 2015 includes only the penalties, fines, and settlements that surpass $50 million; data since 2015 includes only the penalties, fines, and settlements that surpass $20 million. Values may not add up to totals shown because of rounding.

- USD 381 billion in penalties (fines) paid by TOP global banks for their misconduct (violation of sanctions, mis-selling financial products etc.)

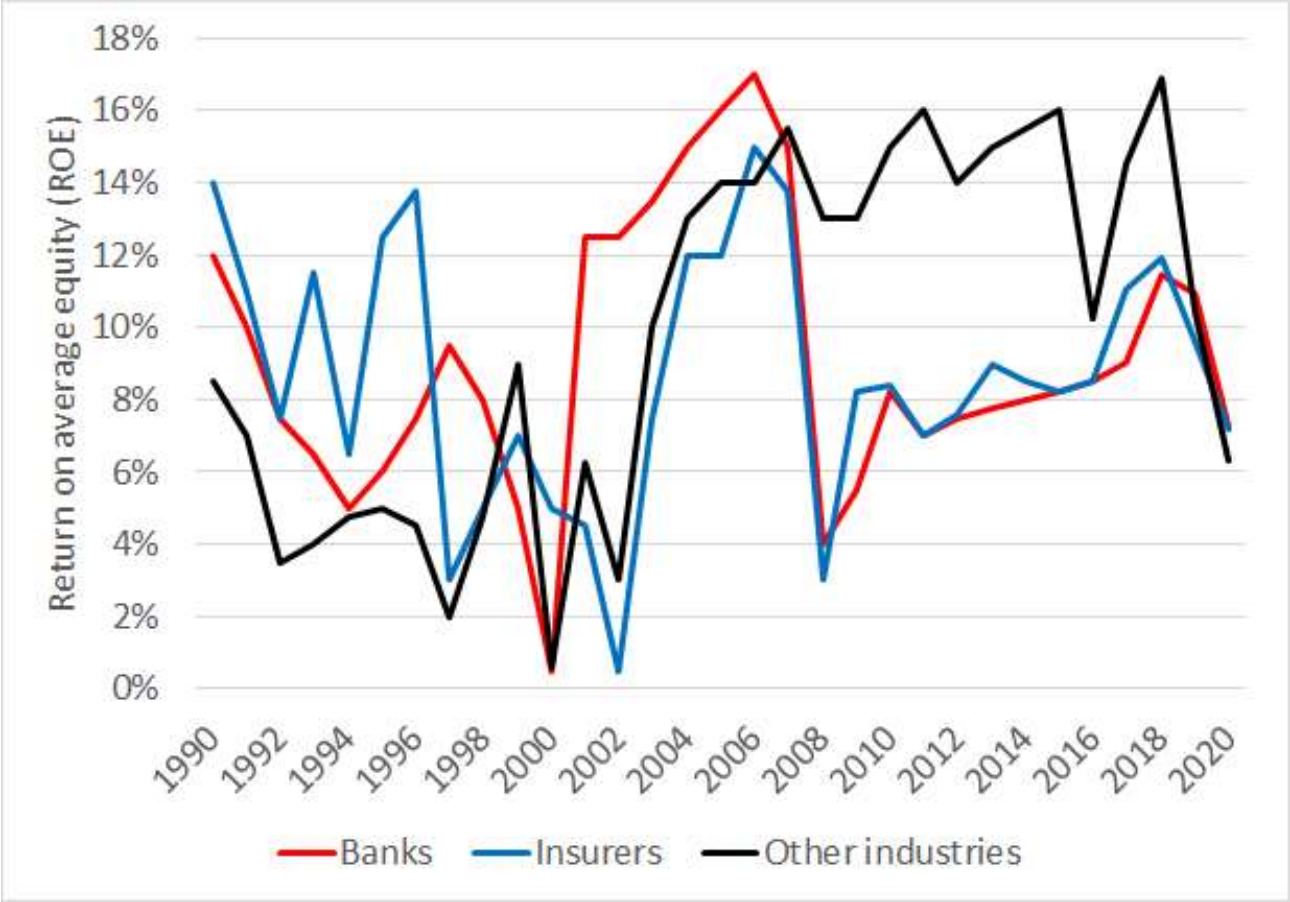
2. Regulatory New Normal:

penalties include non-compliance with AML*, KYC**, and sanctions, and exclude crisis-related settlements, (in $ million)



Source: CB Insights (2019). Fintech Trends to Watch
*AML = Anti-Money Laundering, **KYC = Know Your Customer

3. Quantitative New Normal (lower banks´ profitability even before the COVID-19 crisis)



Source: Author based on various sources; data reflects the S&P 1200 index performance

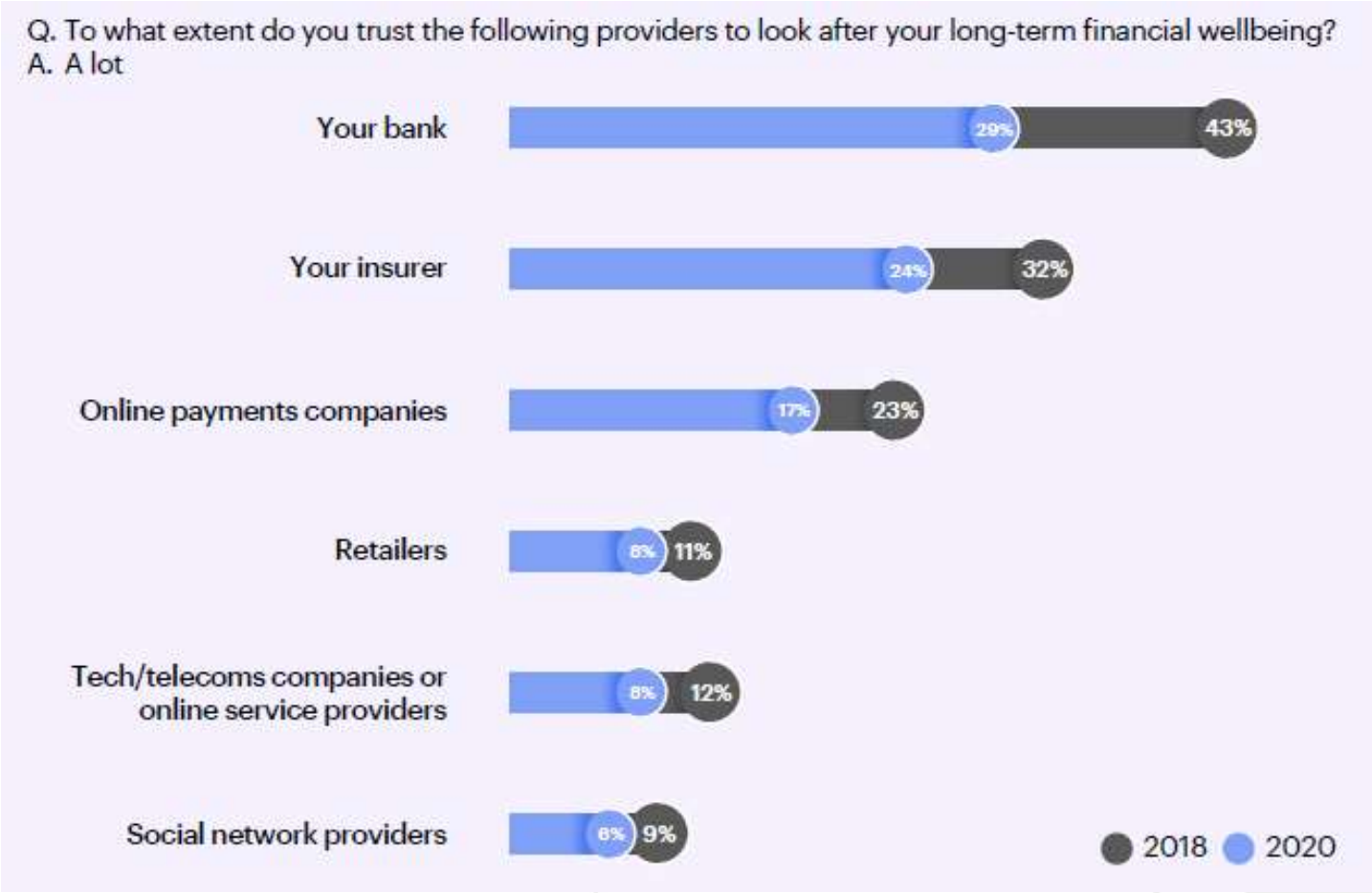
- Deteriorating financial performance of global banks
- Non-sustainable business model of investment banks facing liquidity risk (“casino business model“)

