



## The impact of fintech on the banking sector

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### Abstract

Financial technology—commonly known as fintech—has emerged as one of the most transformative forces reshaping the global banking and financial services industry. Driven by advances in mobile computing, cloud infrastructure, artificial intelligence (AI), blockchain, and big data analytics, fintech has disrupted traditional banking models, altered competitive dynamics, redefined customer expectations, and prompted sweeping regulatory responses. This paper examines the multidimensional impact of fintech on the banking sector up to 2018–19, drawing on investment data, adoption metrics, regulatory developments, and comparative case studies across developed and emerging economies. It finds that while fintech has substantially enhanced financial inclusion, efficiency, and innovation, it has also introduced new risks around data privacy, systemic stability, and regulatory arbitrage.

**Keywords:** Financial Technology (Fintech), banking sector, financial innovation, digital banking, mobile computing, cloud infrastructure

### Introduction

The word 'fintech'—a portmanteau of 'financial technology'—is not new. Banks have long employed technology: ATMs were introduced in the late 1960s, electronic funds transfer in the 1970s, and online banking in the 1990s. However, the fintech revolution of the 2010s is qualitatively distinct in its scope, speed, and disruptive potential. The proliferation of smartphones, the democratisation of cloud computing, open-source development, and a post-2008 regulatory environment that weakened trust in incumbents collectively created the conditions for a new generation of non-bank financial firms to challenge established players on their core turf.

By 2018–19, the fintech sector spanned a wide array of services: digital payments, peer-to-peer (P2P) lending, robo-advisory, insurtech, regtech, blockchain-based settlement, and digital-only banking (neobanks), and cryptocurrency exchanges. Global fintech investment surged to a record \$111.8 billion in 2018—more than double the \$51.1 billion recorded in 2017—driven by mega-deals including the \$14 billion acquisition of WorldPay and the \$12.8 billion acquisition of Refinitiv. The sheer scale of capital flowing into the sector underscored its centrality to the future of financial services.

### Evolution and Landscape of Fintech

#### 1. Historical Development

Year	Global Investment (\$bn)	Number of Deals	US Share (\$bn)	Asia-Pacific (\$bn)
2013	18.9	1,142	9.4	2.1
2014	30.8	1,434	14.7	3.8
2015	46.7	1,803	27.4	8.4
2016	24.7	1,076	13.5	5.4
2017	51.1	1,128	29.3	16.8
2018	111.8	2,196	54.5	22.7

Source: KPMG Pulse of Fintech H2 2018 (2019)<sup>[7]</sup>; CB Insights Global Fintech Report 2018<sup>[3]</sup>

### Impact on Traditional Banking

#### 1. Payment Systems and Transaction Banking

The payments sector has been fintech's first and most consequential battleground. Traditional banks' dominance of payments—via card networks, wire transfers, and cheque

Fintech's modern era can be periodised into three overlapping phases. The first phase (approximately 2005–2012) was characterised by the emergence of P2P lenders (Zopa in the UK, Lending Club and Prosper in the US), digital payment start-ups (PayPal having already achieved scale), and the early smartphone revolution catalysed by the iPhone's 2007 launch. The second phase (2012–2016) saw the explosion of mobile wallets, robo-advisors (Betterment, Wealthfront), blockchain experimentation, and the rise of challenger banks. The third phase (2016–present), reaching its zenith around 2018–19, is defined by institutional engagement, massive venture capital and private equity investment, regulatory sandboxes, and the global expansion of Chinese fintech giants Alipay and WeChat Pay.

#### 2. Global Investment Trends

According to KPMG's Pulse of Fintech report (2019)<sup>[7]</sup>, global fintech investment (combining venture capital, private equity, and mergers and acquisitions) rose from \$18.9 billion in 2013 to \$111.8 billion in 2018. The United States remained the dominant market, attracting \$54.5 billion in 2018, followed by China (\$25.5 billion) and the United Kingdom (\$3.3 billion). Asia-Pacific as a region attracted \$22.65 billion, reflecting the rapid maturation of the Chinese, Indian, and Southeast Asian fintech ecosystems.

clearing—has been dramatically eroded by digital payment platforms. In India, the Unified Payments Interface (UPI), launched in 2016, processed over 5.35 billion transactions worth Rs 8.77 trillion (\$123 billion) in the fiscal year 2018–19, fundamentally altering the domestic payments landscape

and reducing the share of bank-intermediated cash transactions.

