Resolving a Regulatory Paradox

— by THOMAS J. HEALY AND TODD J. FISHER —

Sophisticated data analytics is a better way to ensure fair lending in underserved communities. It beats blanket government mandates hands down.

"The only sustainable competitive advantage is an organization's ability to learn faster than the competition." —PETER SENGE

In the wake of the financial crisis of 2007, a regulatory contradiction emerged for banks compelled to adhere to both the Community Reinvestment Act of 1977 (CRA) and the then, newly passed, 2010 Dodd–Frank Wall Street Reform and Consumer Protection Act. ¶ Under the CRA, banks are charged with understanding and serving diverse communities that span the socioeconomic spectrum, while at the same time they are constrained by Dodd-Frank's risk-phobic, inflexible underwriting guidelines. ¶ The banking industry's mortgage lending model is challenged—some might say it's broken. This article highlights the seemingly insurmountable regulatory paradox created over the past 37 years and then focuses on the role data analytics can play to overcome—or at least minimize—the contradiction. ¶ There is hope. In this era of

small, medium and big data, state-of-the-art data analytics aided by cost-effective cloud-computing resources can provide lenders with deeper insight into their business. More importantly, data analytics can provide insight into the individual consumers that comprise the communities that make up a complicated socioeconomic continuum.

While an apparent regulatory contradiction may seem to throw cold water on creativity and profitability, banks can improve their mortgage business and realize a competitive advantage by finding innovation through greater insight—using advanced analytics to learn faster than the competition.

The pendulum swings

The CRA was designed primarily to increase homeownership by improving access to credit, in the form of mortgages, to individuals living in low- and moderate-income communities and to low- and moderate-income borrowers regardless of where they live.

An overarching objective was to increase homeownership

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on a national level.

The thought was that this would improve the economy by narrowing the wealth gap. The assumption was that homeownership is a time-tested means by which individuals can build wealth and stabilize communities over time, and should be available in a fair and reasonable manner.

Banks' lending policies must avoid creating a disparate impact to and between communities. Traditionally underserved communities with little access to credit required help. That help came in the form of the Community Reinvestment Act.

Thirty years later, following a historic meltdown of the financial industry, Dodd-Frank was designed (some would argue as a punitive measure) to tighten the reins on lending and mitigate the risk of another financial crisis.

If lenders and institutional investors dealing in mortgage-backed securities (MBS) and whole loans were going to be reckless, the argument followed, then the government would actively prevent such recklessness through legislation.

Unintended consequences: A regulatory paradox emerges

With the CRA and Dodd-Frank regulatory requirements in mind, the challenge can be summed up as follows: Tighten lending guidelines in accordance with prescribed rules while avoiding disparate impact to communities, and do so in an economy divided by the largest wealth gap in history.

In 1976, 1 percent of the population took home 9 percent of

all income. As of 2013, 1 percent of the population takes home 24 percent of all of the income and possesses 40 percent of all wealth.

In 1977 CRA was implemented to encourage lending to individuals in communities that had previously experienced little opportunity for homeownership, largely because they were considered excessively risky and thus represented less desirable investments. (The term "redlined" originated as a result of the practice by some in the lending industry to draw a red line on a map around certain communities deemed risky.)

Dodd-Frank, on the other hand, commands risk mitigation through prescribed lending guidelines. To gain safe harbor legal protection under the law, the safest lending strategy is to only originate Qualified Mortgages (QMs). The QM rule spells out the characteristics of loans that will meet this safe lending standard. It is anticipated that the effect of the QM rule will be to discourage lending to individuals considered higher-risk borrowers.

One has to wonder, then: Are the CRA and QM regulatory requirements mutually exclusive? And as such, do they represent an insurmountable paradox for lenders trying to comply with them?

Where there is challenge, there is opportunity

"It still holds true that man is most uniquely human when he turns obstacles into opportunities." —Eric Hoffer

The Dodd-Frank QM requirements leave little to the imagination and essentially create a nationalized wall of protection around the mortgage industry.

In a QM environment, lenders have little room to maneuver, innovate and grow business without assuming considerable risk. Dodd-Frank's objective is to limit mortgage loans to those with high credit scores and moderate loan-to-value ratios (LTVs) and to provide mortgage products that are simple to understand and do not contain exotic features such as negative amortization, payment options or alternative documentation.

