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Prosperity, Fairness, and AI Work Hand-in-Hand

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Introduction

I am Mike de Vere, CEO of Zest AI, a financial technology (fintech) company that has pioneered and continuously perfected AI lending technology since 2009 with a mission to broaden access to equitable lending with smart, inclusive, and efficient AI. Zest AI is a proven partner for lenders of every size, with over 500 active models in the market, helping financial institutions decrease risk, boost equity throughout the lending process, and build durable businesses.

Throughout this document, I will refer to Artificial Intelligence (AI) and Machine Learning (ML) both fully and as abbreviations. I also would like to clarify that "Zest AI's technology," "AI-underwriting," "AI-enhanced underwriting," and other similar terminology in relation to our business only refer to our technology's capabilities and business outcomes.

Why Zest AI Exists

The credit system plays a large part in the growing racial wealth gap that costs our economy trillions of dollars in GDP and disadvantages many across the country from growing generational wealth and building better lives for their families. Some quick facts:

1. Since 2000, the U.S. economy could have grown by $16 trillion had racial discrimination been eradicated (Citigroup, 2020).
2. Global GDP could jump $7 trillion by closing the pay gap (Moody's Analytics, 2023).
3. 1 in 5 Black individuals and 1 in 9 Latinx individuals have FICO scores below 620, compared to 1 in 19 White people (Brookings, 2020).
4. Despite having less debt and higher education levels, women have roughly the same credit scores as men (Experian, 2020).
    a. 705 for men and 704 for women.
    b. Men hold over 20% more debt than women.

We need inclusive credit scoring now more than ever. Enough is enough. Creditworthy borrowers need equitable access to mainstream credit NOW to weather economic and personal shifts, capitalize and fund new businesses, compensate for lack of liquidity, and grow the opportunities available to the next generation. Financial institutions need equitable access to credit to continue to populate the data inputs that better represent the shifting diversity in the U.S. so they can make fair and safe credit risk decisions as the country grows more diverse (Brookings, 2020).

The ability to broaden access to equitable credit exists today in Zest AI's technology and service. AI is a tool that enables lenders of every shape and size to grow both in fairness and prosperity because the fairer we are in our lending decisions, the more the people in our country can grow, and the better our economy thrives.

Zest AI's Technology

At Zest AI, we are developing safe AI for underwriting and a thriving lending ecosystem.

Artificial intelligence is an umbrella term that includes a broad swath of categories underneath it, from simple automation of repetitive tasks to complex algorithms that can learn in ways that mimic human learning. These two specific examples aren't particularly helpful for lending decisions nor fully compliant with lending regulations. The technology underpinning Zest AI's underwriting technology is not simple automation, nor does it learn like a brain. We base our underwriting models on a complex algorithm to strategically predict risk outcomes based on credit data provided by a borrower application and other sources.

Policymakers with compliance concerns about the challenges inherent in monitoring an AI underwriting model if the model is learning from itself and changing along the way should be aware that most AI underwriting models do not learn and change while they are in use — at least not the compliant ones. Our models are explainable, locked, and documented in order to meet the model governance, safety and soundness, and consumer protection requirements of our financial institution clients (Zest AI, 2023). More specifically, what we mean by 'safe' is that we train our AI models using machine learning, supervise our models during training, and lock our models during production so they cannot learn independently while in operation. This is unlike generative AI examples, like ChatGPT, which are unlocked and learn new ways to process information while in use. Zest AI's technology has been created, trained, and tested by diverse teams of engineers, data scientists, and legal professionals, so when lenders incorporate our AI into their lending insights, they maintain the competency of human-decisioning and gain the consistency of mathematical algorithms. The models are operated in production using accurate, compliance-tested data and are transparent to the staff and management using them, with readily available documentation for ease of reference.

Since 2019, Zest AI has obtained over 50 patents approved or pending for developing artificial intelligence models and fairness technology for underwriting that support and even enhance compliance with applicable financial services laws. The science behind Zest AI technology's approach to optimizing accuracy and fairness has been thoroughly analyzed in recent research, such as that by the prominent think tank FinRegLab (FinRegLab, 2023) and academics from the

Harvard Business School (HBS, 2023), and has been found to be highly predictive and resilient. In partnership with Federal Home Loan Bank of San Francisco, Urban Institute also included Zest AI in a research project looking at how using AI in mortgage finance can help advance racial equity in homeownership (FHL Bank SF, 2023).

Zest AI is helping lenders better serve thin-file borrowers through more accurate risk insights from our technology. According to CFPB researchers, over 45 million American consumers — 20% — are either not visible at all using legacy scoring methods or are unscorable due to 'insufficient' or 'stale' information (CFPB, 2016). Zest AI can pull better insights on information from credit history data for previously excluded or unscorable consumers and can also selectively incorporate safe inputs from alternative data sources. Currently, our technology supports originations to over 20% of credit union members across Kentucky. Our clients are making more loans and extending more credit card approvals without increasing their credit risk.

