Artificial Intelligence in Financial Services
Senate Committee on Banking, Housing, and Urban Affairs
September 20, 2023

Opening Statements

Chairman Brown (D-OH) noted that advances in technology have done plenty of good in financial services, but there are also risks like high frequency trading and fraud. He pointed to how social media fueled a bank run that caused bank failures in the spring and AI could cause bigger issues in our financial system. Brown said that banks, brokers and insurance companies are using AI to decide who can get a loan. He said that AI is a tool, and they need to set policies to ensure that these tools are used to benefit consumers. Brown said that they would discuss how to ensure that AI is not just another way for Wall Street to rig the system for their benefit. He said that as history has shown, the benefits of technology are often uber hyped while the risks do enormous harm to society. Brown said that companies stand to make money off the efficiencies of AI, but Wall Street's version of efficiency hurts workers. He pointed to the workers at the Jeep plant picketing and how the executives make around six times more than the average worker makes. Brown said that with AI, they need to ensure this technology is used to protect consumers rather than taking advantage of them. He said that the rules of the financial system should apply to these new technologies and if they are not covered by current rules, they need to pass new rules. Brown pointed to how banks use AI and machine learning (ML) to underwrite credit and make the system more efficient, but efficient for whom? He said that without guardrails or consumer protections, AI is just a new tool for Wall Street to swindle Americans. Brown said that some uses of AI have been employed for years, but GenAI makes it hard to hold people accountable when things go wrong. He said that it is an issue when developers cannot explain the models and when these models bake the worst ills and biases of the past into the cake. Brown noted that he wrote to the CFPB and banks about what they are doing about deep fakes and we have laws to deal with fraud, whether it is a person or machine. He said that with AI, we need to also worry about releasing untested AI into society and Congress should require rigorous testing of AI programs before they are used in the real world. Brown said that he and his colleagues agree that the Silicon Valley ethos is dangerous for the economy, and he wanted to ensure that we end up with AI technology that is well-tested, protects privacy, and preserves civil rights and consumer protections.

Sen. Rounds (R-SD) said that this is an incredibly important topic for both sides of the aisle, and he thanked Ranking Member Scott for letting him fill his shoes today. He said that AI has been around for years, but recent advances have shown us how capable the technology has become. Rounds said that AI is used to utilize data and improve the customer experience, pointing to fraud prevention as one of its uses. He noted that synthetic identity fraud is a huge issue for banks, but by using AI these banks can use AI to identify suspicious patterns. Rounds said that this allows for a proactive approach to prevent fraud before it happens. He said that ML/AI have also allowed for accurate forecasting and prediction. Rounds said that financial regulation is mostly technology neutral, and outcome based. He said that explainability and transparency with decision making, especially with regard to credit, is critical. Rounds said that AI is data dependent, and it is only as useful as the data in its models. He added that it is imperative that we invest in cyber infrastructure to protect the data in our financial system. Rounds said that what was illegal before AI is still illegal and the use of AI for illegal activities will lead to prosecution.

Rounds said that Congress needs to take a pro-innovative approach so the US can attract the best and brightest talent. He said that financial regulators should allow Congress to act and avoid overregulation of the new technology, pointing to the SEC's predictive data analytics proposal as an example. He said that there should be a right to privacy and transparency when it comes to AI and Congress has the opportunity to shape AI in a way that is important to us. Rounds said it is up to them to harness AI to the benefit of the financial system or fall behind.

Witness Testimony

Melissa Koide, ***Director, CEO, and Former Deputy Assistant Secretary for Consumer Policy FinRegLab, U.S. Department of the Treasury,*** said that the public interest in AI/ML has increased since the release of ChatGPT, but some applications of AI/ML in financial services date back decades. She noted that she would focus on the use of AI/ML for credit underwriting and how this can be beneficial. Koide said that models used must be safe, sound, and robust. She noted that her team researched models and found that ML can increase fairness and inclusion. Koide said that as for GenAI, it is attracting a lot of interest, but financial services providers are taking a cautious approach to this. She said that customer facing use cases are especially high risk as they can result in discriminatory outputs or expose sensitive information. Koide said that many providers are not confident they can provide transparency and explainability with regard to GenAI. She said that use cases of AI are still early days, but risk management frameworks are important, and stakeholders are aware of this. Koide said that we need frameworks to determine what is good with AI so financial actors move in the same direction. She added that there should be careful consideration of data protection practices. Koide said that Congress could also dedicate funds to further research in this area and ensure it is to the benefit of consumers and the broader financial system.