While non-QM loans are allowed, additional capital may be required to ensure the safety and soundness of the financial institutions making such loans. Additional capital is also required to defend against potential legal proceedings brought against the lender for making unsafe loans without taking into account the borrower's ability to repay.

Also, other Dodd-Frank regulations require that the originator of the loan must hold capital against the loan even if it is sold into the secondary market. This is intended to ensure that lenders continue to have skin in the game. Focusing on such a narrow set of data (debt-to-income ratios and LTVs) and structuring lending guidelines accordingly leaves little flexibility.

In the shadow of the rigid Dodd-Frank nationalized wall of protection, let's consider the CRA legislation.

The CRA was designed to expand lending and by extension homeownership. But even when banks maintain socially acceptable standards for making loans, if, under assessment, the loans made result in statistical differences in the amount and type of credit offered to low- and moderate-income individuals, such banks are open to civil liability for creating disparate

impact. In essence, banks are penalized for being unfair.

In an era of widening income and wealth disparity, and a loan environment bounded by rigid guidelines based on income and wealth, how can disparate impact between communities be avoided, and how can banks grow socially responsible investing fairly across all demographics—and do so profitably?

The constraints placed on lenders by Dodd-Frank might make that challenge appear insurmountable. It's not. The answers to those questions rest with our ability to gain deeper insight into the real complexities of mortgage lending.

The opportunity rests in the data

"For the first time in human history, we have the science and computational power to help . . . quickly sort through vast troves of [data] to determine what actions are best. . . . It would be virtually unethical not to put these tremendous resources to work to improve care and lower costs." —TOBY COSGROVE, *chief executive officer and president, Cleveland Clinic*

Cosgrove is of course speaking in the context of using new methods of sophisticated analytics to improve the physical health of patients while improving the business of health care. We contend such thinking is completely transferrable to mortgage banking.

Complex decision support, and the financial wellness of consumers and the mortgage banking industry, can certainly benefit from the cost-effective type of sophisticated data analysis to which Cosgrove refers. Such capabilities are commonplace in many industries. And they offer a completely new way in which lenders can assess the financial viability of populations—literally person-by-person and circumstance-by-circumstance, rendering a cost-effective, risk-adjusted means by which to profitably and safely deliver true fairness in lending.

Everyone has heard the phrase "big data." The reality is that big data means different things to different people. What is consistent across all industries, however, is that in an era of big data principles and technologies, sophisticated programs can process enormous amounts of previously inaccessible data—in near real time—to democratize consumerism.

Consumers are no longer merely faceless placeholders in the context of aggregated communities and demographics. They are not members of a group bounded by some red circle on a map. They are individuals with personal histories, circumstances and context. Banks leveraging such capabilities achieve greater insight into why people choose what they choose and do what they do.

Moreover, recent big-data initiatives offer banks an opportunity to not only benefit from internal data but also gain access to valuable and pertinent data not currently part of any calculus.

Because we don't know what we don't know, new capabilities to access and process traditional and new structured and unstructured data in near real time offers banks the opportunity to view the mortgage industry and business model from new perspectives. Doing so, even in such a regulated, restrictive environment, leads to innovation through deeper insight.

Many external data sources can be infused into existing data to glean the signal from the noise. These may include:

- census data
- motor vehicle data
- insurance data
- general consumer data
- social media data
- anonymized health and wellness data
- origination data
- historical servicing data
- housing-price indexes
- economic data from a variety of sources
- bank call reports
- trade association research

And the list goes on and on.

To place this in perspective, it is worth noting that current estimates suggest 2.5 quintillion (10^{18}) bytes of data are created globally every day. In fact, IBM estimates that 90 percent of all data in the world was created in the last two years.

Why is this important? We live in a complex world that is evolving very rapidly and only remotely understandable

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through the symbiotic relationship of sophisticated, interdisciplinary data analysis and human intuition. To achieve success, mortgage banks must embrace this reality.

Behavior is complicated and correlation is deceptive

"[P]sychological theories of intuitive thinking cannot match the elegance and precision of formal normative models of belief and choice, but this is just another way of saying that rational models are psychologically unrealistic." —DANIEL KAHNEMAN, an Israeli-American psychologist who shared the 2002 Nobel Prize in Economic Sciences with Vernon L. Smith, and who is notable for his work on the psychology of judgment and decision making, behavioral economics and hedonic psychology

Behavioral economics, psychology, anthropology and neuroscience have clearly illustrated human behavior is far more complex than the "cold, hard mathematical logic" *(The Rational Animal: How Evolution Made Us Smarter Than We Think,* by Douglas T. Kenrick and Vladas Griskevicius, 2013) that pure market economics suggest.

