Banking on Bad Credit: New Research on the Subprime Home Mortgage Market

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Since the early 1990s, the rapid growth of the subprime home mortgage market has arguably been the most important development in alternative financial services and undoubtedly the most controversial. Thus, it comes as no surprise that three of the papers presented on the alternative financial services panel¹ of *Promises and Pitfalls* report new research on the subprime home loan market and related issues.

The subprime home loan market, designed for borrowers with weak credit, continues to evolve at a breakneck pace. The past five years has witnessed the institutionalization of subprime lending, with the locus of subprime loans shifting from small, independent lenders to large mortgage subsidiaries of banks (particularly national banks). Roughly two-thirds of subprime home loans are securitized on Wall Street, and investment banks and their affiliates increasingly are not only underwriting subprime securitizations but originating loans in subprime loan pools as well.

Another development, an unfortunate one, has been a sharp spike in home foreclosures in many cities across the country, often driven by unaffordable subprime

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¹ "Subprime Lending: Neighborhood Patterns Over Time," Jonathan Hershaff, Susan Wachter, and Karl Russo; "Mortgage Brokers and the Subprime Mortgage Market," Amany El Anshasy, Gregory Elliehausen, and Yoshiaki Shimazaki; and "Subprime Lending, Foreclosures, and Neighborhood Impacts," Dan Immergluck and Geoff Smith.

loans.² As foreclosures have climbed, the subprime industry has attracted criticism from consumers and the press for allegedly abusive lending practices and loan terms.

Because of such concerns, the legal landscape of subprime home mortgages is rapidly changing and remains in flux. At least 37 states, the District of Columbia, and some counties and municipalities have enacted anti-predatory lending laws of varying degrees of strength.³ In response, the U.S. Comptroller of the Currency has issued a regulation pre-empting state and local anti-predatory lending laws as those laws apply to national banks and their mortgage lending subsidiaries.⁴ The Federal Deposit Insurance Corporation is considering pre-empting those state and local laws for state-chartered banks as well.⁵ And Congress may consider a new federal anti-predatory law this term.

Just as subprime lending and its legal environment have evolved, so has empirical research on the topic. Thanks to the efforts of researchers, both on this panel and others, we now have a store of empirical data on the workings of the subprime market that continues to grow.

The seven-city study by Jonathan Hershaff, Susan Wachter, and Karl Russo is a splendid example of recent advances in subprime research. Their study is important in

² See, e.g., The Reinvestment Fund, "Mortgage Foreclosure Filings in Pennsylvania," 1 (2005), available at www.trfund.com/policy/PA_Foreclosures.htm (last viewed July 14, 2005) (concluding that "the subprime foreclosure rate [in Pennsylvania] is driving rising foreclosure filings around the Commonwealth"); Dan Immergluck and Geoff Smith, "Subprime Lending, Foreclosures, and Neighborhood Impacts," 2-5 (2005) (reviewing literature).

³ See Butera and Andrews, "State and Local Predatory Lending Laws (As of 4-22-05)," available at www.butera-andrews.com/legislativeupdates/directory/State/Legislature/Bills/sbc/ List% 20of% 20State% 20and% 20Local% 20Predatory% 20Lending% 20Laws.pdf (last viewed July 11, 2005).

⁴ Office of the Comptroller of the Currency, "Bank Activities and Operations; Real Estate Lending and Appraisals," 69 Fed. Reg. 1904 (Jan. 13, 2004).

⁵ See, e.g., Hannah Bergman, "In Brief: FDIC to Issue CRA Rule, Other Proposals," *American Banker*, July 13, 2005.

several ways, not the least of which lies in documenting changes in how subprime refinance loans affected neighborhoods from 1997 through 2002. From 1996 through 2003, subprime home loans more than tripled in volume nationwide. But that growth was not evenly distributed across cities and neighborhoods, as Hershaff, Wachter, and Russo demonstrate. First, from 1997 through 2002, subprime lending migrated geographically. Two of the seven cities studied – Philadelphia and Baltimore – experienced absolute declines in the number of subprime loans over that period, while other cities, especially Dallas, experienced rapid growth. Second, from 1997 through 2002, subprime lending migrated from lower-income areas to higher-income areas and to areas with less educational attainment and more minority households. According to the authors, from 1997 through 2002, "low income areas, all else equal, [became] less attractive to subprime lending."