Six pandemic-accelerated trends in banking

1) Accelerating deglobalization and geopolitical concerns
2) Radical changes in the macro environment
3) Upheaval in the ways we work
4) Growing challenges from tech players and embedded finance
5) Transformed customer expectations
6) Increasing urgency of social and environmental sustainability

Source: McKinsey (2020). McKinsey Global Banking Annual Review 2020

Result of the COVID-19 crisis: Consumers' trust in businesses to look after their long-term financial wellbeing has dropped



Source: Accenture (2021). Accenture Global Banking Consumer Study 2020

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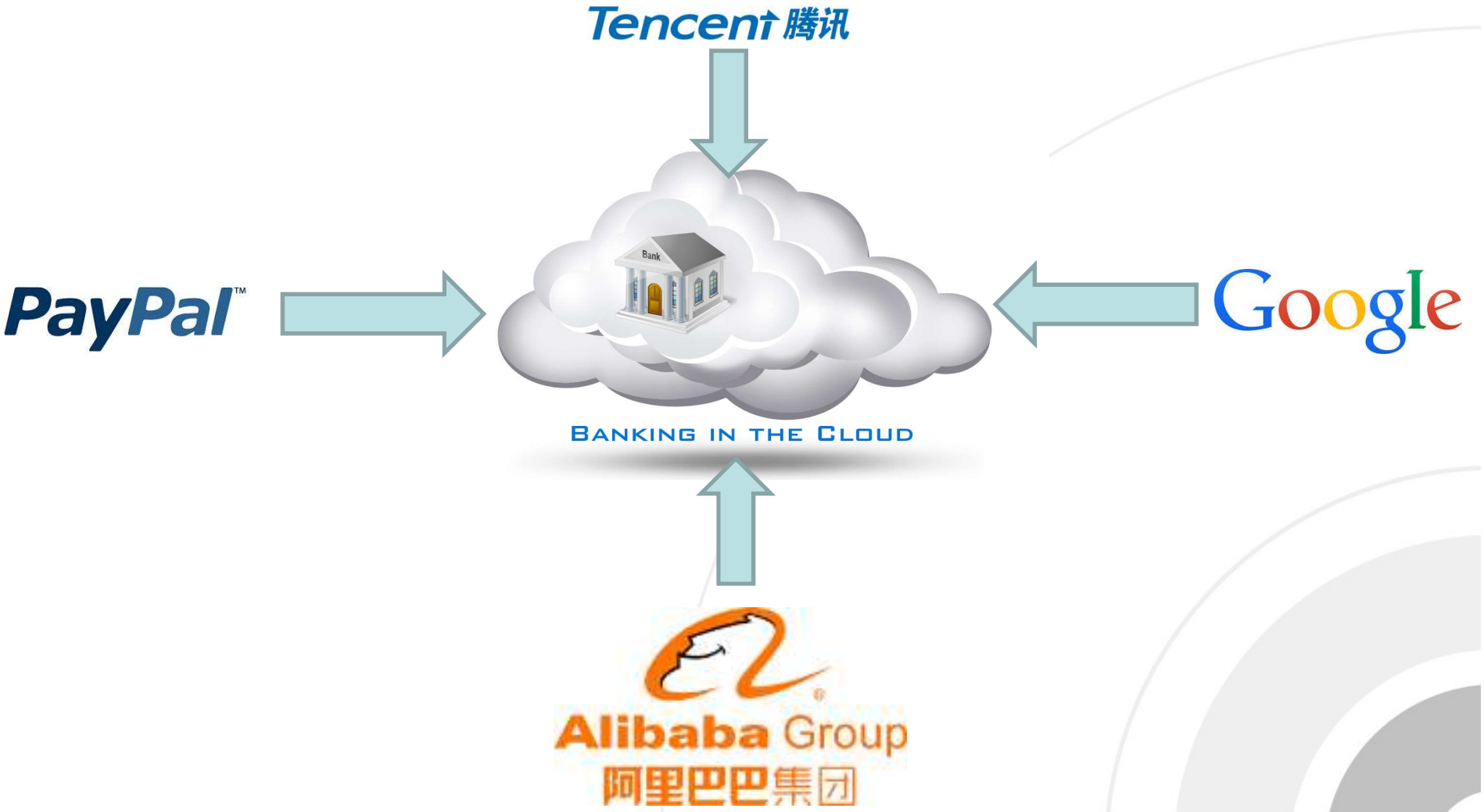
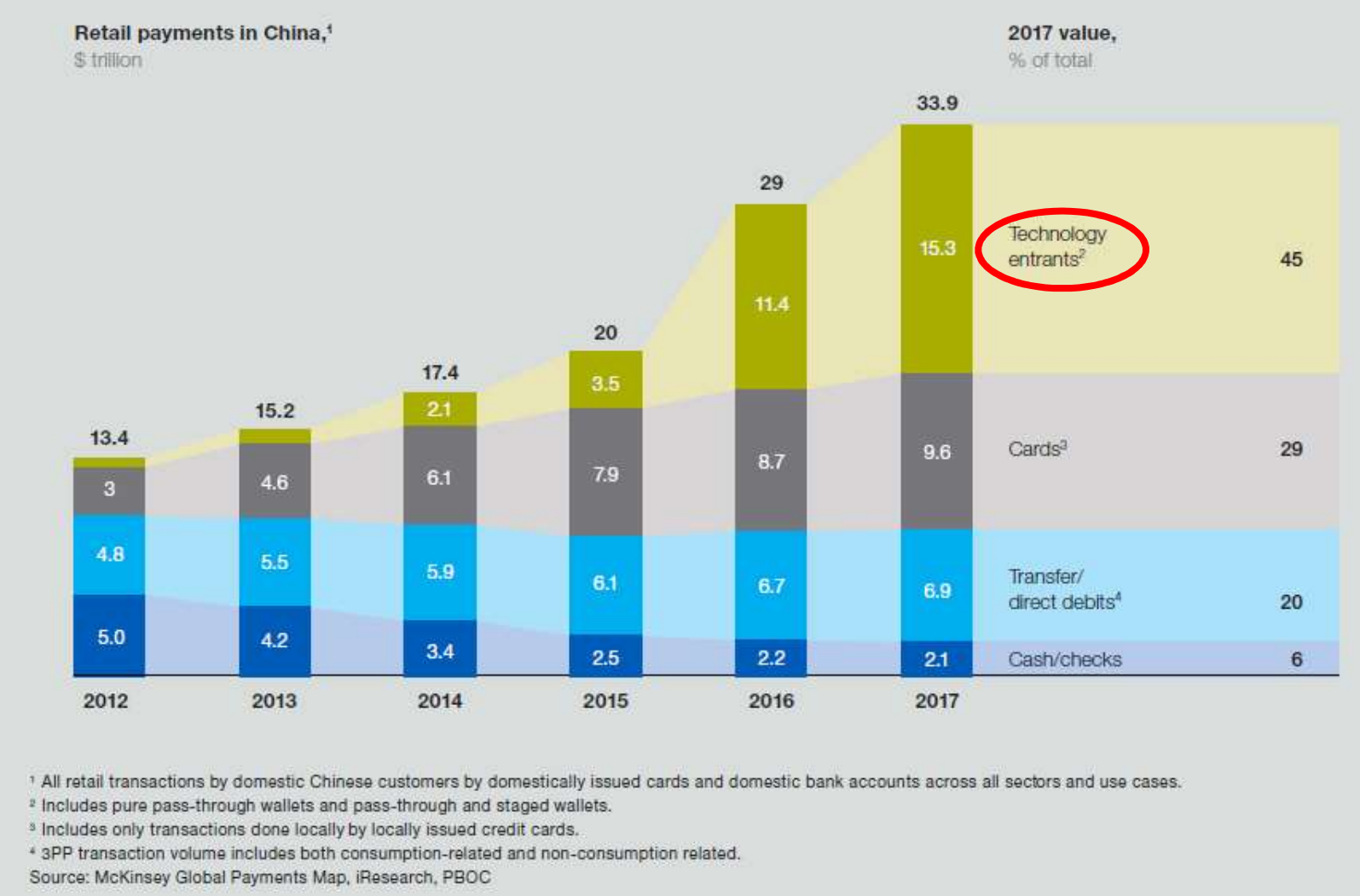
Fintech vs Bigtech