Globally, mobile payment transaction values reached \$930 billion in 2018, up from \$601 billion in 2016 (Statista, 2019). In China, Alipay and WeChat Pay together processed over \$37 trillion in mobile payments in 2018, dwarfing the combined volume of Visa and Mastercard. These platforms bypassed the traditional bank account model, positioning themselves as de facto financial intermediaries for hundreds of millions of consumers.

For incumbent banks, the consequences have been a gradual but meaningful erosion of payment fee revenues, which historically constituted a significant share of non-interest income. McKinsey estimated in 2018 that banks faced a risk of losing 15–25% of payment revenues to fintech competitors by 2025 if they failed to innovate.

**2. Lending and Credit Intermediation**

P2P and marketplace lending platforms disrupted the traditional credit intermediation model by matching borrowers directly with investors, thereby bypassing banks' balance sheets. In the United States, Lending Club originated approximately \$47 billion in personal loans between its 2007 founding and end-2018, while SoFi expanded into student loan refinancing, mortgages, and personal loans. In the UK, Funding Circle facilitated over £6 billion in small business loans by 2018–19.

However, the sector also exhibited vulnerability. Lending Club faced a governance crisis in 2016, and several platforms experienced rising default rates as credit cycles matured. By 2018–19, the pure P2P model was evolving toward institutional funding models, where banks and asset managers—rather than retail investors—became the primary capital providers. This created a paradox: fintech lenders increasingly relied on bank capital even as they competed with banks for borrowers.

Simultaneously, banks themselves began leveraging AI and machine learning for credit underwriting, using alternative data sources—utility payments, social media activity, mobile phone usage—to assess creditworthiness for thin-file

or unbanked borrowers. This accelerated financial inclusion while raising concerns about algorithmic bias and fair lending.

**3. Wealth Management and Robo-Advisory**

Robo-advisory platforms—automated digital investment services using algorithm-driven portfolio construction—challenged the traditional private banking and wealth management business. In the United States, assets under management (AUM) by robo-advisors reached approximately \$980 billion in 2018, growing from near zero in 2012. Betterment and Wealthfront, the two leading independent robo-advisors, managed \$16 billion and \$11 billion respectively by end-2018.

Established banks and asset managers responded with their own digital advisory offerings: Vanguard's Personal Advisor Services accumulated over \$100 billion in AUM by 2018, making it the largest robo-advisor globally. Schwab Intelligent Portfolios, Goldman Sachs' Marcus platform, and Morgan Stanley's Access Investing similarly represented incumbents' efforts to hybridise human and algorithmic advice. The overall effect was significant fee compression across the wealth management industry.

**4. Neobanks and Digital-Only Banking**

Perhaps the most direct competitive threat to traditional retail banks came from fully digital, app-only challenger banks. In Europe, Revolut (founded 2015), N26 (founded 2013), and Monzo (founded 2015) collectively surpassed 10 million customers by 2018–19, growing without physical branch networks by offering zero-fee international transactions, real-time spending notifications, and seamless account opening. Revolut reported 4 million customers and processed over \$30 billion in transactions in 2018.

In the United States, Chime, Simple, and Varo Money attracted millions of underserved consumers with fee-free checking and savings accounts. In Brazil, Nubank—valued at \$4 billion in its 2018 funding round—had issued over 5 million credit cards without a single physical branch, disrupting one of the world's most concentrated and fee-heavy banking sectors.

**5. Selected Neobank Growth Metrics (2017–2019)**

Neobank	Country	Founded	Customers (2018–19)	Valuation (\$bn)	Key Feature
Revolut	UK	2015	4 million	1.7	Multi-currency
N26	Germany	2013	2.3 million	2.7	EU passporting
Monzo	UK	2015	2 million	1.0	Smart budgeting
Nubank	Brazil	2013	8 million	4.0	Free credit card
Chime	USA	2013	3 million	1.5	No-fee banking

Source: Company disclosures, TechCrunch, CB Insights (2018–19)<sup>[3]</sup>.

**Regulatory Response**

**1. Open Banking and PSD2**

One of the most consequential regulatory developments was the European Union's second Payment Services Directive (PSD2), which came into force in January 2018. PSD2 mandated that banks open their payment infrastructure and customer data (with customer consent) to licensed third-party providers (TPPs) via standardised Application Programming Interfaces (APIs). This 'open banking' regime fundamentally altered competitive dynamics by requiring incumbent banks to facilitate the very competition that threatened their customer relationships.