From this, Hershaff and his colleagues deduce that the subprime business model changed and, with it, subprime geography. This conclusion is important. The question, then, is: how did that model change and why? Is it that higher-income borrowers have more cash flow with which to service high-cost debt? Or do subprime lenders take profits from poorer neighborhoods and flee, once foreclosures from subprime loans take their toll on surrounding property values?

The study bears other fruit that merits exploration. For example, why did lending fall in Philadelphia and Baltimore but skyrocket in Dallas? It is unlikely that legal reform explains the drop in subprime lending in Philadelphia and Baltimore because the Pennsylvania legislature pre-empted Philadelphia's 2001 anti-predatory lending

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ordinance within weeks of passage.⁶ Similarly, Maryland's anti-predatory lending statute did not go into effect until June 1, 2002,⁷ close to the end of the period studied. Nevertheless, government enforcement and community advocacy could explain part of the story in those cities. During the period studied, Baltimore came under intense federal scrutiny due to FHA loan fraud,⁸ while community advocates mounted a strong anti-predatory lending campaign in Philadelphia that culminated in passage of the short-lived Philadelphia ordinance.

Conversely, what explains the spike in subprime loans in Dallas? Texas did not adopt specific anti-predatory lending legislation before 2003, which might suggest that government scrutiny and consumer advocacy were nascent in Texas relative to Maryland and Philadelphia from 1997 through 2002. The spike might also denote flight by subprime lenders to a market with fewer consumer safeguards. Alternatively, the upswing in subprime Dallas loans could indicate intensified marketing to immigrants. The study's finding that growth in Hispanic households drove subprime growth in significant part is consistent with such a hypothesis.

As this also suggests, a final and disturbing implication of the Hershaff et al. study is market segmentation by race and ethnicity. The authors conclude that after *holding income and credit risk constant*, African American and Hispanic borrowers were

⁶ Pa. S.B. 377, Act No. 55 (signed into law June 25, 2001), available at www.mortgagebankers.org/resources/predlend/ (last viewed July 12, 2005).

⁷ Md. H.B. 649, ch. 532 §§ 3-5 (signed into law on May 16, 2002), available at www.mortgagebankers.org/state_update/2002/md/hb649e_0516.pdf (last viewed July 12, 2005).

⁸ See, e.g., Department of Housing and Urban Development, "Unequal Burden In Baltimore: Income and Racial Disparities in Subprime Lending" (May 2000), available at www.huduser.org/Publications/pdf/baltimore.pdf.

more likely than whites to have costly subprime loans.⁹ This raises a host of troubling questions. For example, to what extent do subprime lenders steer prime-eligible minority applicants into inappropriate subprime loans? What impediments do minority applicants face in shopping for home loans? How might subprime lenders create and take advantage of those impediments?¹⁰ Notwithstanding those impediments, do prime lenders do appreciable lending in the affected minority neighborhoods? Finally, do subprime lenders capitalize on ignorance, given the authors' finding that subprime growth goes hand-inhand with lower education (and, in the case of Hispanic borrowers, of reduced fluency in English)?¹¹

The panel's second paper, by Amany El Anshasy, Gregory Elliehausen, and Yoshiaki Shimazaki, studies loans by 10 large subprime lenders between the third quarter of 1995 and year-end 2003. The data set, furnished by the American Financial Services

⁹ See also Susan E. Woodward, "Consumer Confusion in the Mortgage Market" (July 14, 2003), available at www.sandhillecon.com/pdf/consumer_confusion.pdf (finding that, on average, African Americans paid mortgage brokers an additional \$500 and Hispanics an additional \$275, compared with other borrowers, after controlling for education and other characteristics).

¹⁰ For trenchant analysis of such impediments, see Alan M. White, "Risk-Based Mortgage Pricing: Present and Future Research," 15 *Housing Policy Debate*, 503 (2004).