- **Fintech**
  - small financial-services business that use technologically innovative apps, processes or business models
  - Examples: Square, Klarma, Lending Club
  - Examples of Czech Fintech companies: Zonky, Twisto, Red Eggs, Budgetbakers
- **Bigtech**
  - big Fintech companies
  - Examples of US Bigtech: Google, Apple, Facebook, Amazon, Microsoft, Paypal
  - Examples of Chinese Bigtech: Baidu, Alibaba, Tencent, JD.com, Xiaomi

Bigtech/fintech enter the banking cloud model and challenge traditional banks



Technology giants now account for nearly 50% of domestic retail payments volume in China



Source: McKinsey (2018). New rules for an old game: Banks in the changing world of financial intermediation

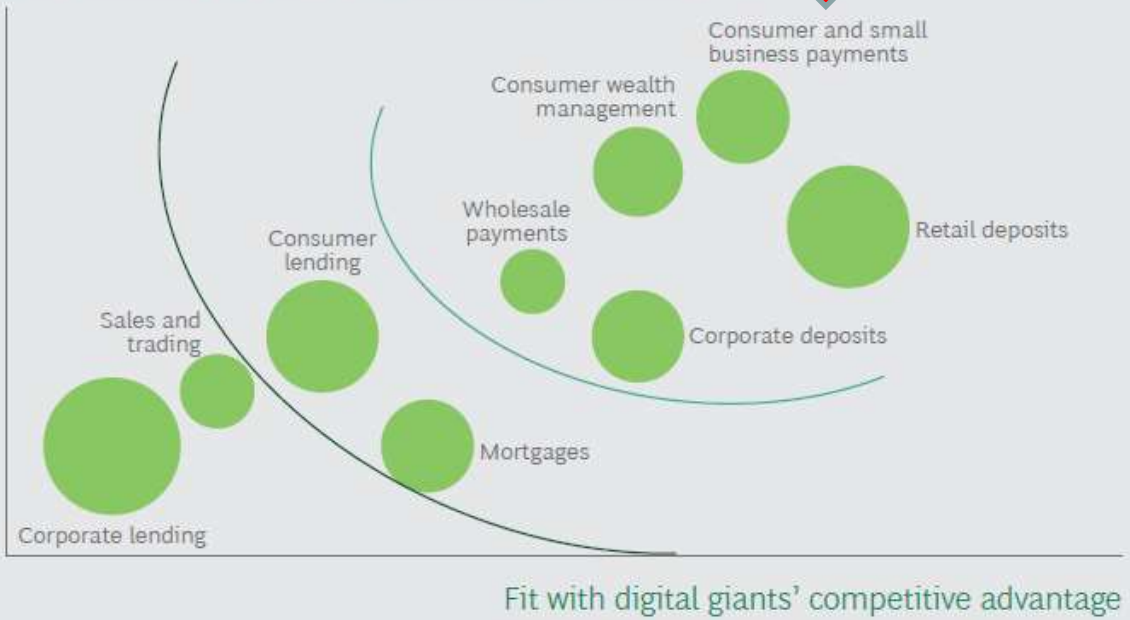
Specialist finance providers have captured a significant share of Sweden's consumer finance market.

Source: McKinsey (2018). New rules for an old game: Banks in the changing world of financial intermediation

Disruptive Threats to Various Banking Businesses from Fintech: **Payments**

The attractiveness of a financial institution's business reflects the following:

- Size of the revenue pool
- Return on equity
- Capital intensity
- Regulatory considerations

