

# **Brave New World That Hath Such Risks in It: Giant Tech Firms and Systemic Danger**



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## Key Points

- Giant multi-platform companies such as Amazon, Google, and Facebook prosper due to business models that, as they are expanded to retail financial products and core-infrastructure services, pose consumer-protection, opacity, and structural risk of increasingly systemic proportion.
- Single-provider cloud computing and other emerging fintech business models repeat risk configurations that proved disastrous before 2008.
- Radical transformation of core financial services to a multi-platform model is likely also to increase economic inequality.
- The regulatory “watch-and-wait” strategy repeats pre-crisis inaction allowing problematic practice to turn toxic.

It is a pleasure to follow former OFR Director Berner before you today to assess the shape of financial-market risk and what can best be done to address it. Dick has rightly described the significant improvements in bank capital, liquidity, and resilience since the great financial crisis. I'll move on to address increasing financial-market dependence on nonbanks not just for credit availability, but also for the operational services long deemed critical to the core of the global financial infrastructure. Exempt from recovery and resilience standards, opaque in underwriting and governance, and concentrated in often alarming respects, these nonbanks pose new risks which global and U.S. policy-makers have addressed only in lengthy, but still inconclusive reports. But, what if it turns out, as these reports fear, that global financial-market reliance on a single cloud-computing model is a thin reed for resilience under stress as simple as that of a power-grid black-out? What if multi-platform companies with stakes in finance, commerce, telecommunications, manufacturing and so much more pose risks of a far different magnitude than those mitigated by post-crisis bank regulation? And just what could one huge enterprise with so much big data on each of us choose to do with them?

And, what if one or another of these risks manifests itself and we can't do anything more about it than policy-makers did in August of 2008? I know I fear the worst as the financial market reshapes itself in the face of regulatory asymmetry and fast-changing technology. But fearing the worst can often save us from it. Drawing on an in-depth report my firm issued earlier this year,<sup>1</sup> I'll outline emerging infrastructure risks and why we should quickly do more than just monitor them.

## **Capital and Operational-Risk Management**

A critical question underpinning the regulatory construct that is still largely unanswered as fintech evolves is who owns or controls the use of consumer and customer data. The fintech ecosystem is increasingly populated by giant multi-platform companies and premised on little to no privacy protections for consumer data housed outside regulated financial institutions. Recent privacy efforts in the European Union and other nations show the challenges and even risks of *post-hoc* efforts to redefine data ownership after unlimited use becomes a firm's or even an industry's *raison d'être*.

The need for action derives from the fact that, when customer data are used in ways that put capital at risk, an institution's self-protection incentives align – at least to some degree – with those of its customers because both take risk when privacy and proprietary data are breached. When a regulated financial provider with capital at risk owns customer personally-identifiable information (PII) or similarly-sensitive data, it is likely to have the resources with which to make good on fraudulent, data-breach, or similarly problematic transactions such as those for which current U.S. law assigns principal liability to the financial provider. In the event of large-scale disruption to a payment provider such as Venmo or to a non-bank payment service (e.g., Amazon), funds may be available for minor disruptions, but deep pockets for sustained losses are uncertain even at giant platform companies. Just yesterday, the president of the Federal Reserve Bank of Atlanta observed that consumers of new fintech payment products run considerably more risk than those in traditional, if slower and less integrated, payment products.<sup>2</sup>

The International Monetary Fund has recently estimated<sup>3</sup> that financial-institution cyber-risk – now so grave it ranks as a systemic risk – ranges between ten and thirty percent of net income, a figure that takes into account only one type of operational risk in a sector under increasing attack from many quarters. With some large fintech companies still hard pressed to show a profit, let alone retain capital, these risks are at best problematic.

Even if a provider's solvency is not put at risk by making customers whole, the lack of clear legal responsibility to do so may well put vulnerable customers at significant risk, creating personal and even systemic harm. In 1974, a German bank, Herstatt, caused a global financial crisis due to lost foreign-exchange transaction capacity. In the Herstatt case, only foreign-exchange markets were at risk, but this still meant grave danger to cross-border trade and market valuations. Slow cross-border technology at the time combined with governmental liquidity support saved the day. On September 11, 2001, a very different systemic risk – the World Trade Center attack – destroyed critical infrastructure. Market liquidity was then saved only by the largest injection prior to 2008 of Federal Reserve liquidity support to major U.S. banks and, thus, the global financial system. In these and other close calls with operational destruction, regulated banking survived largely due to capitalized resources and government support. Subject to lightning-strike operational risk, major fintech companies nonetheless have few capitalized resources and no right to FRB or other forms of federal liquidity assistance.