Daniel Gorfine, ***Founder and CEO, Adjunct Professor of Law, Former Chief Innovation Officer Gattaca Horizons, LLC, Georgetown University, CFTC,*** noted that AI applications in financial services are not new and have yielded tremendous benefits to consumers. He said that fear of the harms of AI should not block the development of AI in financial services, especially for smaller banks. Gorfine said AI models should be looked at by regulators based on how they improve the status quo. He said that we need to encourage innovation, but also monitor for novel risks. Gorfine said that with more clarity and consistency within existing risk management and activities specific guidance is important and regulators should encourage and foster the development of standards. He said that the federal data privacy framework also needs to be updated to ensure that consumers know how their data is being used. Gorfine said that they must also avoid regulation that hampers innovation. He said that they should also prioritize collaboration of the private sector with law enforcement so they can investigate fraud and scams. Gorfine closed by saying that the US must lead in this space.

Professor Michael Wellman, ***Computer Science & Engineering, University of Michigan,*** said that the promises and threats of AI pervade essentially every area of our economy and society, including quite distinctly the financial sector. Wellman then described at a high level how AI is employed in markets today, including through the implementation of algorithmic strategies. He noted that algorithmic market making improves efficiency and can be beneficial to those trading for investment, but 'latency arbitrage' can be an issue. Wellman then discussed three issues posed by the latest AI developments, including 1) market manipulation, 2) generative AI being able to query humans to elicit information that may not have been available otherwise, and 3) how concentrations of information access and ownership could convey extraordinary advantages to certain entities.

Member Questions

Sen. Smith (D-MN) turned to Wellman and noted that last fall that CFPB issued a report on concerns regarding automated tenant screening programs. She said that these screenings are supposed to look at how risky tenants are, but these determinations can be seriously flawed. She said that sometimes the models rely on flat out wrong data and are based on the same flaws and biases that do not predict risk. Smith asked how companies can assure landlords and tenants that their screening programs are accurate and neutral when we have this ‘black box’ problem. Wellman said that when AI makes mistakes, the issue is that it can be deployed at a large scale. He said that there is no general way to ensure the credibility of an AI developed model and they could end up being better, but it requires third party scrutiny and accountability. He said that there could be certification of the models on the front end or audibility on the back end. Smith asked if this is a place where standards for these tools could come into play to ensure bias is not creeping in. Wellman said yes, this is a valuable role for the government to play here. Smith noted outside third party audits and thought this was an interesting idea. She said that AI can learn without human intervention, but with GenAI the technology is sometimes erratic and can be problematic when it is used for lending. She asked Koide how financial regulators can oversee something as fast changing as AI. Koide said that this is a critical consideration and why they spent three years looking at what types of ML are being used for credit decision making by banks and nonbanks. She said that we are not seeing lenders moving into GenAI for credit underwriting, but instead they are using supervised ML algorithms that have human oversight. Koide said that fair lending and explainability are critical and impact what models lenders are using.

Sen. Rounds (R-SD) asked what steps we need to take to provide the AI workforce of tomorrow. Gorfine said that information on tech literacy needs to be available at the early stages for a child and you need to understand the language and what people are describing. He emphasized that people need to start early so they understand these issues. Gorfine said that the government and private sector also needs to understand the language being spoken around this technology. Rounds asked Koide if she agreed. Koide agreed but added that the challenges about which models get developed stems from who develops these models, and we need diversity there. Rounds said that this technology has been used for decades and its advancement is prompting discussion today. He said that we must avoid being overly broad in our regulation of AI. Rounds asked how we do not screw this up. Gorfine emphasized being principled when approaching this space and how there is already the right scaffolding around regulation and governance of AI in financial services, but risk still needs to be monitored and addressed with tailored regulation. Wellman said that we cannot prevent the advance of powerful AI, but how regulation evolves will shape economic development. He said that responding before the risk materializes is sometimes essential and then shapes the environment before the risks happen. Koide added that the data being used in the models is really important and we need to get consumer data privacy right and update our expectations for data privacy in financial services. She said that we need to make sure we do not leave out marginalized communities because they are not in the data. Rounds asked Gorfine if he had anything to add. Gorfine said that data is a place where we need a national framework and addressing risks around data use and privacy is appropriate. He said that it is a balance and the risk of going overboard with regulation stunts innovation.