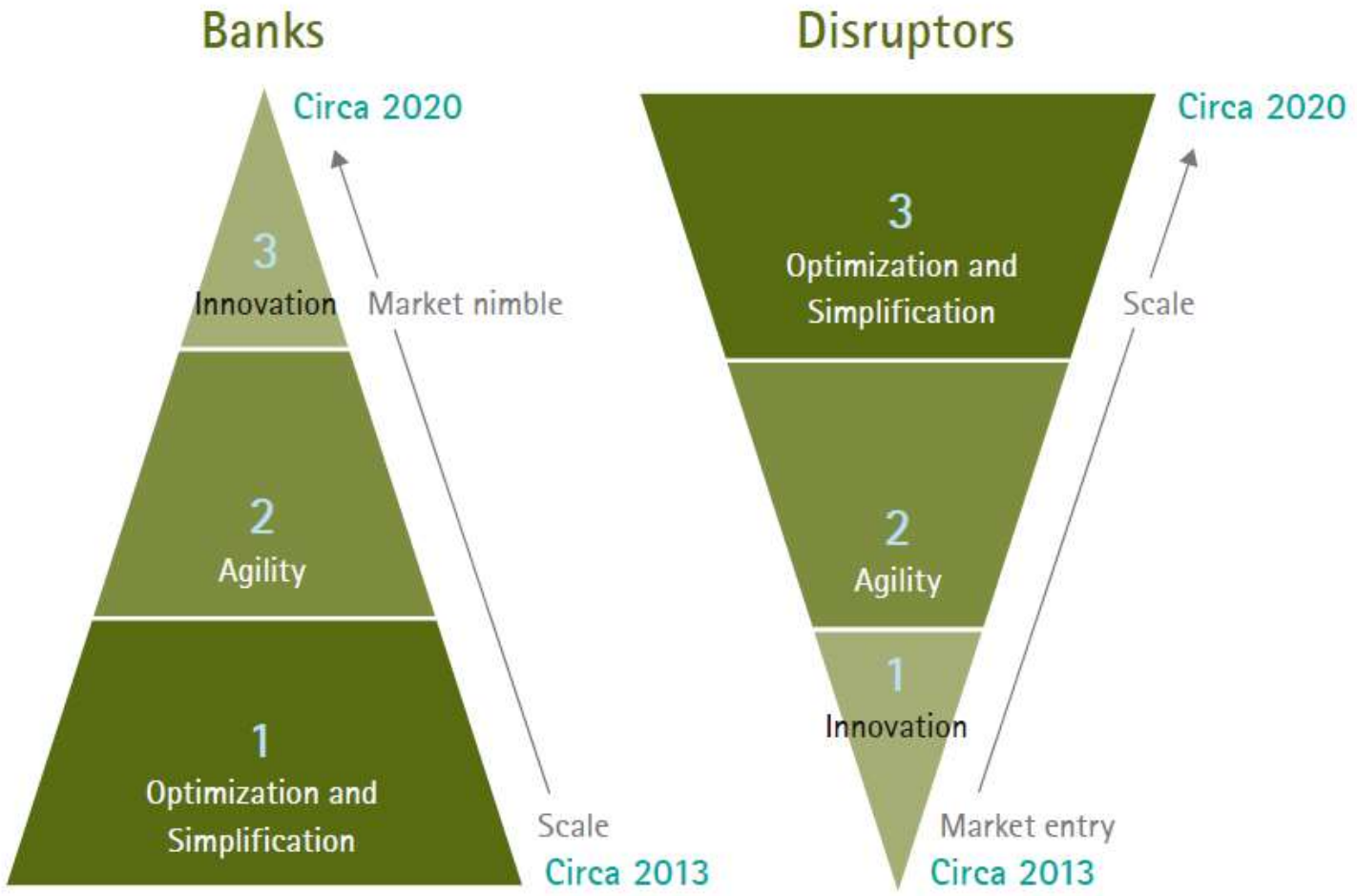


The fit with digital giants' advantage reflects the following:

- Customer access
- Power of the brand
- Scale and network effect
- Data advantage
- Growing customer trust

Source: BCG (2019). Banks Brace for a New Wavecof Digital Disruption. Boston Consulting Group

Fintech as emerging disruptors are facing different/simpler processes than banks



Source: Accenture (2013). A Critical Balancing Act: US Retail Banking in the Digital Era

GAFA*/Bigtech and 4 bank functions

Source: Author based on various sources
Note: * Google, Apple, Facebook, Alibaba

Comparison between Banks, Fintechs and Bigtechs

		Banks		Fintechs		big techs	
Overall scale and market power	Market cap of global top 20 players (USD BN), 2018		~3,300		~360		~5,900
	Annual avg. R&D spending[A] (USD BN) Selected top player, 2017–19	J.P. Morgan	~11	Monzo	~0.03	Amazon	~20
Current presence in financial services	# of users (MM)[B] Selected top player, 2019	ICBC	600	Klarna	85	Alipay	~1,200
	Payment value (USD TN)[C] Selected top player, 2018	J.P. Morgan	~1-2	Adyen	0.2	Alipay	~15
	Global new credit volume (USD BN) 2017		~8,000		~400		~200

Source: Company websites and annual reports, news articles, research paper, PBoC, Statista, iResearch, BIS, Dealogic, Oliver Wyman analysis

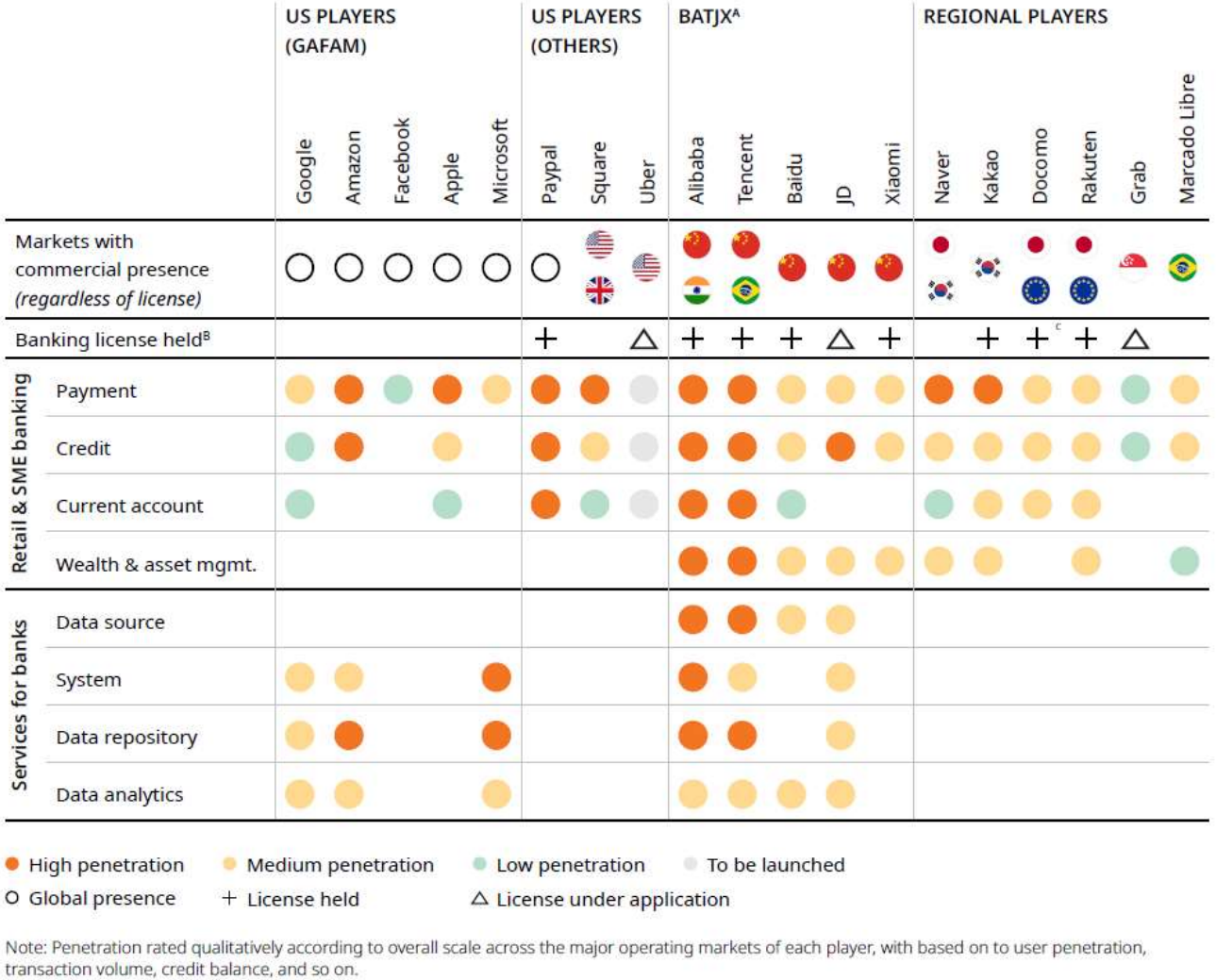
A JPM: technology investment per year (from company release); Monzo: R&D expenditure (OW estimate); Amazon: technology and content expense (from income statement).