The UK's Open Banking Implementation Entity (OBIE), established by the Competition and Markets Authority in

2017, required the nine largest UK banks to implement open banking APIs by January 2018. By end-2018, over 100 regulated third-party providers were using these APIs, enabling account aggregation, payment initiation, and personalised financial management services.

**2. Regulatory Sandboxes**

Recognising that traditional regulatory frameworks were poorly suited to fast-moving fintech innovation, regulators in multiple jurisdictions established 'sandboxes'—controlled environments permitting start-ups to test products with real customers under relaxed regulatory requirements. The UK's Financial Conduct Authority (FCA) launched the first regulatory sandbox in 2016; by its third cohort (2018), it had

tested over 50 firms across areas including distributed ledger technology, automated advice, and innovative payment systems. Singapore's Monetary Authority of Singapore (MAS), Australia's ASIC, and Hong Kong's HKMA established comparable frameworks.

India's Reserve Bank of India (RBI) launched a fintech regulatory sandbox framework in 2019 covering retail payments, digital KYC, financial inclusion products, cybersecurity, and smart contracts. This signalled the growing institutionalisation of fintech oversight in emerging markets.

**3. Cryptocurrency and Blockchain Regulation**

The explosion of Initial Coin Offerings (ICOs)—through which start-ups raised capital by issuing cryptocurrency tokens—and the Bitcoin price bubble of late 2017 (peaking near \$20,000 before collapsing to under \$4,000 by end-2018) prompted urgent regulatory responses. The U.S. Securities and Exchange Commission (SEC) clarified that many ICO tokens constituted securities subject to existing laws. China banned ICOs outright in September 2017 and subsequently restricted cryptocurrency exchanges. Japan, by contrast, regulated cryptocurrency exchanges under the Payment Services Act from 2017, creating a licensing regime that provided legal clarity.

**Emerging Market Dynamics**

**1. Financial Inclusion**

Perhaps fintech's most profound impact in emerging and frontier markets has been on financial inclusion. The World Bank's Global Findex Database (2017) reported that 1.7 billion adults globally remained unbanked, yet two-thirds of them owned a mobile phone—creating a direct pathway for mobile-based financial services. Sub-Saharan Africa's M-Pesa, launched in Kenya in 2007, reached 30 million active users across seven countries by 2018, facilitating \$26.3 billion in transactions annually and enabling millions of previously excluded households to save, borrow, and transfer money.

In India, the government's Jan Dhan Yojana financial inclusion scheme, launched in 2014, combined with the Aadhaar biometric identity system and mobile connectivity to create what became known as the India Stack—a digital public infrastructure that enabled fintech companies to deliver services to hundreds of millions of previously excluded citizens. By March 2019, Jan Dhan accounts numbered over 354 million with deposits of Rs 963 billion (\$13.5 billion).

**2. China: The World's Largest Fintech Market**

China's fintech ecosystem, led by Ant Financial (the financial arm of Alibaba) and Tencent's WeChat Pay, had by 2018–19 achieved penetration rates that dwarfed those of any other major economy. Ant Financial's Alipay served over 870 million annual active users; its Yu'e Bao money market fund, launched in 2013, had grown to become the world's largest money market fund with \$168 billion in

AUM by 2018. Ant Financial's credit scoring system, Sesame Credit, processed alternative data across Alibaba's ecosystem to extend micro-credit to hundreds of millions of small merchants and consumers.

The Chinese government's measured but ultimately firm regulatory tightening—capping Yu'e Bao's individual holdings, introducing P2P lending regulations that forced thousands of platforms to shut down, and implementing strict data localisation requirements—illustrated the inherent tension between fintech innovation and state oversight.

**Risks and Challenges**

**1. Cybersecurity and Data Privacy**

The digitisation of financial services expanded the attack surface for cybercriminals dramatically. The SWIFT banking communication network was exploited in a series of heists beginning with the \$81 million Bangladesh Bank cyber-heist in 2016, exposing vulnerabilities in the global interbank system. A 2018 IBM study estimated the average cost of a financial services data breach at \$5.86 million—the highest of any industry. The EU's General Data Protection Regulation (GDPR), effective May 2018, imposed stringent data handling obligations on all firms processing EU citizens' data, with penalties of up to 4% of global annual turnover.