In addition to capitalized resources to absorb operational risks, banks and regulated exchanges are subject to extensive contingency-planning, redundancy, cyber-security, and even “living-will” requirements to ensure ongoing operations even under acute stress (e.g., the 9/11 attack, Hurricane Sandy). Major platform companies have indeed held firm under what is doubtless endless attack, but it remains unclear if their self-imposed standards are sufficient – the financial industry's never were, hence all the *post-hoc* regulations that toughen them up.

## Opacity

Proprietary, complex, model-driven, and often self-governing systems are a widespread concern across the spectrum of fintech operations from credit underwriting to cloud computing to mobile-payment delivery. And, as a recent draft report<sup>4</sup> from Sen. Mark Warner (D-VA) found, many fintech business models are based on or offered in concert with services that offer free products (e.g., contact networks, search capacity) in return for rights to use data in ways (e.g., monitoring browsing to price credit) little understood and often undisclosed to consumers. Global and U.S. reports have highlighted at least some of these concerns, often focusing on the risk that fintech systems may use information gained from commercial transactions to “up-price” financial products or limit offerings in exclusionary or even discriminatory ways. However, few if any actions to date have countered these risks.

One action option would require that fintech providers take on obligations as “information fiduciaries.”<sup>5</sup> An “information fiduciary” would have duties akin to those well-understood for financial fiduciaries – i.e., to use consumer information in the interest of the consumer, not for its own profit or other advantage known to be incompatible with the consumer's interest. A fiduciary duty is well-understood for financial-service providers, albeit controversial in connection with providing investment advice. Given the problems of disclosures in this arena, it is appropriate to evaluate the extent to which fiduciary duties should apply to the PII gathered directly when fintech accounts are opened, and when fintech-related PII is used to target advertising, alter commercial-goods pricing, or otherwise affect the operations of the PII-holder not directly authorized by the consumer. Duties as an information fiduciary could also apply if PII is derived in the course of other transactions (e.g., messaging, personal postings) that is then used for fintech purposes.

Notably, U.S. bank holding companies are barred from “tying” traditional banking products sought by a customer (e.g., a loan) with a requirement or price incentive for the purchase also of an additional

product (e.g., an insurance policy). As a result, knowing a lot about a bank customer makes it considerably more difficult to win market advantage. No such restraints apply to fintech companies unless they become known to the market and, even then, only if the Federal Trade Commission is willing or able to consider them unfair or deceptive acts or practices. A Senate Commerce Committee hearing yesterday took the FTC to task for almost no meaningful regulatory or enforcement action in this sector, and a good thing too.

In general, the only limitations governing use of PII pertain to privacy protection and recent history has shown those outside the regulated financial sector to be, at best, porous. Indeed, the FTC generally has only after-the-fact enforcement power, not the authority to issue rules that address cyber-security, consumer-protection, or privacy problems. Although the FTC's safeguard rule does establish minimum information security program standards for companies "significantly engaged" in financial activities, its definition of financial activities is narrow and does not extend to financial activities conducted in firms such as all the giant platform companies – where fintech is only part of a broader corporate empire.

Banks are also required to keep careful documentation on and then to validate their underwriting and product-offering procedures. Absent any effort by the Bureau of Consumer Financial Protection to assert authority, no such examination or documentation requirements apply to fintech services, making it difficult to evaluate if problematic outcomes are the result of market factors or illegal and improper actions. An *American Banker* article highlights a new study finding that artificial-intelligence underwriting is at least as discriminatory as more traditional models with it comes to race and ethnicity.<sup>6</sup>

All of these PII-protection and consumer standards create significant risks for consumers and market integrity. The asymmetry in the rules between banks and non-banks makes these risks even more problematic because banks may well exit certain businesses that on their face appear appealing to consumers – i.e., they are offered without charge – while non-bank companies deploy internal, often hidden techniques to profit from PII without the limits applicable to regulated companies.

Opacity also poses risk beyond PII use. While it is true that transparency and audit-ability slow down AI and machine learning (ML), opacity in critical decision processes – e.g., credit provision, employment – provides essential protections not needed for small-dollar commercial transactions. Untrammelled business models may thus be considerably more problematic when platform companies go beyond current offerings to activities such as brokering stock sales, providing investment advice, lending funds on which small retailers depend, and supporting critical market infrastructure. Outside retail finance, opacity may also protect trading strategies, investment models, and transaction-processing infrastructure in ways that add efficiency but also pose conflict-of-interest, resilience, market-correlation, and structural-resilience problems. The inability of companies, let alone regulators, to validate and back-test AI/ML assumptions or to anticipate operational limitations in the third-party technology (e.g., mobile phones) upon which regulated-product delivery increasingly depends is also often mentioned by policy-makers as a significant fintech worry.

