

Stars align for fintech, but regulators are wary of dangerous risks

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Commercials featuring NBA legend LeBron James, comedy icon Larry

David and movie star Matt Damon touting digital assets were prominent on this year's telecast of the Super Bowl played at California's SoFi Stadium, named for a financial technology service company.

But as the stars promote the digitalization of financial services, tossing phrases such as fintech, blockchain, artificial intelligence, [digital assets](#), Bitcoin and machine learning into popular culture, regulators and lawmakers are moving more slowly, worried about the downside of innovations that could transform daily life.

Among the fears are that the technology is too complicated for many consumers; poses security, privacy, consumer protection and discrimination risks; and consumes too much energy as politicians, companies and consumers increasingly worry about climate change. The decentralized character of some of the technology even raises questions about what entity can be regulated.

"The velocity and magnitude of marketplace change coming in the crypto space—cryptoassets, blockchains, central bank digital currencies, DeFi, Web3, DAOs, the metaverse—is unlike anything we've seen in our lifetimes," said Jo Ann Barefoot, CEO of the Alliance for Innovative Regulation.

A former deputy comptroller of the currency and staff member for the Senate Banking Committee, Barefoot said industry and regulators don't even agree on a catchall term for all the innovations, much less on how to regulate it.

"These innovations are also mold-breakers, in terms of who is supposed to regulate what at the federal, state and international level, and in terms of how to get leverage on them," she said.

Government reports, including from international organizations, hint at

the challenge.

"Economies rely on central authorities and trusted intermediaries to facilitate business transactions. Blockchain is a technology that could reduce the need for such entities," the Government Accountability Office said in a March report. It also said blockchain-based financial applications can facilitate illicit activity and may reduce consumer and investor protections compared to traditional finance.

The GAO found that blockchain is useful for some applications but limited or even problematic for others. Blockchain's resistance to tampering, for example, may make it suitable for applications with many participants who don't trust each other, but it may be too complex for uses where the participants trust each other, the GAO said.

The International Organization of Securities Commissions warned last month that decentralized finance, or DeFi, may remove intermediaries such as banks and brokers, institutions that are closely regulated. The result may be investors deprived of advice, lack of capital controls and compliance measures, it said.

"Absent these intermediaries—and without appropriate substitute mechanisms—the risk for investor and market harm may be exacerbated," IOSCO said. "Most of the new services which are emerging replicate more traditional financial services and activities, but with weaker regulation and increased risks for investors."

The IOSCO DeFi Working Group is led by the Securities and Exchange Commission and includes two other U.S. regulators, the Commodity Futures Trading Commission and the Financial Industry Regulatory Authority, which oversees brokers.

Melissa Koide, the CEO of FinRegLab, a Washington research group,

and Kelly Thompson Cochran, the group's deputy director, are trying to use their ties to the fintech industry and to Capitol Hill to draw attention to the technology's potential benefits, but also to raise red flags about over-reliance.

Koide said by email and in an interview that artificial intelligence and machine learning, combined with new types of data, present enormous potential to improve financial inclusion and equality but also enormous risk of deepening bias and exclusion.

"Careful, use-case specific research to understand how AI/ML with new data may affect consumers is essential to getting the rules of the road right in terms of how we regulate to protect people while making sure the benefits of the more complex analytics are trustworthy, inclusive, and beneficial," she said.

Koide said FinRegLab will release empirical research evaluating just those questions in the context of consumer credit this month at a symposium on [artificial intelligence](#) that the group is co-hosting with the Commerce Department, the National Institute of Standards and Technology, and the Stanford Institute for Human-Centered Artificial Intelligence.

She said the symposium will have representatives of government, industry, advocacy and academia address how these technologies, particularly in sectors like financial services and health care, relate to ensuring inclusive economic growth, supporting diversity and financial inclusion, and mitigating risks such as bias and unfairness.

Before establishing FinRegLab, Koide spent four-and-a-half years in President Barack Obama's administration as the Treasury Department's assistant secretary for consumer policy. She helped lead the creation of Treasury's "myRA" program, designed to help low- and middle-income

earners begin saving for retirement. The Trump administration shut down the program in 2017, saying it wasn't cost effective.

Utopia or dystopia?

Barefoot said the technology is offering a utopian versus dystopian moment.

"New financial technologies, broadly defined, are either going to make financial services a lot better or a lot worse, depending on how we regulate them," she said.

"Every innovation, from AI to encryption to blockchain, has potential to bring breakthroughs in fixing longstanding problems like financial access, inclusion and fairness," she said. "They also could make everything worse by introducing or exacerbating bias and eroding privacy."

Barefoot said Congress and regulators face challenges that are arguably even greater than those in the financial crisis because the issues are more novel.

"Regulators are facing incredible challenges in figuring out how best to regulate new technologies in finance. Speaking as a former bank regulator, I think the single best step they can take is to use these technologies, themselves. That will be the fastest way to understand them."

As regulators and the industry assess the financial strengths and weaknesses of the innovation, others are seeing it against a backdrop of climate change and global warming.

The GAO report noted evidence that blockchains use more energy than

traditional centralized databases because they must store copies of transactions across several or many computers.

A 2019 study in the energy journal *Joule* estimated that Bitcoin, the most popular cryptocurrency, had annual emissions between 22 million and 22.9 million metric tons of carbon dioxide, about as much as the nations of Jordan and Sri Lanka combined. A 2021 report by Galaxy Digital Holdings Ltd., an asset management company, estimated that Bitcoin networks consume around half the energy of the banking or gold industries.

Bitcoin's electricity use also results from its miners' need for high-powered computers to solve the complex mathematical equations that unlock new bitcoins, of which there is a finite amount. Unlocking Bitcoins gives the miners a big payout, which in turn provides the incentive to maintain the network.

The influx of Bitcoin miners to areas with access to cheap and plentiful energy has brought attention from Congress. Energy costs and demands of blockchain technology are of particular concern to lawmakers from states that have access to cheap power. Bitcoin miners have flooded to areas such as Washington state, New York and Montana because of the availability of low-cost hydroelectricity.

Washington state is experiencing "a tremendous increase in [electricity demand](#) attributed to mining of Bitcoin," Sen. Maria Cantwell, D-Wash., said at a Senate Energy and Natural Resources Committee hearing in August 2018. "To put this into context, a recent estimate found that a single bitcoin transaction uses as much electricity as an average household in the Netherlands uses in a month."

Montana Sen. Steve Daines, a Republican, said at the same hearing that his state has two Bitcoin mining facilities that collectively require about

80 megawatts of electricity, "sometimes surpassing even traditional mining projects." He expressed concern that as the demand from Bitcoin miners increases, it could pose a threat to energy supply and prices for Montana as a whole.

Brandon Dalling, a partner at the New York office of the international law firm King & Spalding, agreed that coin-mining is "energy intensive." He said the Pacific Northwest's cheap, low-cost hydro power has made it an attractive location for crypto-mining. This has proved popular with some segments of the local population who see the miners adding to the tax base.

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