¹¹ For comparable findings, see Howard Lax, Michael Manti, Paul Raca, and Peter Zorn, "Subprime Lending: An Investigation of Economic Efficiency," 15 Housing Policy Debate, (2004) (concluding that subprime borrowers generally are less well educated than prime borrowers); Susan E. Woodward, "Consumer Confusion in the Mortgage Market" (July 14, 2003), available at www.sandhillecon.com/ pdf/consumer confusion.pdf (borrowers with bachelor's degrees paid mortgage brokers \$1500 less in fees, on average, than borrowers with no bachelor's degree). See also Marsha J. Courchane, Brian J. Surette, and Peter M. Zorn, "Subprime Borrowers: Mortgage Transitions and Outcomes," 29 Journal of Real Estate Finance and Economics, 365, 372 (2004) ("In the subprime market, one-fifth of borrowers are 56 years of age or older, while only 13 percent of the prime borrowers are in that age group"; this is "consistent with the concern that some subprime lenders inappropriately may target more elderly homeowners"); Kellie K. Kim-Sung and Sharon Hermanson, "Experiences of Older Refinance Mortgage Loan Borrowers: Broker- and Lender-Originated Loans," AARP PPI Data Digest, 83, at 3 (2003) (finding that older borrowers with broker-originated loans were more likely to rely "a lot" on their brokers to find the best mortgage for them than older borrowers with lender-originated loans were likely to expect the same from their lenders; among older borrowers, those who used brokers were more likely to respond to guaranteed loan advertisements than those with lender-originated loans).

Association (AFSA), is not publicly available¹² and provides loan-level data, including race, ethnicity, and FICO scores.¹³ The study's principal finding is that using a subprime mortgage broker is correlated with lower annual percentage rates (APRs).

So what does this mean? It could mean that subprime brokers employed by these 10 lenders enhance efficiency by helping customers get better APRs. This result would be surprising, given the principal-agent problems that subprime brokers present,¹⁴ reports of dissatisfaction with and abuses by subprime home loan brokers,¹⁵ and the potential added cost of using a middleman.¹⁶ Furthermore, one of the study's findings contradicts the

¹⁵ See, e.g., Departments of the Treasury and Housing and Urban Development, "Curbing Predatory Home Mortgage Lending," 22, 40, 69-81 (June 20, 2000), available at www.huduser.org/publications/pdf/treasrpt.pdf; Hearing on "Predatory Mortgage Lending Practices: Abusive Uses of Yield Spread Premia," before the Senate Committee on Banking, Housing, and Urban Affairs, 107th Cong., 2d Sess. 3 (2002) (testimony of Prof. Howell E. Jackson) (concluding that compensation in the form of yield spread premia "serve[s] only to [benefit] mortgage brokers," not consumers, and levies "implicit interest rates [that] are absolutely outrageous"), available at banking.senate.gov/02_01hrg/010802/jackson.htm; Howell E. Jackson and Jeremy Berry, "Kickbacks or Compensation: The Case of Yield Spread Premia" (Jan. 8, 2002), available at www.law.harvard.edu/faculty/hjackson/jacksonberry0108.pdf; Kellie K. Kim-Sung and Sharon Hermanson, "Experiences of Older Refinance Mortgage Loan Borrowers: Broker- and Lender-Originated Loans," *AARP PPI Data Digest*, 83, at 3-4 (2003) (reporting that older borrowers with broker-originated loans were more likely to have loans with points and prepayment penalties and to report that they received unfair rates and terms and worse loans than they expected).

¹² A November 13, 2002, AFSA Member Company Fact Sheet lists AFSA's mortgage lender members as including Ameriquest Mortgage Company, Conseco Finance Corp., Countrywide Home Loans, Equity One, CitiFinancial, Household Finance Corp., Key Consumer Real Estate, Washington Mutual Finance, and Wells Fargo Financial, Inc. See AFSA Member Company Fact Sheet 2 (Nov. 13, 2002), available at www.afsaonline.org/news/docs/ACFB1FF.pdf (last viewed July 13, 2005).

¹³ FICO scores are standardized credit scores developed by the Fair Isaac Corporation.

¹⁴ Subprime mortgage brokers have perverse incentives to sell unduly costly loans for at least two reasons: first, because their compensation increases with the volume of loans made; and second, because they do not bear the financial consequences if loans go into default. See, e.g., Kathleen C. Engel and Patricia A. McCoy, "A Tale of Three Markets: The Law and Economics of Predatory Lending," 80 *Texas Law Review*, 1255, 1280-81, 1286-89 (2002); Elizabeth Renuart, "An Overview of the Predatory Mortgage Lending Process," 15 *Housing Policy Debate*, 467, 480-82 (2004).