## **Tech Power, Inequality, and Crisis Risk**

As discussed above, giant tech companies already threaten to become natural monopolies or even oligopolies. This is of course a problem transcending financial regulation, but it warrants particular attention given the strong link between increasing economic inequality and greater vulnerability to

another great financial crisis. A post on my firm's *Economic Equality* blog<sup>7</sup> analyzes a paper from the Federal Reserve Bank of San Francisco finding that, even if there isn't an asset-price bubble (usually seen as a crisis accelerant), economic inequality on its own not only stokes financial crises, but also is the best predictor that one is about to happen. This paper shows an historical correlation of inequality and crises across seventeen countries over the course of at least the fifty years preceding 2007. A more recent FRB staff paper<sup>8</sup> looking solely at the U.S. concludes that the risk of secular stagnation, deflation, excess credit growth, and financial crises increases in lock-step with income inequality, especially when interest rates are near the zero lower bound. Could giant tech companies make the inequality and crisis link still more inexorable?

Sadly, yes. The risk here comes from rent-seeking – that is, the power of firms with few competitors exempt from utility-like regulation to do largely as they like in terms of product offerings, pricing, operational resilience, and corporate governance. A recent paper<sup>9</sup> explores rent-seeking in detail with regard to giant platform companies, arguing that their ability to generate huge returns skews the overall economy to a small number of owners and high-skill workers compensated largely through capital income. The reasoning here is theoretical, but the fact remains that low-skilled workers – where there are any at platform companies – often struggle to earn enough to sustain even a modest living standard. A recent Federal Reserve conference<sup>10</sup> considered this question along with the extent to which giant platform companies and their rent-seeking advantages undermine productivity, monetary-policy transmission, and other components of equality-enhancing financial policy, but it did not go on to economic equality. Interestingly, observers ranging from Sen. Bernie Sanders (I-VT) to Fox's Tucker Carlson have begun to do so.

It is indeed likely that the very success of U.S. tech companies and their contribution to overall GDP is very unequally shared. The more these companies exploit their market power – i.e., rent seek – the greater their ability to set wages instead of having to respond to them as competitive employers must. Low-skilled workers may thus find themselves in the wage trap already all too evident despite the recent “recovery.”<sup>11</sup> As a result, platform companies with monopoly or even oligopoly power may well increase inequality on their own regardless of their fintech operations, exacerbating crisis risk just by virtue of their enormous clout.

Further, large fintech operations in giant platform companies are likely also to exacerbate the inequality connection. This is because opacity and concentration may combine to deny credit and other forms of economic opportunity to those not favored by AI or ML models focused on profit maximization. The ability of platform companies to “micro-target” offerings or financial-product advertisements to selected groups is also of significant concern, as was most recently evident in a Department of Housing and Urban Development suit against Facebook<sup>12</sup> alleging significant discrimination based on targeting housing advertisements to white and/or wealthy households. Online marketplace lending that uses credit-underwriting models based on factors such as university attended are also likely to have very disparate impact on lower-wealth borrowers, an issue of significant concern also for start-up small businesses given the critical importance of this activity to economic equality. A recent Treasury Department report<sup>13</sup> details these concerns, albeit without proposing any solutions. The record of regulated banks providing banking services to minority populations, women, those with disabilities, and others not seen as high-profit customers is not without reproach. However, the transparency of bank underwriting models, the many regulators scrutinizing compliance, and the impact of the Community Reinvestment Act (CRA)<sup>14</sup> all constrain the ability of banks to maximize profit at the expense of non-discriminatory product and service access.

## Conclusion

With or without virtualization, risk is blind to the legal charter of the entity that takes it unless that legal charter comes with mandatory mitigation measures. Even then, though, risk may not only be mitigated, but also transformed in terms of consumer, macroeconomic, and financial-stability impact. When a business becomes uneconomic under one charter due to risk-mitigation requirements, the activity moves outside the regulatory perimeter if its economic rationale and profit benefits continue in the broader financial-product marketplace. When that financial product is further transformed through application of AI, ML, or other virtualized processes, risk transformation resulting from regulatory arbitrage accelerates because, even though fundamental risk remains, it is obscured by opaque techniques. These may well be faster and smarter than legacy, book-driven procedures, but these benefits do not mitigate risk if speed and smarts are deployed to enhance firm profitability, not long-term safety and soundness.

Virtualized risk becomes still more dangerous when it transfers from many more or less competitive, regulated entities to a very few – or even just one – unregulated provider. When these very happy few govern critical aspects of financial-market infrastructure – i.e., through hardware dominance, cloud computing – risk grows still greater because one firm's profit-maximization incentives can make or break national or even global financial system.