**2. Systemic Risk and Regulatory Arbitrage**

As fintech firms grew in scale, concerns emerged about systemic risk. Because many fintech lenders originated loans funded by institutional capital but held off-balance-sheet, stress events could trigger rapid credit withdrawal without the buffers that bank capital adequacy frameworks provide. The Financial Stability Board (FSB) in its 2017 report noted that while the fintech sector remained too small to pose systemic risks, rapid growth warranted monitoring—particularly the activities of Big Tech firms (Google, Amazon, Facebook, Apple, and their Chinese counterparts) entering financial services with vast existing customer bases.

**3. Impact on Bank Profitability and Employment**

The competitive pressure from fintech on fee revenues—in payments, wealth management, and lending—directly compressed bank profitability margins. European banks, already grappling with low interest rates and high non-performing loans, faced particular pressure. A 2018 McKinsey Global Banking Annual Review estimated that 30–40% of incumbent banks' profits were at risk from digitalisation and fintech competition over the following decade.

Employment implications were significant. Citigroup estimated in 2018 that digitalisation could eliminate 30% of banking jobs—approximately 770,000 positions in the US and Europe—over the following decade, predominantly in branch operations, back-office processing, and routine customer service roles subsequently automated by chatbots and AI.

**4. Key Risk Indicators in Fintech-Impacted Banking (2018–19)**

Risk Category	Indicator / Data Point	Source
Cybersecurity	Avg. data breach cost (fin. services): \$5.86mn	IBM Cost of Data Breach 2018 <sup>[6]</sup>
Credit Risk (P2P)	US P2P default rate rose to 6.1% (2018)	Lending Club SEC Filings 2018
Employment Disruption	Est. 770,000 banking jobs at risk (US & EU)	Citigroup 2018 <sup>[4]</sup> Report

Revenue Erosion	15–25% of payment revenues at risk by 2025	McKinsey Global Payments 2018 <sup>[8]</sup>
Regulatory Non-compliance	GDPR fines issued to fin. firms: €56mn (2018–19)	GDPR Enforcement Tracker
Market Concentration	Top 5 payment fintechs: 68% of digital txn volume	BIS Working Paper 2019

**Source:** Various; figures are approximate and indicative.

### Bank Responses and Strategic Adaptation

Incumbent banks have responded to the fintech challenge through four principal strategies: internal innovation, partnership, investment, and acquisition. Internally, banks invested heavily in digital transformation—JPMorgan Chase committed \$10.8 billion to technology in 2018, Goldman Sachs launched its direct consumer banking platform Marcus (which had attracted \$23 billion in deposits by end-2018), and BBVA positioned itself as a 'digital bank with a banking licence.'

Partnerships between banks and fintechs proliferated. Many P2P lenders transitioned to bank-partnership models: Lending Club partnered with WebBank; OnDeck partnered with JPMorgan to offer small business loans under the Chase brand. These arrangements allowed banks to benefit from fintech's technological agility while providing fintechs with capital, regulatory cover, and distribution.

Bank investment in fintech grew substantially. In 2018, banks and financial institutions participated in fintech venture funding rounds worth \$25.5 billion globally (CB Insights). Goldman Sachs, Citigroup, and JPMorgan emerged as the most active bank venture investors. Acquisitions also accelerated: Banco Santander acquired a majority stake in Ebury, a B2B fintech; ING acquired Payvision; and BBVA acquired US digital bank Simple.

### Conclusion

Fintech's impact on the banking sector through 2018–19 has been profound, multidimensional, and still unfolding. In payments, lending, wealth management, and customer experience, fintech firms have compelled banks to innovate at a pace previously unknown in an industry long characterised by oligopoly and incumbency advantage. Simultaneously, fintech has accelerated financial inclusion in emerging markets, bringing hundreds of millions of previously excluded people into the formal financial system. Yet the picture is not uniformly disruptive. Many fintechs have found that scaling without a bank licence, regulated deposit base, or established trust is deeply challenging. The era of pure disruption has given way to an era of collaboration, with banks and fintechs finding complementary roles within an evolving ecosystem. Regulatory frameworks—from PSD2 to regulatory sandboxes to GDPR—have sought to balance innovation with consumer protection, systemic stability, and fair competition.

Looking beyond 2018–19, the entry of Big Tech companies into financial services—leveraging vast data assets, global customer bases, and unparalleled technology infrastructure—posed the most existential longer-term challenge to incumbent banks. The decade ahead would determine whether banks could reinvent themselves as technology companies with banking licences, or whether they would be relegated to the role of regulated utilities in a fintech-dominated ecosystem.

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