Subcommittee on Housing, Transportation, and Community Development Hearing: "Artificial Intelligence and Housing: Exploring Promise and Peril."

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Good morning. Thank you for inviting me to address the impact of Artificial intelligence, i.e. AI, which is being employed increasingly throughout the housing and mortgage industry. For these purposes, AI refers to the use of data and algorithms in place of human decisions. This definition includes machine learning models, which are programmed to imitate the way humans learn, iteratively correcting themselves to improve their accuracy.

Compared to traditional models, AI relies on a wider range of data inputs and more complex combinations thereof. Although complex multivariate algorithms have been in place in the mortgage market for years, these models have the potential to incorporate non-traditional data sources. Due to their complexity, it is difficult, but not impossible, for anyone other than AI developers to scrutinize and monitor their inputs.

AI models are already widely applied in the mortgage market. AI digital marketing models target prospective homebuyers and communications with customers are intermediated by AI chatbots. Credit scoring companies and mortgage underwriting systems use AI to evaluate credit risk. AI models are widely used for property valuation, loan servicing, and loss mitigation. AI regulation warrants urgent attention because evidence from other domains and my research with the Housing Finance Policy Center at the Urban Institute suggests that while these models can enhance efficiency, they can have unintended impacts on fairness and equity.[1]

AI models are not subject to human errors, and they enable efficient, accurate, and consistent decisions. Depending on how they are developed, their enhanced capabilities could expand access to homeownership for households currently underrepresented in the mortgage market. For example, AI can produce faster and less subjective estimates than human property appraisals and can devise credit scores for those who lack a traditional credit history.

However, because these models rely on historical data, there is the potential for these models to systematize and amplify discrimination and inequality.[2] For example, due to the legacy of redlining and segregation and their effects on present-day neighborhood conditions and home values, why should we expect AI models to produce estimates that are both accurate and fair? And absent

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[1] Michael Neal, Linna Zhu, Caitlin Young, Vanessa G. Perry, Matthew Pruitt (2023), "Harnessing Artificial Intelligence for Equity in Mortgage Finance," Urban Institute, November 6, https://www.urban.org/research/publication/harnessing-artificial-intelligence-equity-mortgage-finance

[2] Michael Neal, Linna Zhu, Vanessa G. Perry (2024), "To Err Is Automated: Have Technological Advances in the Mortgage Market Increased Opportunities for Black Homeownership?" *Journal of the Center for Policy Analysis and Research*, forthcoming, https://papers.ssrn.com/abstract=4347212

guardrails, how would we know if AI models were to incorporate data elements, such as GPS location, that serve as a proxy for race, gender, or ability?

To address concerns about AI's impact on access to the housing finance system for underrepresented or marginalized communities, my co-authors and I have proposed five factors summarizing the societal, ethical, legal, and practical issues that should be considered in the development and implementation of AI[3]. They form a memorable acronym, **S.C.A.L.E.**, which stands for:

> **Societal values.** Algorithms tell us what factors the developer thinks are important, in what order, and to what degree. AI models should consider the socio-economic and historical context (e.g., past discrimination) and should align with prevailing legal and ethical paradigms, e.g., disparate impact law, individual freedom, and racial equity.

> **Contextual integrity.** In addition to its accuracy, model inputs should be relevant to the mortgage or housing domain, and may differ substantively from those used for other or less consequential contexts.

> **Accuracy.** Models should be reliable, error-free, unbiased, and representative of all demographic and economic groups across varying macroeconomic conditions.

> **Legality.** The model and its inputs, if used for housing or housing finance decisions, should not incorporate characteristics protected by fair lending laws or generate unjustified disparate impacts based on these characteristics.

> **Expanded opportunity.** AI models should significantly increase access to credit in addition to offering greater cost efficiency or risk assessment benefits. *This criterion has perhaps the most promising impact on the economy and communities.*

In terms of policy directions, the S.C.A.L.E. framework could inform new or expanded regulations, such as guidance for the use of certain types of data—such as an individual's social media profile—for certain purposes, such as mortgage lending decisions.

While the S.C.A.L.E. criteria imply that model inputs and algorithms, due to the complexity of AI models, regulators cannot rely on traditional approaches to documentation and testing. Furthermore, concerns about potential harms related to AI are domain-specific, suggesting that regulation and enforcement efforts must be targeted specifically to housing and mortgage applications.

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[3] Perry, V., Kirsten Martin and Ann Schnare (2023), "Algorithms for All: Can AI in the Mortgage Market Expand Access to Homeownership?", *AI*, 4(4), 888-903, https://doi.org/10.3390/ai4040045

If designed to do so, AI models can increase access to homeownership and eradicate the effects of systemic discrimination while increasing accuracy and efficiency in the mortgage value chain. We need laws on the Federal level that turn the 'S.C.A.L.E.' toward imposing these standards at every stage of the AI lifecycle.