Do we wait and see?

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<sup>1</sup> Karen Petrou, *The Crisis Next Time: The Risk of New-Age Fintech and Last-Crisis Financial Regulation*, (September 6, 2018), available at <http://www.fedfin.com/info-services/issues-in-focus?task=weblink.go&id=456>.

<sup>2</sup> Jonathan Spicer, "Fed official frets over risks to Apple Pay, other mobile payments," *Reuters*, (November 27, 2018), available at <https://www.reuters.com/article/us-usa-fed-payments/fed-official-frets-over-risks-to-apple-pay-other-mobile-payments-idUSKCN1NW2CX>.

<sup>3</sup> Antoine Bouveret, *Cyber Risk for the Financial Sector: A Framework for Quantitative Assessment*, *IMF Working Paper No. 18/143*, (June 22, 2018), available at <https://www.imf.org/en/Publications/WP/Issues/2018/06/22/Cyber-Risk-for-the-Financial-Sector-A-Framework-for-Quantitative-Assessment-45924>.

<sup>4</sup> Senator Mark Warner (D-VA), *Potential Policy Proposals for Regulation of Social Media and Technology Firms*, (2018), available at <https://graphics.axios.com/pdf/PlatformPolicyPaper.pdf>.

<sup>5</sup> Jack M. Balkin, *Information Fiduciaries and the First Amendment*, *UC Davis Law review Vol. 49, No. 4*, (April, 2016), available at [https://lawreview.law.ucdavis.edu/issues/49/4/Lecture/49-4\\_Balkin.pdf](https://lawreview.law.ucdavis.edu/issues/49/4/Lecture/49-4_Balkin.pdf).

<sup>6</sup> Penny Crosman, "Weren't algorithms supposed to make digital mortgages colorblind?," *American Banker*, (November 26, 2018), available at <https://www.americanbanker.com/news/werent-algorithms-supposed-to-make-digital-mortgages-colorblind>.

<sup>7</sup> Karen Petrou, "Another Reason to Avoid Economic Inequality: Increased Financial-Crisis Risk," *Economic Equality Blog*, (October 26, 2017), available at <https://economiequality.blog/2017/10/26/another-reason-to-avoid-economic-inequality-increased-financial-crisis-risk/>.

<sup>8</sup> Isabel Cairó and Jae Sim, *Income Inequality, Financial Crises, and Monetary Policy*, *Federal Reserve Finance and Economics Discussion Series 2018-048*, (May, 2018), available at <https://www.federalreserve.gov/econres/feds/files/2018048pap.pdf>.

<sup>9</sup> Jason Furman and Peter Orszag, *A Firm-Level Perspective on the Role of Rents in the Rise in Inequality*, (October 16, 2015), available at <http://gabriel-zucman.eu/files/teaching/FurmanOrszag15.pdf>.

<sup>10</sup> Federal Reserve Bank of Kansas City, *Changing Market Structure and Implications for Monetary Policy*, *Economic Policy Symposium*, (August 23-25, 2018) available at <https://www.kansascityfed.org/publications/research/escp/symposiums/escp-2018>.

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<sup>11</sup> Matthew Shaw, "Hard Work, Low Pay, High Costs: Life on the Ground in a "Well-Performing" Economy," *Economic Equality Blog*, (August, 21, 2018), available at <https://economiequality.blog/2018/08/21/hard-work-low-pay-high-costs-life-on-the-ground-in-a-well-performing-economy/>.

<sup>12</sup> Department of Housing and Urban Development, "HUD Files Housing Discrimination Complaint Against Facebook," *HUD Press Release No. 18-085*, available at [https://www.hud.gov/press/press\\_releases\\_media\\_advisories/HUD\\_No\\_18\\_085](https://www.hud.gov/press/press_releases_media_advisories/HUD_No_18_085).

<sup>13</sup> Department of the Treasury, A Financial System That Creates Economic Opportunities Nonbank Financials, Fintech, and Innovation, *Report to President Donald J. Trump Executive Order 13772 on Core Principles for Regulating the United States Financial System*, (July, 31, 2018), available at <https://home.treasury.gov/sites/default/files/2018-08/A-Financial-System-that-Creates-Economic-Opportunities---Nonbank-Financials-Fintech-and-Innovation.pdf>

<sup>14</sup> Karen Petrou, How to Turn CRA into a Positive Force for Economic Equality, *Economic Equality Blog*, (January 23, 2018), available at <https://economiequality.blog/2018/01/23/how-to-turn-cra-into-a-positive-force-for-economic-equality/>.