B Metrics used: number of accounts for ICBC; number of end customers for Klarna; annual active user for Alipay.

C Merchant acquiring value for JP Morgan for comparability (i.e. excluding FX trading, cheques, etc).

Source: Oliver Wyman (2020): Big bank, bigger Bigtech? How policy-makers could respond

Estimated Bigtech and regional player penetration along product segments



Note: Penetration rated qualitatively according to overall scale across the major operating markets of each player, with based on to user penetration, transaction volume, credit balance, and so on.

Source: Oliver Wyman (2020): Big bank, bigger Bigtech? How policy-makers could respond to a probable discontinuity

Case study: Amazon's credit business

Comparison between traditional SME bank loan and Amazon Lending

	Bank SME loans	Amazon SME lending
APR/Fees	4 — 13% APR origination fee applies	10 — 14% APR no origination fees
Distribution channel	Mostly offline	Amazon seller platform (invite-only)
Approval time	Typically three to five weeks	five days
Credit assessment data	Credit bureau, financial statements, and so on	Business data (transactions, etc.) in the Amazon marketplace
Collateral	Typically required unsecured loan also available	Inventory to act as collateral
Prepayment	Penalty typically applies	No prepayment penalty

Source: Oliver Wyman (2020): Big bank, bigger Bigtech? How policy-makers could respond to a probable discontinuity

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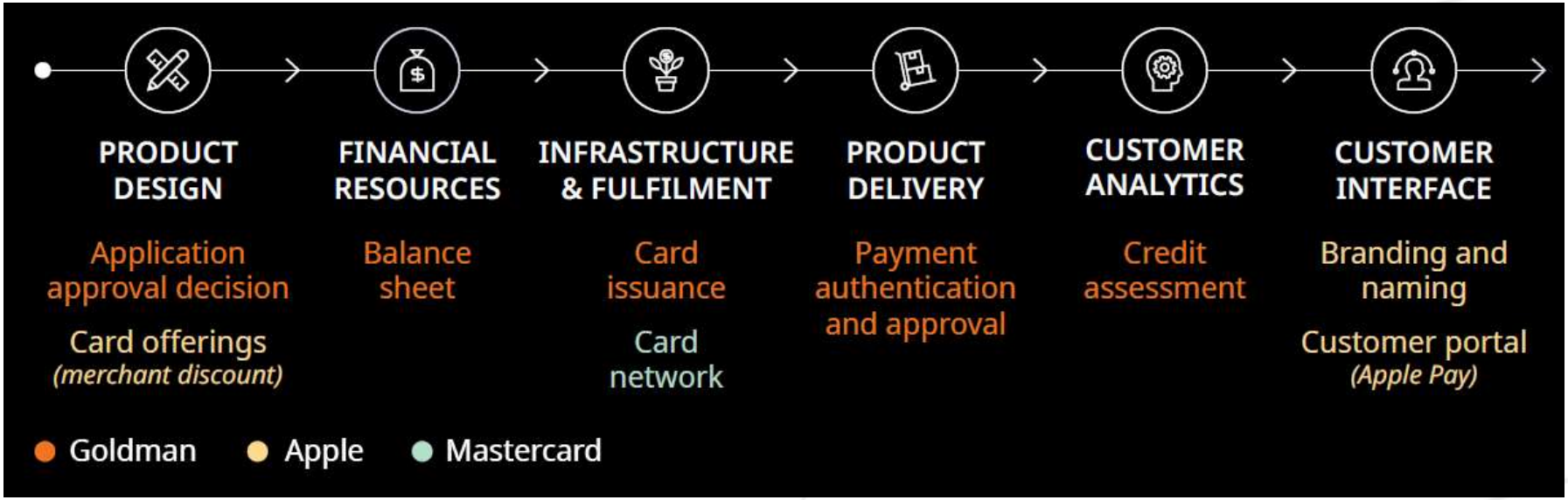
Three scenarios of bank future

1) Adaption and transformation of banks
   - ✓ Regulated banks as low-margin utilities (rather than high-margin ‘casinos’/investment banks)
   - ✓ Bank-Fintech partnerships
2) Uberization of banking
   - ✓ Banks loose their contact with clients
   - ✓ Banks at the end of global financial services chain (Application Program Interface/API)
3) Bankless future/Blockchain
   - ✓ The use of distributive ledger technology for bank services

Scenario 1: Transformation of banks

- Banks need to transform themselves in order to survive and keep pace with Bigtechs and Fintechs
  a) branch optimization
  b) technology implementation
  c) atraction and retention of talented staff

Scenario 1: Partnership model in payments among Goldman Sachs, Apple and Mastercard



- Apple launched its credit card, Apple Card, in partnership with Goldman Sachs and Mastercard in August 2019.

Source: Oliver Wyman (2020): Big bank, bigger Bigtech? How policy-makers could respond to a probable discontinuity

Scenario 1 in the context of the future of financial intermediation

- **Banks' position in the financial system is under threat.**
- The dual forces of technological (and data) innovation and shifts in the regulatory and broader socio-political environment are opening great swaths of this financial intermediation system to new entrants, including other large financial institutions, specialist finance providers, and technology firms.
- Significant structural changes in other industries:
  1) the impact of online ticket booking and sharing platforms such as Airbnb on travel agencies and hotels,
  2) the impact of technology-enabled disruptors such as Netflix on film distribution
- **4 strategic options for bank´s future in 3 layers of financial intermediation**

Scenario 1: A simpler set of layers will likely replace the current complex system as a conduit for global funds

Source: McKinsey (2018). New rules for an old game: Banks in the changing world of financial intermediation

Layer 1: Everyday commerce and transactions

- **Deposits, payments, consumer loans**
- As technologies like face recognition and zero-touch payments advance, such transactions would ultimately become seamlessly embedded into people's day-to-day digital lives.
- This aspect of the financial intermediation system may become "invisible" to consumers as it is gradually embedded into digital ecosystems.