¹⁶ One study concluded that average compensation paid by borrowers to mortgage brokers was \$2425 per mortgage and that broker fees confused customers when shopping for mortgages. See Susan E. Woodward, "Consumer Confusion in the Mortgage Market" (July 14, 2003), available at www.sandhillecon.com/pdf/consumer_confusion.pdf.

inference that brokers make the market more efficient. Specifically, the study found that 32.4 percent of borrowers studied who had second mortgages — approximately one-third — had FICO scores above 680 (which are relatively high and often make borrowers prime eligible).¹⁷ Nevertheless, those borrowers all had subprime loans at subprime rates. Thus, far from supporting an efficiency hypothesis, the findings on second-mortgage borrowers provide a troubling indication of steering.¹⁸

Alternatively, the meaning of the correlation between mortgage broker use and lower APRs could be neutral. For all but one of the years studied, average nominal annual interest rates fell for 30-year fixed mortgages.¹⁹ So if mortgage broker use was rising when APRs were falling, that could explain the result. Unfortunately, the study does not control for changes over time, so we cannot tell whether the correlation with APRs is simply a coincidence or something more.

Finally, the correlation between broker use and lower APRs could mean something other than meets the eye. A second look is merited by the fact that the regression coefficients on three other independent variables for first mortgages have unexpected signs or move in unexpected directions.²⁰ First, as loan-to-value ratios go up,

¹⁷ See Table 1.

¹⁸ This comports with findings by Freddie Mac researchers that using a broker was more predictive of having a subprime loan than going directly to a lender. See Marsha J. Courchane, Brian J. Surette, and Peter M. Zorn, "Subprime Borrowers: Mortgage Transitions and Outcomes," 29 *Journal of Real Estate Finance and Economics*, 365, 380, 383 tbl. 1 (2004).

The El Anshasy study's comparable findings for first mortgages are less dramatic but also present concerns about steering. Fully 13.2 percent of the first-mortgage subprime borrowers studied – about one out of seven – also had FICO scores over 680.

¹⁹ See, e.g., "Freddie Mac, 30-Year Fixed Rate Mortgages Since 1971," available at www.freddiemac.com/pmms/pmms30.htm (last viewed July 12, 2005).

²⁰ See Table 3. Many of these same anomalies hold for second mortgages. See Table 4.

APRs go down.²¹ Normally, higher loan-to-value ratios denote higher risk, so one would expect the opposite result.²² Second, as borrowers' annual incomes fall from \$100,000 to \$35,000 and sometimes lower, so do APRs. Once again, this confounds expectations that higher-income borrowers would enjoy lower interest rates. Finally, for fixed- and variable-rate mortgages, APRs go down as mortgage terms grow longer. This runs counter to the historical trend that the longer the mortgage, the higher the interest rate.

These three results are odd and may mean that the model displays collinearity or omitted variable bias.²³ Alternatively, it is possible that the unexpected coefficients indicate loan flipping, as follows. A broker persuades a low-income borrower in financial distress to refinance an existing mortgage, so that the broker can earn a new

²¹ This inverse relationship holds true for fixed mortgages for all loan-to-value ratios and for variable-rate and hybrid mortgages for loan-to-value ratios above 80 percent.

²² The authors explain this result by noting that "nearly all borrowers with high loan-to-value mortgages have relatively high credit risk scores and income. Lenders do not make high loan-to-value mortgages to high-risk borrowers." Unfortunately, the authors present no empirical support from the data set for this assertion. Recent data from Standard & Poor's show the opposite. For the first quarter of 2005, S&P data indicate that average loan-to-value ratios for securitized subprime residential loan pools varied widely by loan originator and went as high as 95 percent for fixed-rate subprime mortgages. See, e.g., Standard & Poor's, "Trends in U.S. Residential Mortgage Products: Subprime Sector," First Quarter 2005, table 1a (July 14, 2005), available at www.standardandpoors.com (last viewed July 15, 2005). An April 19, 2004 presentation by Susan Barnes, managing director of S&P, included a graph showing that in the first quarter of 2004, average subprime loan-to-value ratios were approximately 78 percent, while average prime loanto-value ratios were fully 10 percent lower, at approximately 68 percent. See Standard & Poor's, "Evaluating Anti-Predatory Lending Laws: S&P's Approach," graph titled "LTV by Quarter" (April 19, 2004), available at

www.mortgagebankers.org/present/2004/Secondary/Predatory%20Lending/2nd%20Presentation-Barnes.ppt (last viewed July 20, 2005). For other periods portrayed in that same graph, average subprime ratios generally exceeded average prime ratios. See also Remarks by Governor Edward M. Gramlich at the Financial Services Roundtable Annual Housing Policy Meeting, Chicago, Illinois, May 21, 2004 ("Compared with prime loans, subprime loans typically have higher loan-to-value ratios ...").