Sen. Menendez (D-NJ) said that he worried that AI would compound the issue of fraud, and this is a space where we need to be preemptive. He asked Koide if AI could contribute to a rise in fraud. Koide said that she is interested in the use of AI to address fraud and there are ways to leverage analytics to catch fraudsters. Menendez said that consumers could become victims of increasingly sophisticated scams. He asked what financial institutions can do to mitigate the risk of AI scams targeting them and their customers. Gorfine said that law enforcement should take the lead in understanding the broad nature of these AI scams and this information can be circulated among regulators and the private sector to find ways to combat these issues. He added that AI can also be leveraged for good in this space when it comes to surveillance and monitoring. Wellman agreed and said that AI is a powerful fraud and scamming technology, but he thought Rounds made some points on how AI could be used to combat fraud. Menendez said that AI learns by studying large sets of data and any bias in the data can be incorporated into the decision making process. He asked how we can make sure AI does not expand existing disparities in the financial services sector. Wellman said that it can cut either way and we need better tools for interrogating our models to understand the basis they are making decisions on. He said that this is another area where the existing discrimination legal framework may not be adequate. Menendez asked how we should think about accountability and oversight when it comes to AI models. Koide said that what is important is that the data being used to build the models sufficiently represent full communities. She pointed to how the issue with mortgages is that many people cannot be evaluated with traditional methods and how looking at cash flow data can be helpful, so making sure the data is fully representative is an important place to start. Koide said that disparate impact and fair lending laws put legal obligations on looking out for disparities. She said that they have looked at how you can create models that create less disparities using AI and ML approaches, but this was not GenAI and was human supervised.

Sen. Kennedy (R-LA) asked, when a consumer interacts with AI, does the consumer have a right to know they are talking to a robot. Wellman said yes and disclosure can help reduce fraud. Kennedy asked if the others agreed. The other panelists agreed, but Gorfine thought it depended a little on the definition of AI. Kennedy asked Wellman if the consumer should know if the content is generated by AI and who owns the robot and generated content. Wellman said yes, and that is part of the more general principle of knowing what interest they are representing. Kennedy said that when a bank loans money, it has a profit motive, and it wants to be paid back and if they are not paid back, they go broke. He asked if it is possible to generate through AI an underwriting system that precisely determines who is unlikely to pay back a loan. Wellman said that ML models and AI can increase the accuracy of these decisions. Kennedy asked if it could do that right now. Wellman said that lending models see this right now with the factors they can consider. Kennedy asked if AI can improve upon the baseline. Wellman said it can improve on that and it can take in more information than is generally available. Kennedy said that if this system is more precise and better than what we have now, by definition it is going to have a disparate impact because someone will get a loan, and someone will not. Wellman said that's right. Kennedy asked if we all agree this a good system of prediction and it will have a disparate impact, is that the juncture where the government should step in and say that we do not like the result just because it did not include enough people from this area or education level. Wellman replied that in some circumstances if the reason has systematic negative impacts on society, yes. Kennedy said that this is the best system available though. Wellman said yes, but that doesn't make it the best, and it should include notions of fairness. Kenedy asked if they should lend to someone less likely to pay the loan. Wellman said that if the process is not fair, the process should not be allowed. Kennedy believed that Wellman wanted quotas. Wellman disagreed. Gorfine said that lenders have to look for less discriminatory alternatives when they use a model, but he thought AI had potential here because legacy scoring systems, like FICO, are known to correlate with protected class characteristics. Kennedy said that this is an improvement on FICO and asked if the government should be able to step in. Gorfine said that if it is more accurate and fairer, AI can be a big improvement.

Chairman Brown (D-OH) said that a number of them are concerned about how corporations are using data and there is little clarity on where the data that corporations use for AI comes from. He asked what actions Congress and regulators should take to protect people's right to privacy. Koide said that we do not have a comprehensive federal data privacy law, but understanding what type of data is being used, the purposes of it, the objectives for the data, and looking at who's not covered by GLBA is a good starting point. She noted that the CFPB is writing rules on 1033, but we have important questions about where this data goes and downstream protections after the data is shared by consumers. Koide said that a comprehensive look at data privacy laws and privacy in financial services would be beneficial. Brown said that small and regional banks may not be able to adopt AI as readily as big banks and asked how AI will affect competitiveness in the banking sector. Wellman said that he raised the issue of concentration of information being a new lever of power disparity and he thought this needed to be looked at and understood. Brown said that large language models (LLMs) often behave unpredictably and asked Wellman how we encourage responsible development of AI tools while consumers are protected from vulnerabilities. Wellman said that this boils down to accountability and ensuring that anyone with these tools use them responsibly. Brown then turned to Koide on how some complex models could result in less disparities, but these models are not always transparent, and asked how regulators should look at this tradeoff between fairness and transparency. Koide said they integrated ML algorithms and the extent to which post hoc techniques could generate explanations for outcomes, and some techniques with human oversight were able to look at what was most important around the models predictions, and they found that automated models led to less disparities. She said that to the extent that ML can help us find and understand risk, which is an important opportunity.