Because our AI models rely on hundreds of data variables instead of dozens, they are more stable and much less vulnerable to losing predictive power when economic conditions change. Zest AI's technology — had it been deployed — would have been 34% more accurate at predicting consumer loan defaults during the Great Recession.

Zest AI's model risk insights are also twice as accurate as legacy scoring methods across the middle tier. More accuracy increases lending decision consistency. By sending fewer middle-tier applicants to manual review due to increased risk prediction accuracy with AI-enhanced underwriting, they are confidently approving more creditworthy borrowers that might have otherwise been missed using legacy scoring methods. Lending consistently with more confidence is the key benefit of using safe AI technology for underwriting.

Data: Responsible Use Prevents Bias and Abuse

The percentage of Americans who lack sufficient credit history to get a traditional credit score is 20% (Experian, 2022). That's 49 million American adults. Don't you think we can do better?

Our current credit system has a data problem. Why is it important to have accurate, representative data when scoring borrowers? This country is already incredibly diverse and will continue growing more diverse over the years. Using non-representative data to back lending decisions means that these consumers get excluded. We need solutions that can be tailored. For example, do Californians have the same lending needs as Iowans? Do lenders in Texas serve the same populations as those in Maine? In the end, a one-size-fits-all approach fails when it comes to lending accurately and fairly. Having representative data means lenders can serve a more complex population. Tailoring data allows for better, more inclusive decisions. Using AI and alternative data can help fill in gaps and provide accurate decisions for thin-file borrowers. However, lenders and the fintechs they partner with MUST be diligent in ensuring all data used does not introduce bias.

Using data that reflects bias perpetuates further bias in lending decisions. We talk and think extensively about data at Zest AI, especially in the legal and compliance team. But more importantly, we do data right at Zest AI. We believe that ethically sourced, responsibly used data is key to improving lending decisions and the banking ecosystem as a whole. Ensuring the data a financial institution uses is representative of the population it's serving and comprehensive enough to build models accurately and fairly helps our customers — banks and credit unions — make better lending decisions.

There is much talk about the promise of core banking data or cash flow data, which we find to be an exciting development. The power of core banking data adds to the accuracy of decisions that can be made through AI. Cashflow data has also been shown to be a powerful indicator of risk. The ability to see that a loan applicant has high savings or pays their bills on time is one way that lenders can expand access to credit and look beyond the data found in a traditional credit score (CFPB, 2023). Having access to these sources and being able to incorporate variables from these sources of data will decrease noise in an AI model. And while these findings are great signals of progress for the industry, the need for caution and testing of alternative data is incredibly important.

There are compliance "watch-outs" that deployers need to be aware of when considering using alternative data in their AI model. Some AI vendors have been found to use data wherein over half of their variables were not compliant, including criminal records or social media usage. In general, it is our belief that obtaining and using more data than necessary harms consumers by adding more signals that could introduce bias. Pulling additional data can also cost a financial institution a lot of money and yield only a small lift in accuracy. Financial institutions should keep their eye on issues like AI vendors using unnecessary data, but AI vendors should also be held responsible for maintaining compliance standards for the industry they're serving.

Knowing what data is compliant requires very specific legal knowledge. Even more technical knowledge is needed to incorporate the relevant legal rules into the systems used to build and operate the models. When Zest AI uses data to build the AI models that help lenders make inclusive lending decisions, we are thoughtful and purposeful, which should be the standard across AI underwriting technology offerings.

Fairness is a Specific Path, Not a General Direction

The lack of access to consistent, fair, and timely credit is one of the U.S.'s most under-discussed issues. Inequitable credit access shapes the core foundation of the nation into one that benefits the privileged to the detriment of the marginalized. But, the technology to solve bias in the financial system exists and works today (Zest AI, 2023).

Public sentiment about legacy scores tells us that the current system is failing a majority of people. Of Black Americans, 20% have a credit score under 620, despite making up only a little over 14% of the U.S. population. Only 5% of White Americans, who make up over 60% of the U.S. population, have a credit score under 620. Only one in four Americans believe their credit score accurately reflects their financial position (FormFree, 2023). The constrained lending results that financial institutions see from legacy scoring tell us how our current credit system is failing many of us. Incorporating AI into lending can help close these gaps.

AI can beat bias embedded in data. AI provides a more comprehensive assessment of the data inputs before they are used in the model. Tradeline data can have embedded bias when it reflects performance that may have been negatively impacted by predatory credit terms, lack of access, and sporadic or practically non-existent credit history. However, when tradeline data is used responsibly and tested for fairness, both as an individual data point and in correlation with other data points, AI technology can increase approvals for those low-risk borrowers legacy scores leave out. The testing is straightforward but must be rigorous when there are thousands of variables to test.