²³ The authors correctly note a problem with selection bias in the decision to use a broker. (In addition to the reasons discussed in the study, selection bias could exist if the 10 lenders surveyed selected more reputable brokers than other subprime lenders, whether due to increased regulatory oversight or reputational concerns.) In an effort to remedy selection bias, the authors use a two-step instrumental variable approach. Nevertheless, the approach results in at least one anomalous finding. In the table reporting the probability of obtaining a mortgage from a broker (see Table 2, last column), the higher the proportion of the population that is white, black, Asian, *or* Hispanic, the lower the probability of using a broker. This uniformly lower probability among different ethnic and racial groups is surprising and may indicate model misspecification, since one would expect to find a higher probability of using a broker among at least one of those mutually exclusive groups.

brokerage commission. The broker persuades the borrower to refinance by offering lower monthly payments, which are accomplished by stretching out the loan term. Interest rates may have dropped, allowing a lower APR. Finally, at closing, the brokerage commission and other loan fees are rolled into the new principal and refinanced, thereby increasing the loan-to-value ratio.²⁴ Because the El Anshasy study does not report separate regression results for purchase money mortgages and refinance loans, a flipping and equity-stripping hypothesis cannot be rejected.

Finally, the paper by Dan Immergluck and Geoff Smith finds a positive correlation between rising residential foreclosures and increased violent and total crime in Chicago in 2001. According to the authors, an "increase in the neighborhood foreclosure rate of, say, 1 in 100 properties would yield an increase in violent crime of 2.33 percent."

The paper makes a major contribution to the mortgage literature by providing disturbing and important evidence of negative externalities from bad loans. The result means that unwise loans are not just a private matter between lenders and borrowers but can pose a real threat to life and limb of neighboring residents.

The paper raises interesting questions that I urge the authors to explore. One question has to do with the time lag between foreclosures and an effect on violent crime. The authors found a causal effect between foreclosures in 2001 and violent crime that same year. It would be interesting to learn why foreclosures have such a rapid effect. Is it

²⁴ This hypothesis has other empirical support. See, e.g., Kellie K. Kim-Sung and Sharon Hermanson, "Experiences of Older Refinance Mortgage Loan Borrowers: Broker- and Lender-Originated Loans," *AARP PPI Data Digest*, 83, at 3 (2003) (finding that older borrowers with broker-originated loans were more likely to refinance frequently than older borrowers with lender-originated loans).

because most foreclosed properties are vacant or abandoned immediately after foreclosure? In that regard, it is worth considering that foreclosure is not just a legal judgment but a process that unfolds after default by weeks or months. It may also be that a sister phenomenon is also contributing to violent crime, given the fact that many subprime homeowners in default give deeds in lieu of foreclosure or otherwise fall prey to foreclosure "rescue" scams.²⁵

Similarly, it would be worthwhile knowing what types of loans precipitated foreclosures accompanied by violent crime. It is not apparent from the study whether the loans that went into foreclosure were prime, subprime, or FHA-insured. Admittedly, such information is difficult to discern, particularly for 2003 and earlier, before subprime point spreads had to be reported under the new Home Mortgage Disclosure Act regulations.²⁶ Nevertheless, understanding those dynamics would have real value for evaluating needed policy reforms.

The three papers are fascinating not only for the light they shed on mortgage lending but also for what they reveal about the challenges of doing empirical research on subprime mortgages. Industry ("proprietary") databases often have rich loan-level data on subprime loans, including data on APRs, fees, race, age, and FICO scores. Unfortunately, those databases are either not publicly available or available only at a prohibitive price. This hampers the ability of other researchers to replicate studies that use those databases or refine findings from those studies.

²⁵ See National Consumer Law Center, "Dreams Foreclosed: The Rampant Theft of Americans' Homes Through Equity-Stripping Foreclosure 'Rescue' Scams' (June 2005), available at www.nclc.org/news/ForeclosureReportFinal.pdf.

 ²⁶ See Federal Reserve System, Home Mortgage Disclosure, 67 *Federal Register* 43218, 43219 (June 27, 2002); Federal Reserve System, Home Mortgage Disclosure, 67 *Federal Register* 7222 (Feb. 15, 2002).

