Technology and innovation in financial services have been essential forces in improving individual well-being and strengthening our economy for centuries. Going back to the origins of money itself, which enabled basic economic activities, like lending, trade, and investment, financial technology at its best provides tools that enable and enrich economic life.

At the same time, unchecked innovation can introduce a variety of risks to individuals and the economy. Alternative approaches to lending may provide credit access to new customers but could also lead to overborrowing and excess risk in the system. Faster payment tools can increase convenience and access to funds but may introduce new vulnerabilities to theft, fraud, or money laundering. In recognition of the potential for harm from rapid adoption of new technology, modern financial regulation and supervision has typically focused on “responsible” innovation to promote the safety and soundness of individual financial firms, protect consumers, and ensure overall systemic stability. The result is ideally a balance between safety and innovation.

Although a mandate for responsible innovation can provide necessary speed bumps to innovators that might otherwise “move fast and break things,” it is a framework that, like much of U.S. policy, needs to expand to also consider the broader equity impacts of technology—how it can enable economic opportunity for marginalized populations or simply exclude them in new ways. For example, evidence has found that while machine learning in underwriting can provide more access to products for previously underserved groups, minority borrowers continue to experience higher rates and more expensive financial products. Even basic practices, like using data and social media platforms for advertising, can discriminate against groups by serving them only certain ads and...

1 Historically, banking supervisors in particular have focused on three key areas of concern: 1) the safety and soundness of individual financial institutions, 2) the financial stability of the system as a whole, and 3) consumer protection.
thereby limiting what products they may pursue. Regulators need to start asking not only how new technologies and practices may impact a financial institution’s overall risk, and compliance with existing consumer protection laws, but how that innovation interacts with underlying inequities and the financial outcomes that result from them.

As the introduction of new technology continuously changes financial services, regulators face countervailing pressures to support healthy competition and increased inclusion, while protecting individuals and the economy from new risks and existing bias and inequity. As the inevitable march of innovation pushes banking toward more digital and data-driven technologies, the Federal Reserve Bank of San Francisco is exploring this essential tension between supporting new tools and systems that can benefit individuals and inclusion, and upholding our essential mandate of creating a safe and sound financial system. As part of this mission, we aim to define the concept of financial health from a regulatory perspective to help us embed it as a first principle in our assessment of new technology, considering both the benefits and costs of new innovations to individuals and small businesses.

How Do We Define Our Role as Regulators in a Digital-First Financial System?

Understanding the Impact of Technological Change

A fundamental responsibility we have as regulators is to understand evolving technology. Although regulators do not all need to be technologists, we must be technology-literate and understand potential risk, opportunity, and equity impacts. Regulators must also understand the impact of innovation to conduct forward-looking policymaking, regulation, and supervision.

As part of deepening our own understanding, we must ask such essential questions as:

- Does financial technology that aims to include more people instead introduce alternative forms of bias, exclusion, or exploitation of marginalized communities, including communities of color?
- Could new financial products that leverage behavioral science nudge healthier customer behavior or have detrimental outcomes for specific demographic groups?
- Do business models that offer free services to historically excluded customers built on the mining of valuable customer activity (e.g., data or transaction flow) have a negative impact on financial health?

Defining and Measuring Outcomes

Regulators also have an important role to play in defining the outcomes society wants to see for every citizen who interacts with the financial system. Historically, U.S. financial regulation

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3 HUD v. Facebook, Inc., Charge of Discrimination, FHEO No. 01-18-0323-8 (filed March 28, 2019), https://www.hud.gov/sites/dfiles/Main/documents/HUD_v_Facebook.pdf. Notably, HUD also alleged that Facebook’s advertising platform was actively being used by lenders to advertise mortgage credit products.
5 For this work, the SF Fed defines financial technology as anything that is digitally based, including new technologies, techniques, and business models.
has focused on identifying risky or harmful activities and curtailing them, relying on disclosures and market competition to let consumers choose from there. This focus on activities rather than outcomes, and negative processes rather than potential opportunities, may overemphasize harm mitigation at the expense of incremental improvements that benefit marginalized citizens. As Federal Reserve Governor Michele Bowman noted in a December 2020 speech on encouraging beneficial innovation in the community banking system, “[W]hile it is essential to safety and soundness that banks understand, monitor, and mitigate risks associated with their third parties, [we are] sensitive to the burden that due diligence can pose. Being unsure of the questions to ask a third-party vendor, or whether a response is sufficient, should not keep community banks from accessing innovation, yet we continue to hear that these are real challenges.”