This complexity extends well beyond the handful of data elements traditionally used to base assumptions on (e.g., QM's risk and LTV/FICO). To understand consumers, new data must be included to improve decisions and better balance the precarious tension of risk, reward and fairness.

Correlations are deceptive in that they can lead to conclusions

of causation that simply do not exist. For instance, a classical example used in many statistics courses is the high correlation found between the number of storks in Sweden and the birth rate. There is a strong positive correlation. It is rather intuitively obvious, however, that a change in the number of storks in Sweden does not cause a corresponding change in birth rate.

A weakness of pure correlation analysis is that some highly correlated factors (storks/births) are associative variables. That is, they tend to move in tandem, either by chance or due to some other underlying reason, but one does not cause the other.

We are searching for causative correlations and must therefore consider the data that sits under the water as well as the data that has traditionally appeared as merely the tip of the iceberg.

Decisions based on the perception of what an individual

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will do and whether over an extended period of time that person will act consistently and reliably (i.e., repay his or her loan) is complex, because lenders must rely on individual consumer behavior in myriad contexts over an extended period of time.

Dodd-Frank has determined—in fact legislated—that good, safe business decisions can and should be distilled down into an incredibly small and simplistic set of superficial data elements essentially representative of a thin slice of an individual loan application at a single point in time.

This simplistic "snapshot in time" analysis (if it can be called analysis) utterly fails to address complex issues that impact individual capacity and likelihood to successfully take on and manage credit in the form of a mortgage.

Issues such as fairness, behavior change over time, significant life events (good and bad) and their psychological, behavioral and biological impact over time are just a few examples of the incredibly complex set of data that form the latticework underlying individual decisions and actions over time.

Current information technology (IT) and the rapid drive to big data principles and technologies now support sophisticated near real-time analysis of such elements and should be used to meet the challenge to better understand and forecast what an individual will do—i.e., whether a borrower will prove to be a reliable and safe investment over time.

Imprecise assessment of communities can be replaced with far more sensitive, accurate and contextually relevant assessment of individuals that comprise communities. With a deep understanding of individuals rather than stereotypes based on limited data, lenders can mass-customize their ap-

proach to underwriting and support activities for individuals. There is no fairer method of extending credit that adequately balances risk and reward.

Sophisticated analytics leveraging data previously inaccessible to lenders, and avoiding overgeneralization associated with community-wide thinking represents a true competitive advantage.

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Consumer behavior and, by extension, mortgage business dynamics (e.g., profitability, fairness in lending, transparency, risk profile) can be accurately predicted by other correlative data such as, method of payment (coupon book versus automated clearing house [ACH]), the existence of second mortgages and other debt, payment history, current principal balance, marital status, local migration patterns, unemployment rates, health and wellness, daily consumption habits and myriad other social, economic and demographic factors.

What's possible now?

It is on such a personal level that financial viability and risk should be assessed and acted upon. Only then can creativity and entrepreneurism be reintroduced inside the nationalized walls of protection currently surrounding the lending process.

Moreover, with such capabilities now available, we believe an ethical mandate exists to ensure fairness is actually determined on such a personal level. To suggest anything less is to apply lazy thinking and simple stereotyping. In a world that has the capacity to cost-effectively know better, this results in bad business—not to mention unfair bias and inappropriately punitive decisions and impacts.

While Dodd-Frank may, in the short run, be an immovable object, a more thorough understanding of individuals that comprise communities enables lenders to:

■ Approve more CRA loans without sacrificing safety and soundness. While they may not in fact be QMs, the utilization of comprehensive data analytics will give the lender the empirical data needed to identify low- and moderate-income applicants who have the ability to repay under the terms of the loan agreement—another key tenet of Dodd-Frank.

■ Defend denial of credit with comprehensive evidence that the lender has made every effort through advanced, deep and fair analysis of individual applicants and can show that analysis in the spirit of transparency, thereby mitigating claims of bias.

Advanced analytics helps lenders more easily find qualified candidates, *and* advanced analytics provides a much-improved level of transparency and proof of fairness in lending. Advanced analytics can resolve—or at least mitigate—regulatory paradox. **MB**

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