MILKEN INSTITUTE

*April 2007 / Research Report*

# EMERGING DOMESTIC MARKETS:

## *Increasing Capital by Improving Data*

*Glenn Yago, Betsy Zeidman,*
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## Acknowledgements

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The Milken Institute is an independent economic think tank whose mission is to improve the lives and economic conditions of diverse populations in the United States and around the world by helping business and public policy leaders identify and implement innovative ideas for creating broad-based prosperity. We put research to work with the goal of revitalizing regions and finding new ways to generate capital for people with original ideas.

We do this by focusing on human capital—the talent, knowledge, and experience of people and their value to organizations, economies, and society; financial capital—innovations that allocate financial resources efficiently, especially to those who ordinarily would not have access to such resources, but who can best use them to build companies, create jobs, and solve long-standing social and economic problems; and social capital—the bonds of society, including schools, health care, cultural institutions, and government services that underlie economic advancement.

By creating ways to spread the benefits of human, financial, and social capital to as many people as possible—the democratization of capital—we hope to contribute to prosperity and freedom in all corners of the globe.

The Milken Institute Center for Emerging Domestic Markets supports the expansion of investment in traditionally undervalued and undercapitalized entrepreneurs, enterprises and communities, including women and ethnic business owners, urban cores, rural areas and low-income populations, through research and data collection.

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The Ford Foundation is a resource for innovative people and institutions worldwide. Our goals are to strengthen democratic values, reduce poverty and injustice, promote international cooperation, and advance human achievement.

A fundamental challenge facing every society is to create political, economic, and social systems that promote peace, human welfare, and the sustainability of the environment on which life depends. We believe that the best way to meet this challenge is to encourage initiatives by those living and working closest to where problems are located; to promote collaboration among the nonprofit, government, and business sectors; and to ensure participation by men and women from diverse communities and at all levels of society. In our experience, such activities help build common understanding, enhance excellence, and enable people to improve their lives and reinforce their commitment to society.

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# Executive Summary

The dramatically changing composition of the U.S. population holds significant economic and political consequences. Ethnic groups now constitute majorities in four states (California, Hawaii, New Mexico, and Texas) and the District of Columbia, and within twenty years will do so in nine more (including electoral powerhouses New York, New Jersey, and Florida). If the purchasing power of the country's ethnic groups represented a single nation, it would constitute the world's seventh-largest economy.

Not surprisingly, the makeup of the nation's business ownership is changing as well. Ethnic-owned firms grew at twice the rate of all firms over the past ten years, and the number of women-owned firms grew faster. Businesses in traditionally overlooked areas, such as low-income communities and inner cities, show market potential that defies stereotypical expectations. Yet these business owners continue to face challenges accessing capital, thus hindering their opportunities for growth.

These emerging domestic markets (EDMs) have been overlooked and undervalued. Given their increasing share of the U.S. market, brakes on their growth will lead to brakes on overall national economic growth.

The reasons for these capital gaps have been well documented. Among the most significant is the lack of robust data on EDMs. Without comprehensive, reliable demographic and financial information, and a functioning infrastructure to disseminate that information, financial decision makers (e.g., investors, lenders, and funders), business leaders, and public policy officials will be unable to price risk and evaluate opportunities effectively. Furthermore, the lack of data constrains the development of innovative financial products.

This report surveys the current research on EDM data and offers an approach for data sharing, a "data consortium," that leverages existing resources and provides opportunities for improved analysis, policymaking, and product development.

Research clearly indicates that a capital gap exists in emerging domestic markets. Even after controlling for other characteristics (education, experience, industry, and local market features), there is consistent evidence that EDM businesses receive less capital and frequently receive it on less favorable terms. Yet the data on these markets remain inconsistent and non-standardized. For instance, credit scoring has proved to be a useful predictor of the likelihood of loan default. But traditional credit-scoring models undervalue EDM borrowers by overlooking other estimates of reliability (e.g., payment of utility bills) and market potential (density of neighborhoods, median incomes).

Additional standardized data on these markets could remediate these problems, and a number of organizations are working to improve EDM data collection. These include government agencies, financial institutions and funds, trade associations, private data-collection companies, and research groups.