Regulators can balance traditional risk mitigation by assessing the value of financial institutions’ seeking to use technology to promote beneficial outcomes, like racial equity and financial health. Regulation that strikes this balance can help firms align their strategies and risk management practices to use technology to build a safe, sound, and inclusive financial system. In that spirit, there is an opportunity not only to uphold traditional regulation focused on risk and harm mitigation, but also to consider long-term outcomes of products for individuals and the financial system.

To get to a place where regulators can begin to assess outcomes, the concept of financial health and well-being needs to be defined. One traditional indicator of financial inclusion is the percentage of a population that is banked or can readily access credit. We need to think beyond those metrics and define what healthy and inclusive outcomes look like for individuals, creating a framework for measuring financial health that may evolve over time. As the SF Fed considers how to promote this outcomes-oriented mindset, we are committed to engaging with local communities and financial service providers to define what they mean today, and into the future.


7 Financial inclusion discussions in the United States often focus on the disproportionate share of African Americans among the estimated 7 percent of households that remain unbanked. Any alternative indicator of banking inclusion should be used to track progress toward racial equity.
What is financial health? 8

The Financial Health Network (FHN) and Consumer Financial Protection Bureau (CFPB) have two working definitions of financial health that can inform what outcomes we might define as “financially healthy.”

+ FHN defines financial health as “when an individual’s daily financial systems help them build resilience and pursue opportunities over time. For individuals and households, financial health can lead to greater physical health, job and housing stability, educational success, and reduced overall stress.” FHN scores health according to eight qualitative measures of spending, saving, borrowing, and planning.

+ The CFPB defines a related concept, financial well-being, as “a state of being wherein a person can fully meet current and ongoing financial obligations, can feel secure in their financial future, and is able to make choices that allow them to enjoy life.”

Ideas for outcomes-oriented metrics include the ability for individuals to:

+ Transfer and receive funds (including wages and public benefits) at low cost and a cadence that works for their life.

+ Have access to safe, liquid savings that earn a market rate of interest.

+ Borrow at an affordable price to invest in their future while avoiding excessive debt.

+ Be protected from unequal treatment that negatively impacts economic activity.

+ Access new products and services based on their comprehensive history of productive economic and financial activity.

+ Understand how data tracked across their digital lives impact access to financial services; and be aware of the use of behavioral science-informed products.

Additionally, as regulators focus more on outcomes, and work with society to define what we want those to look like, it is essential to measure and track those outcomes over time. Although being more open to changing technologies and practices can hopefully benefit the country, it is also our responsibility as public servants to test and confirm whether innovations are living up to their promise.

Promoting Positive Change

To promote racial equity in the financial system, regulators also need to broaden their mindset beyond simply preventing obvious harms, like discrimination, to include promoting positive behavior in the market. Harm prevention may target some of the worst impacts of overt racism in the financial system (e.g., redlining or predatory lending), but it does not guarantee the solution to

many problems of unequal financial opportunity and overall well-being. These issues are driven by systemic bias, misaligned business models, and many other unseen—and often unintentional—forces. The question that regulators are left with is how we can be more proactive in encouraging action that can address these forces, rather than using only tools to discourage bad behavior.

The papers featured in this journal recommend proactive steps that regulators and policymakers can take to build a more inclusive financial system, and it is our job to explore these ideas with all stakeholders: from pushing toward a real-time payment system, to clarifying firms’ ability to use new data sources and algorithmic techniques, to understanding the need and risks associated with a shared digital identity system in the United States.

Another key area where regulators could interrogate, and potentially champion, new systems is by focusing on the business models and incentives of companies. A broad review could explore whether the incentives of a business are aligned with those of its customers, and if not, how that difference could impact outcomes, particularly for vulnerable populations.

These are big ideas that will take time and careful thought, but there is clearly a role for regulators—and government broadly—to play in supporting financial and digital infrastructure, and continually adapting supervision to innovation and change.

**Conclusion**

Each of these steps that regulators can take is interdependent on the others for maximum impact. We need to understand the changing technological and social issues we are facing; we need to define and measure what good outcomes look like based on that understanding; and we must take action based on an agreed-upon, evidence-based goal.

The Federal Reserve’s own evolution in creating an inclusive target for full employment in the economy is an example of this shifting approach, and the combination of these steps. The system is dependent on data to drive decision-making. For too long we have used averages to judge employment and access. Policymakers and market participants now widely acknowledge that citizens at the margins, not the average, are being left behind. In parallel, our definitions of success are changing as we consider shortfalls across groups, rather than an average deviation, and we can take proactive steps to address these new indicators.

The Federal Reserve Bank of San Francisco’s Fintech Team is grateful for the opportunity to explore these ideas. We serve the public by seeking to understand, define, and promote products and services that can create an inclusive and equitable financial system that supports the financial health and well-being of all Americans.

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