Lending — with or without AI — has clear anti-discrimination protections in place. What's less clear is how we measure progress in improving how we provide more mainstream credit to more people. Distinguishing between what is "fair" and what is "fair enough" is an important question to answer for several reasons. Some lenders and AI vendors, not Zest AI, use the idea of "fair enough" to avoid making fairer decisions when they are able to because what they are doing appears to be good enough to conform with the law. But in actuality, the status quo "fair enough" is not the path towards fairness. It's those who are willing and able to do something different, something more advanced to make more good loans to more creditworthy borrowers who are in pursuit of true fair lending.

There are extant principles that we can apply when choosing a fairer model. Lenders already make trade-offs between different modeling options when it comes to credit policy and other areas. Experts, such as the attorneys at Relman Colfax PLLC, have done good work in this area and have articulated fair lending principles for lenders to follow.

Also, getting to fairer, more accurate underwriting models is not as difficult as many believe it to be. AI technology has, in fact, created readily accessible means to accomplish the robust LDA search regulators expect. For all practical purposes, ML is the best way to effectively search for less discriminatory alternative models. Previous approaches that removed biased variables for greater fairness negatively affected that model's accuracy. Lenders were stuck with manual and less sophisticated algorithmic approaches to testing for and reducing the impact of discriminatory data variables on their models. Now, they're able to use safe AI to test and refine their models for fairness. Of course, financial institutions have to make wise lending decisions. We can't put capital at risk at banks and credit unions. With AI, we do not need to do that to be fair and ensure customers have access to safe, affordable loans to improve their lives.

AI can close the approvals gap. AI is a tool that can benefit Americans by leveling the credit-scoring playing field. Using Zest AI's technology, lenders can confidently score 90% of the U.S. population and capture 90% of those previously unscorable consumers, including customers ineligible for social security numbers. These approval increases for credit cards, personal loans, and auto loans are the launching pad for Zest AI's venture into home finance approvals, bringing more access to better lending decisions to a wider consumer base.

Zest AI's technology includes both more predictive outcomes and greater racial equity. AI is closing the approval gap between the included and traditionally excluded. With AI, we can adjust the variables in hundreds of permutations and generate model options quickly. Lenders can readily assess how little predictive accuracy they may need to trade to make more loans to more borrowers from all backgrounds.

Responsible AI Tools Can Enhance Compliance for Lenders

Responsibly developed and deployed AI can make it easier to meet regulatory requirements. Purposeful assessment of permissible data inputs and documentation of that assessment means a bank or credit union can see and understand the factors involved in the prediction and make adjustments for fair lending purposes. The representative, compliant, structured data is then combined with advanced math in the form of algorithms. The algorithms are supervised while they learn from the structured data. This cannot be done with biases embedded in the human brain.

Let's focus the conversation on the specific type of technology Zest AI recommends for compliant credit underwriting. These AI models are trained under supervision on structured, traditional tradeline data from a national credit bureau and safe alternative sources, then tested, and then locked when put into production so they do not continuously learn while in operation. With this combination of critical elements, Zest AI's technology is safe for underwriting and beats bias to increase inclusive lending.

Any technology used to make consequential decisions in a regulated sector must abide by applicable regulations. For example, if air traffic controllers start using AI, they still need to follow the existing framework that governs how closely planes can take off and land together on the same runway. Sound data inputs are critical to fair and accurate models. Robust and representative datasets for training and validation are the foundation for generating stable AI models that can generate reliable inclusive decisioning. Individual data inputs must be reviewed, and those that are potential proxies for protected class characteristics that are not supposed to be considered should be removed — AI can do this analysis efficiently and transparently.

We have yet to eliminate bias from human decisioning that isn't supported by AI. Zest AI believes that our purpose-built, human-centered technology can help banks and credit unions make better, more consistent, and fairer decisions. Though our advanced technological tools for credit underwriting are powered by smarter data and better math than older or competing tools, our tools are developed and deployed in compliance with the applicable laws governing the standard tools and third-party providers that banks and credit unions rely on to serve their customers. AI models that provide visibility into the data they use and options to fine-tune the data to optimize equitable lending can actually make it easier to comply, easier to track compliance, and easier to move past mere fair lending compliance to demonstrably fairer lending. To improve compliance with the existing federal regime that already mandates no discrimination, strong model governance, model testing, transparency, and consumer notices, we need more clarity that transparent tech tools that enhance compliance are allowed.

Final Thoughts

AI policy debates can at times be imprecise, and it is our goal at Zest AI to provide technical expertise to help focus the conversation on the benefits and risks of some of the AI technology in use right now in financial institutions across the country.

The way to increase access to equitable lending is together. While regulators can ask more of lenders and vendors when it comes to promoting transparency, fairness, and compliance, we would like to ask a few things of our regulators and decision makers. We ask that you invest in ideas and visions that are built with the purpose of bringing about a collective good. We ask that our leaders promote rules that both protect people and encourage innovation. We ask that compliance and fairness become more than a box to check and that governance uplifts those pursuing fairness as an outcome, not just as a by-product.

There's a future where everyone in the United States has access to the American

Dream. Prosperity and fairness are not at odds with one another. We at Zest AI envision a world where fairness emboldens and strengthens prosperity. We simply need the courage to take the first step.

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