The leading subprime data set that is publicly available consists of mandatory disclosures under the Home Mortgage Disclosure Act (HMDA). HMDA is a rich source of data (particularly in tandem with other data sets), but it has its limitations. First, until calendar year 2004, one could not identify individual subprime loans, only subprime lenders. That changed this year, now that new HMDA regulations require APRs on costlier subprime loans to be reported.²⁷

Second, even under the new regulations, lenders do not have to report credit scores or other indicia of credit risk. As a result, HMDA still does not permit researchers to control for the credit risk that individual borrowers present. In 1992, researchers at the Boston Fed were able to control for credit risk in a study of mortgage lending by persuading major lenders to provide a rich sheaf of loan-level data on a voluntary basis.²⁸ More recently, in an innovative approach, the paper by Hershaff and his colleagues seeks to address this problem by controlling for credit risk at the zip-code level. Nevertheless, it would be helpful to know the precise impact on individuals, not just on neighborhoods, as President Lacker emphasized in his opening remarks at this conference.²⁹ Another highly imaginative approach, taken by Federal Reserve Board economists in Washington, D.C.,

²⁷ See Federal Reserve System, Home Mortgage Disclosure, Final Rule, 67 *Federal Register* 7222 (Feb. 15, 2002). Under the new rule, lenders must report APRs on home mortgages that exceed the yield on comparable Treasury securities by more than 300 basis points for first-lien loans and 500 basis points for second-lien loans.

²⁸ See Alicia H. Munnell, Geoffrey M.B. Tootell, Lynn E. Browne and James McEneaney, "Mortgage Lending in Boston: Interpreting HMDA Data," 86 *American Economic Review*, 25, 26 (1996).

²⁹See Community Affairs Research Conference, Opening Remarks, Jeffrey M. Lacker, President, Federal Reserve Bank of Richmond, Washington, D.C. (Apr. 7, 2005), available at www.richmondfed.org/news_and_speeches/presidents_speeches/index.cfm/id=71/pdf=true.

is to reverse engineer credit scores for individual borrowers.³⁰ But that is extremely costly and largely impractical for private-sector researchers to replicate.

Now, 2004 HMDA reports are coming out with the new pricing data. In some cases, the data show that African Americans and other minorities paid more for home loans.³¹ Some lenders seek to explain those disparities by attributing the result to differences in credit risk. However, those lenders do not substantiate their claims with loan-level data. Nor does the public have access to credit scores or other credit risk data needed to test that proposition.

We are now at a crucial juncture. The public policy implications of this debate are too important to do without credit scores – or to force researchers to jump through hoops by reverse-engineering credit scores. Accordingly, I conclude with a modest proposal. Under HMDA, lenders should be required to report whatever credit scores they use – whether FICO scores or something else – to the Federal Reserve Board. Releasing raw HMDA data containing credit scores to the public might pose privacy concerns. However, there are a variety of ways to resolve such privacy concerns and still permit mandatory reporting and public release of credit scores. One approach might be to authorize the Fed to release HMDA data containing FICO scores that have first been "scrubbed" to make it impossible to trace back loans to specific borrowers, possibly by obscuring the loan amount (through rounding to the nearest \$1000 or \$5000) or the

³⁰ See Robert B. Avery, Paul S. Calem, and Glenn B. Canner, "Credit Report Accuracy and Access to Credit," *Federal Reserve Bulletin*, 297 (Summer 2004).

³¹ See, e.g., Hannah Bergman, "In Brief: Group Analyzes Subprime Data," *American Banker*, May 10, 2005, at 4; Hannah Bergman, "First HMDA Fallout – Activists Hit Citi, B of A," *American Banker*, April 5, 2005, at 1; Eric Dash, "New York Begins Inquiry into Possible Mortgage Bias," *New York Times*, April 29, 2000, at 2.

closing date (by using date ranges).³² A different approach might be to authorize private researchers to work with the raw data, subject to stringent privacy controls and reporting only of aggregate results. Undoubtedly, other privacy solutions could also be devised.

Mandatory reporting of credit scores under HMDA would benefit lenders if such data put discrimination concerns to rest. Alternatively, if African Americans or other minorities are paying more for credit after controlling for credit quality, society needs to know.

³² My heartfelt thanks to Kathleen Engel for suggesting this solution.