Source: McKinsey (2018). New rules for an old game: Banks in the changing world of financial intermediation

Layer 2: Relationships and insights

- **Mergers & Aquisitions (M&As), derivatives structuring, asset management, corporate lending, and mortgage lending.**
- Technology will be pervasive, with artificial intelligence (AI)-driven, semi-automated advisory services integrated into a remote advisory model—with an important role remaining for human interaction.

Source: McKinsey (2018). New rules for an old game: Banks in the changing world of financial intermediation

Layer 3: Low-touch Business-to-Business (B2B)

- **Scale-driven sales and trading, standardized products in wealth and asset management, and some parts of origination.**
- Institutional intermediation is likely to be heavily automated, with high-performing, cost-efficient technology infrastructures supporting high-volume/low-margin trading—all enabled or enhanced with technologies such as AI, machine learning, and blockchain

4 strategic options and their implications in the new banking landscape (1/2)

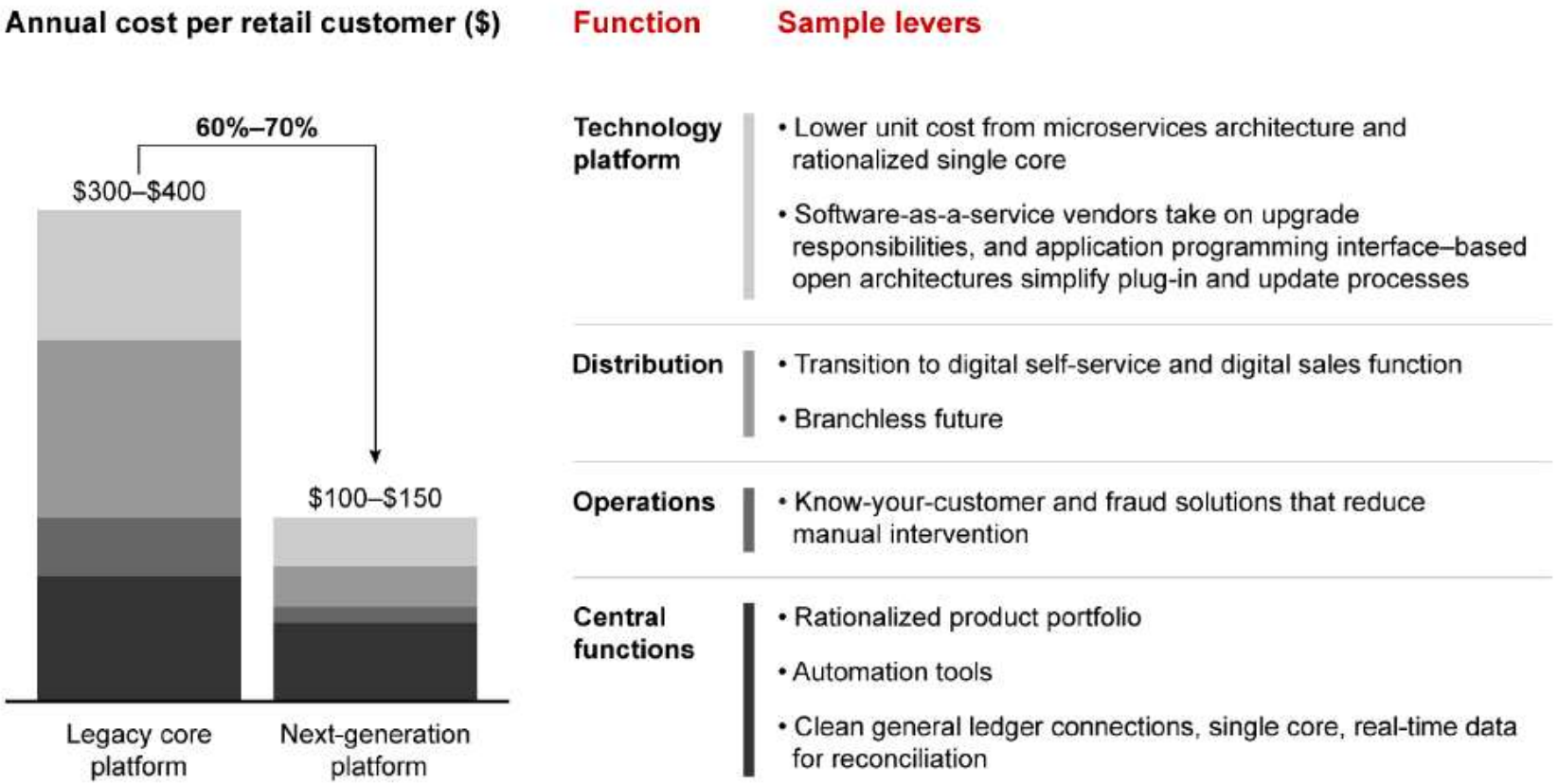
1) The innovative, end-to-end ecosystem orchestrator

- ✓ one-stop shops for all banking-related products and services, focusing primarily on "distribution" and in some cases also "manufacturing" activities.
- ✓ Examples of Bigtech integrators: Tencent and Amazon

2) The low-cost "manufacturer "

- ✓ low cost, highly efficient white-label manufacturing engines by consolidating volumes, mastering operational efficiency, and fully digitizing and automating processes.
- ✓ Banks with strong balance sheets, deep access to low-cost funds, and strong financing abilities

A digital attacker as the transformed bank



- A digital attacker bank on a cutting-edge technology platform could have a cost base 60%–70% lower than a mid-tier traditional bank

Source: Bain (2020). Digital Attacker Banks' Time Has Come

4 strategic options and their implications in the new banking landscape (2/2)

3) The bank focused on specific business segments

- ✓ high-touch, relationship-driven specialists competing in narrow business segments (corporate loans, retail banking for ultra-high-net-worth individuals)
- ✓ Example: Rabobank in agriculture