Sen. Britt (R-AL) said that AI has emerged in various sectors, including the defense space. She said that the role of AI in financial services impacts small businesses and consumers and many in the financial services industry have used this technology for years. She said that banks and insurance companies use it for underwriting and risk management, but there are calls for over regulation of the industry which already has risk management frameworks in place. Britt said that any governance framework needs to allow for innovation. She asked Gorfine how we can use the benefits of AI while acknowledging that the tech can be used by bad actors. Gorfine said AI has incredible potential in the RegTech space, especially for market surveillance and AML, which are far better at identifying anomalies and patterns. He noted that banks and exchanges can employ these tools to look for fraudulent and manipulative activities. Gorfine said that scams and deepfakes are also an issue and there needs to be good information sharing on this. Britt said that she is interested in how we can use AI to reach underserved communities. Koide said that making sure the data is representative of underserved communities is important. Gorfine said that AI can be used to get capital to underserved communities, and it can also help retail investors access sound investment advice. Wellman said that AI has a potentially democratizing dimension, but this access needs to be equitable.

Sen. Warner (D-VA) asked who's judgment we take on whether a model is good and agreed with Sen. Britt that we do not want to overdue regulation, but everyone in the tech space acknowledges that we need guardrails. Warner asked where AI could have the most devastating impact and pointed to faith in our elections and public trust in our markets. He said that we have not seen the catastrophic effects yet on public markets and said that the potential negative impacts are so bad that we need to introduce the idea of 'overwaiting.' He asked if the use of AI in public markets is a greater tool in terms of threats and if we need a new law to address this or if the current ones are sufficient. Wellman agreed that the fundamental issue here is trust and the issue with market manipulation is when it systemic and capital markets could cease to function. Warner asked if AI tools could be used at scale for this. Wellman thought AI could supercharge market manipulation and evade regulatory schemes around market manipulation. Gorfine said that trust in market integrity is crucial, but now that we know what these tools are capable of, we can ensure that participants are taking the right steps to address this. Koide agreed with the others. Warner said that if we all agree there is a bigger threat, he did not think we could just accept validation from the vendor, and it is a question if we need a law or certification here. Koide agreed that there needs to be sufficient oversight for this risk. She said that broader conversations about setting expectations and principles on non-financial actors using complex AI is an area for exploration.

Rep. Warren (D-MA) said that AI is getting a lot of attention in Washington, but laws already exist governing some aspects of AI. She pointed to how the CFPB put out a release on how existing laws still apply to new technologies. Warren said that a biased home appraisal can be a huge financial blow and in 2019, home lenders were more likely to deny loans to Black applicants and the CFPB put out a rule to ensure that these algorithms are not discriminatory. She turned to Koide and asked if the CFPB has legal authority to implement this rule. Koide agreed with Warren on the importance of homeownership, and she agreed that the CFPB had the authority to do this. Warren said that the lenders cannot discriminate and claim that AI made them do it. She added that the ECOA says that when lenders decide who gets credit, they cannot discriminate based on age, race, sex, religion etc. Warren asked Koide if the CFPB has identified other potential violations of consumer protection laws involving AI. Koide said that consumer protection laws are technology agnostic and the CFPB can take action against discriminatory behavior. Warren said that the CFPB is saying that Wells Fargo will be held accountable if they use AI to discriminate and she applauded the CFPB for their work on this.

Sen. Van Hollen (D-MD) noted that Maryland is the home to NIST, which is the test bed for certain AI systems, and they are discussing high level principles of trust and safety when it comes to AI. He turned to Wellman and raised the issue of using AI to intentionally manipulate markets and how AI can manipulate financial benchmarks to maximize for profit. He asked Wellman to address this. Wellman said that by using reinforcement learning, the system tries a lot of different actions to see what works and they fall upon manipulative actions which are focused on making profits. Wellman said that even if the developer of AI did not want to manipulate, it could do this. He then explained benchmark manipulation through AI. Van Hollen said that a lot of our anti-fraud and manipulation statutes are built on intent and if a system maximizes for profit, there is a question whether the developer is subject to liability. Wellman said it is unclear what the law would say about this. Van Hollen turned to Koide and asked if she had anything to add and whether the laws need to be updated. Koide said that they are more focused on the retail financial services/banking side. Gorfine said that model risk techniques should identify risk and proper model building techniques should have governance to ensure that this manipulation does not occur. He added that market surveillance tools at the SEC and CFTC need to be updated to monitor for this. Van Hollen said that this is why he brought up NIST, so we have a framework and a way to look at any issues with AI.

Chair Brown (D-OH) said that QFRs are due on September 27 and adjourned the hearing.