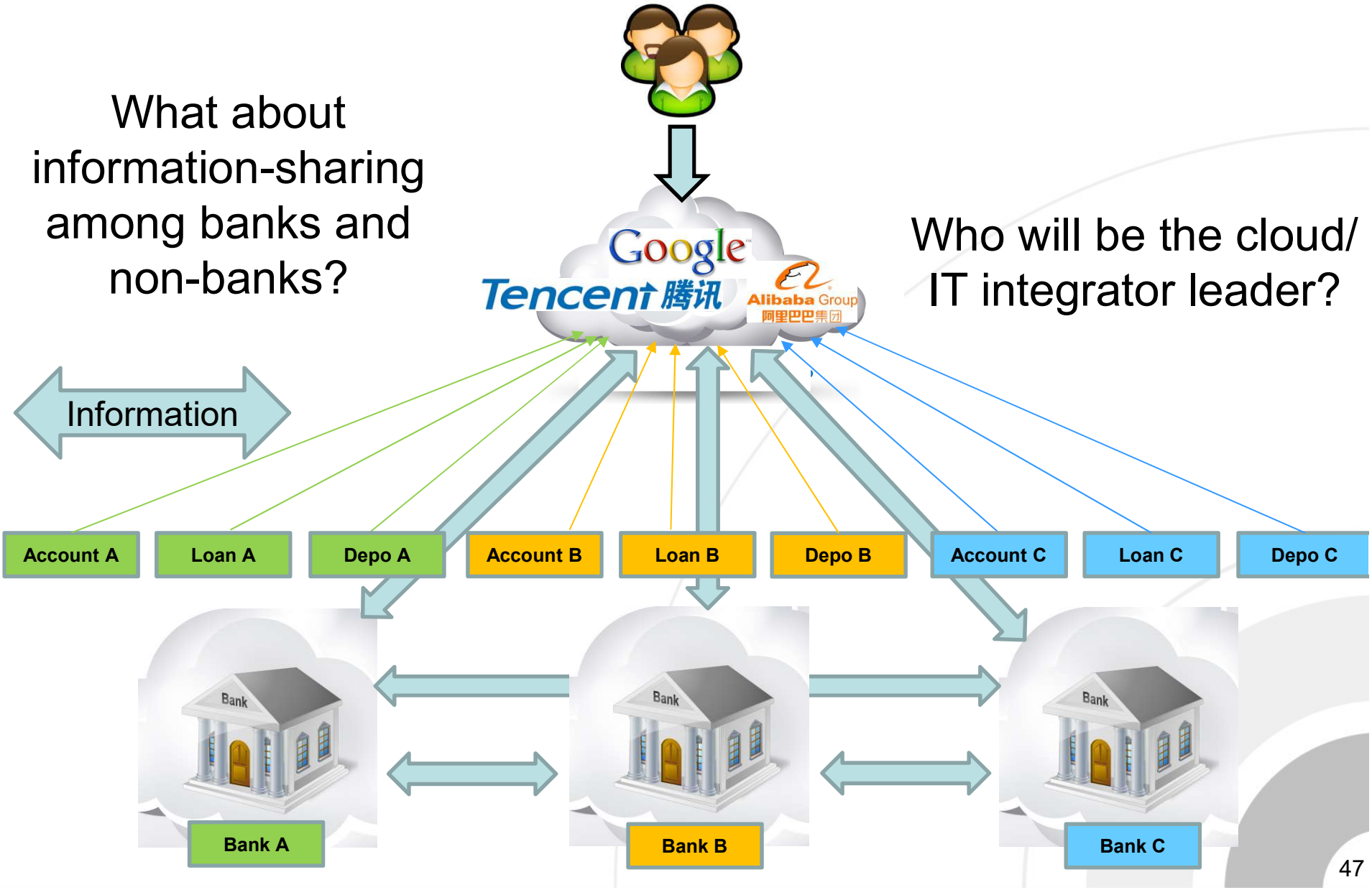
4) The traditional bank (transformed)

- ✓ the bank will offer traditional set of products, such as payments or retail banking, but would optimize cost by fully digitizing and automating processes.
- ✓ Examples: ING Bank as a digital bank

Source: McKinsey (2018). New rules for an old game: Banks in the changing world of financial intermediation

Scenario 2: Uberization of banking

What about information-sharing among banks and non-banks?



Who will be the cloud/ IT integrator leader?

Scenario 3: Blockchain

- Blockchain = software that enables data sharing across a network of individual computers. A blockchain describes computers transferring blocks of records in a chronological chain.
- Blockchain technology is also known as distributed ledger technology (**DLT**). The term "distributed ledger" refers to the concept that each user shares the same "ledger" or set of accounts as defined by the software.
- It works through shared software infrastructure and trust. Users agree to a software protocol describing the rules for the type, quality, and transferability of data in addition to the rules for authorisation, verification and permutation.
- Users trust that information entered into and transactions conducted over the blockchain software are valid.
- Why to use blockchain in banking today? Cost savings!

Source: Oliver Wyman (2016): Blockchain in Capital Markets - The Prize and the Journey

Blockchain and banking 1/3

- Blockchain technology provides **a way for untrusted parties to come to agreement on the state of a database**, without using a middleman. By providing a ledger that nobody administers, a blockchain could provide specific financial services — **like payments or securitization — without the need for a bank**.
- Further, blockchain allows for the use of tools like “smart contracts,” self-executing contracts based on the blockchain, which could potentially automate manual processes from compliance and claims processing to distributing the contents of a will.
- Blockchain technology and DLT have a massive opportunity to disrupt the **$5trillion banking industry** by disintermediating the key services that banks provide

Source: https://www.cbinsights.com/research/blockchain-disrupting-banking/

Blockchain and banking 2/3

1) **Payments:** By establishing a decentralized ledger for payments (e.g. Bitcoin), blockchain technology could facilitate faster payments at lower fees than banks.
2) **Clearance and Settlement Systems**: Distributed ledgers can reduce operational costs and bring us closer to real-time transactions between financial institutions.
3) **Fundraising:** Initial Coin Offerings (ICOs) are experimenting with a new model of financing that unbundles access to capital from traditional capital-raising services and firms.
4) **Securities**: By tokenizing traditional securities such as stocks, bonds, and alternative assets — and placing them on public blockchains — blockchain technology could create more efficient, interoperable capital markets.

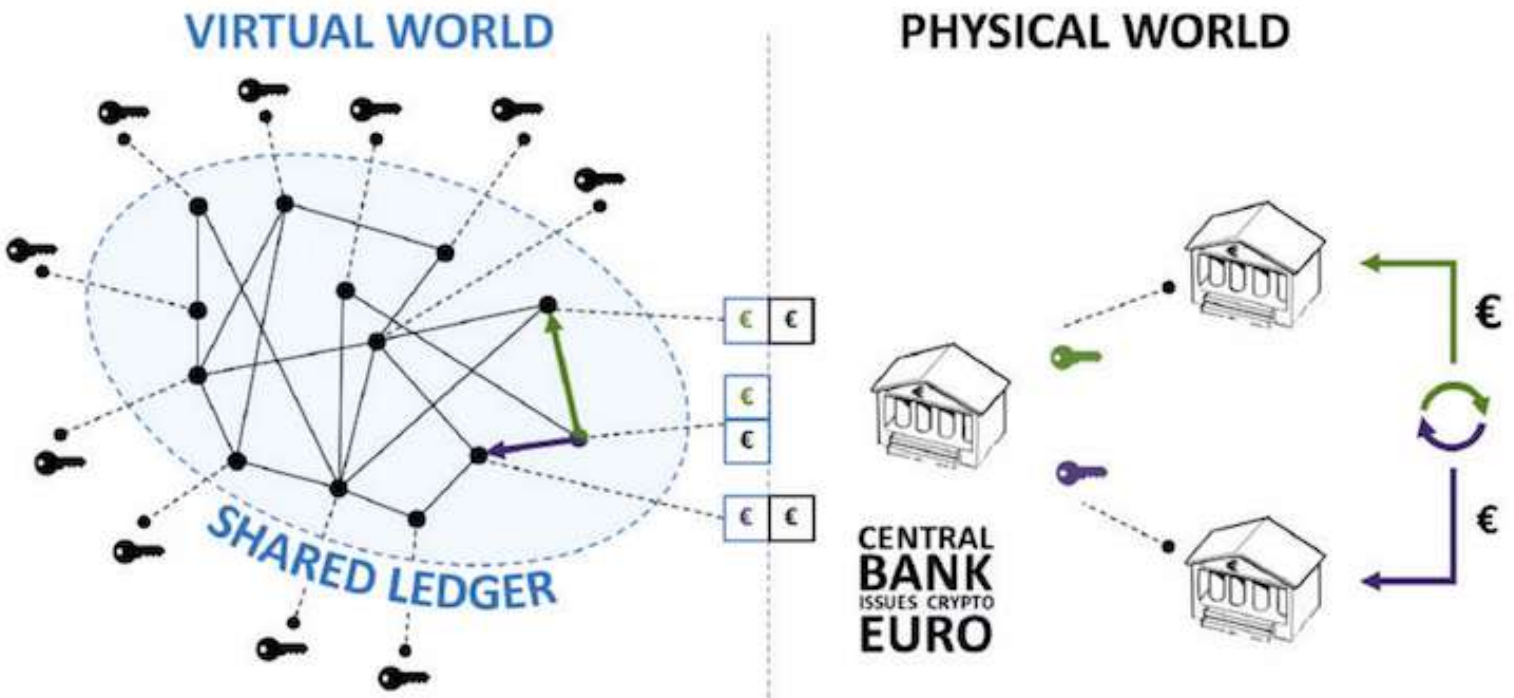
Source: https://www.cbinsights.com/research/blockchain-disrupting-banking/

Blockchain and banking 3/3

5) **Loans and Credit:** By removing the need for gatekeepers in the loan and credit industry, blockchain technology can make it more secure to borrow money and provide lower interest rates.
6) **Trade Finance**: By replacing the cumbersome, paper-heavy bills of lading process in the trade finance industry, blockchain technology can create more transparency, security, and trust among trade parties globally.
7) **Customer KYC and Fraud Prevention**: By storing customer information on decentralized blocks, blockchain technology can make it easier and safer to share information between financial institutions.

Source: https://www.cbinsights.com/research/blockchain-disrupting-banking/

Blockchain is changing payments today



Source: https://ripple.com/insights/european-banking-association-emphasizes-promise-of-distributed-ledgers/

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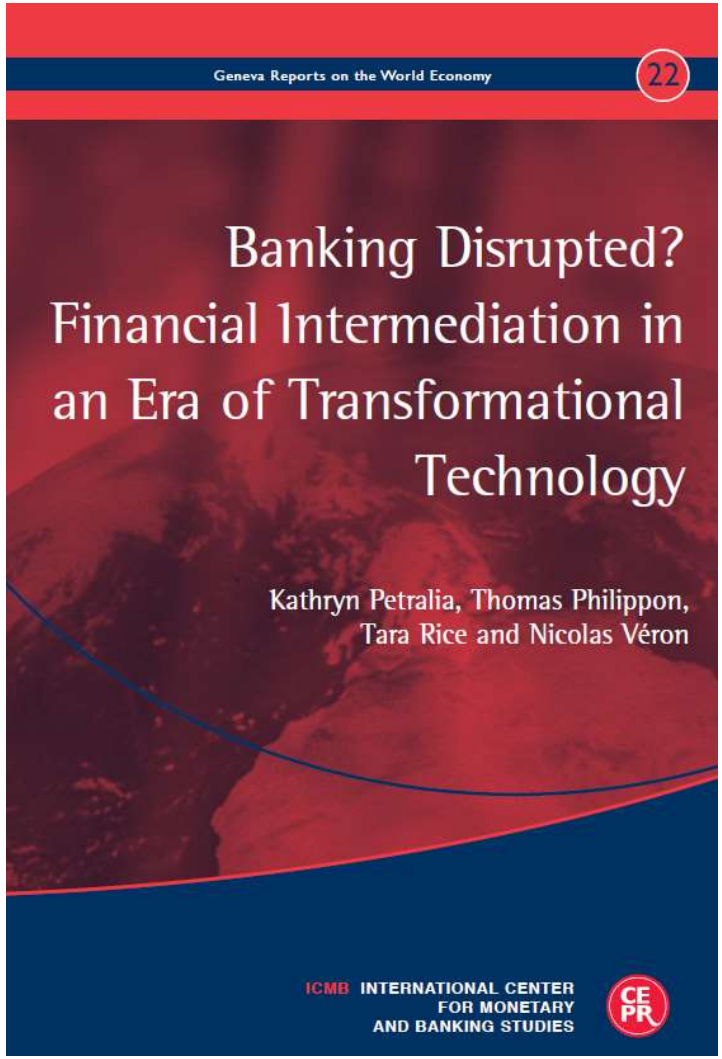
Conclusion

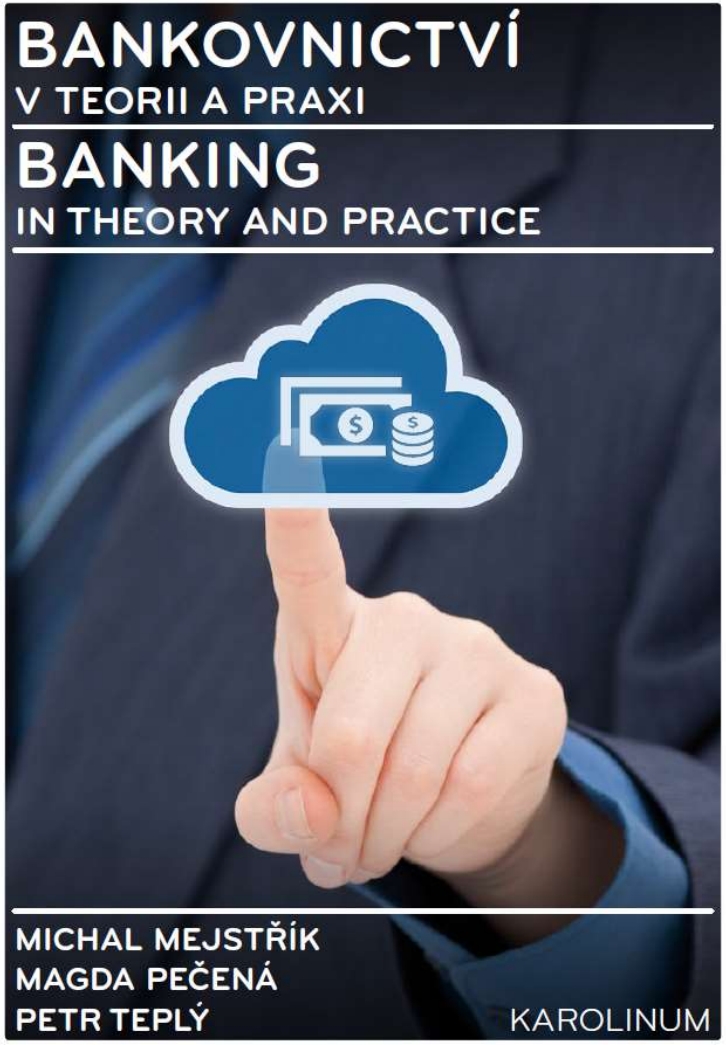
1) New Normal in banking and Bigtech/Fintech activities result in lower banks´ margins and profitability
2) Bank-Bigtech partnerships are expected
3) The blockchain technology is promising but not so used yet

Discussion

Thanks for your attention.

Useful sources





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