In the course of preparing this report, Milken Institute researchers interviewed more than a hundred experts and identified nearly seventy databases. Among their key findings:

- Significant overlaps exist, as well as large holes in the quality and quantity of data. Many databases include relatively few survey units, and few effectively cover emerging domestic markets as a whole. Information often relies on self-reporting, which is notoriously unreliable.
- Given the broad range of groups interested in emerging domestic markets, and their varying goals, the data needs—and even definitions of terms—often are not standardized, limiting comparison.
- While there are several efforts to improve and aggregate EDM data, there is little information at the transaction level, except in proprietary databases. Yet this information is the most critical for assessing business opportunities and improving capital flows.
- There is definite interest in forming a data consortium, assuming that privacy and confidentiality concerns can be assuaged. Legal and technological solutions can address these issues.

In an EDM data consortium, members would agree to contribute data to a central database managed by a third party. Additional data could be purchased as targeted. Contributors would agree to a set of common definitions and to reformat their data to an established standard in order to enable comparison across databases. Unique identification numbers would mask contact information on specific parties or transactions, as would the inclusion of large numbers of organizations of varying types.

The recommended format for the data, a relational database, would be familiar to many users and would allow the data to be entered and maintained without additional programming. Members could create their own programs and export data for their own uses. Perhaps most important, they could use the data to develop or tailor financial products.

Financial innovations laboratories—which the Milken Institute uses to bring together practitioners, researchers, and policymakers to explore specific products—offer an approach to utilizing the data consortium. In the course of this research, two such labs laid the groundwork for piloting several EDM-targeted financial innovations. An ethnicity-focused loan securitization, a city-focused capital access program, and a location-based community investment note are all in the developmental stages in California, with the potential to bring new resources to small EDM firms.

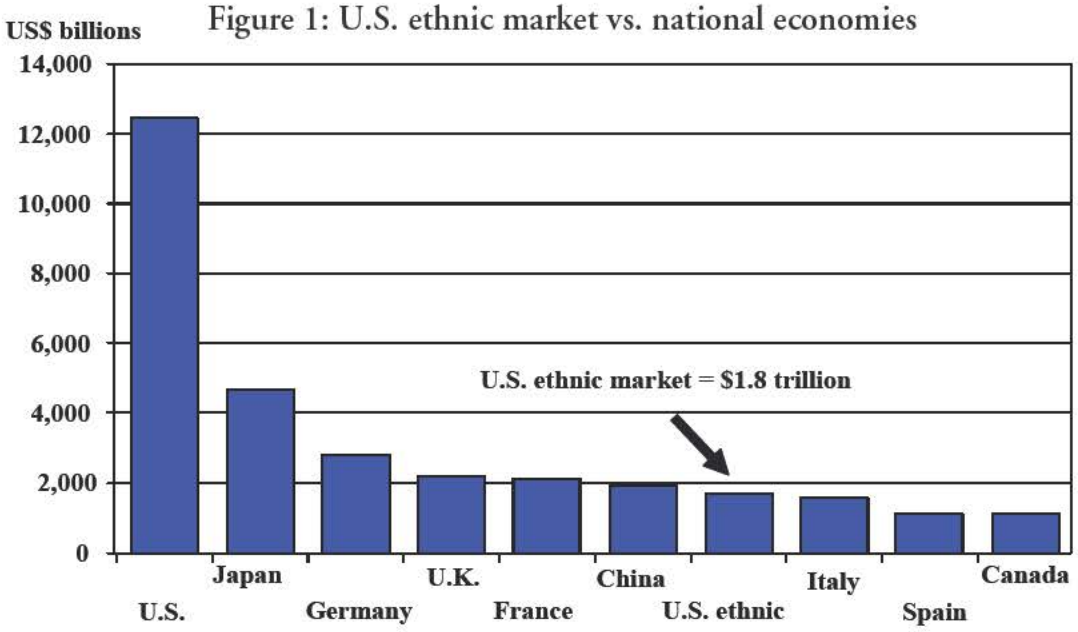
In April 2006, Federal Reserve Chairman Ben S. Bernanke recognized the importance of community economic development data. "By making companies, entrepreneurs, and investors aware of the new opportunities," he said, "and by promoting competition in underserved areas, such information helps put market forces in the service of community development."[1] A well-constructed data consortium could help eliminate information barriers and unleash the dynamism of the financial markets through knowledge building and product development. Ultimately, both the emerging domestic markets and the national economy would benefit.

[1] Remarks by Chairman Ben S. Bernanke, Greenlining Institute's Thirteenth Annual Economic Development Summit, Los Angeles, California, April 20, 2006.

# Introduction

The 2000 census dramatically illustrated the increasing diversity of the U.S. population. Over the next forty years, according to census projections, 90 percent of population growth will come from ethnic groups.[2] If the purchasing power of the country's ethnic groups represented a single nation, it would constitute the world's seventh-largest economy.[3]

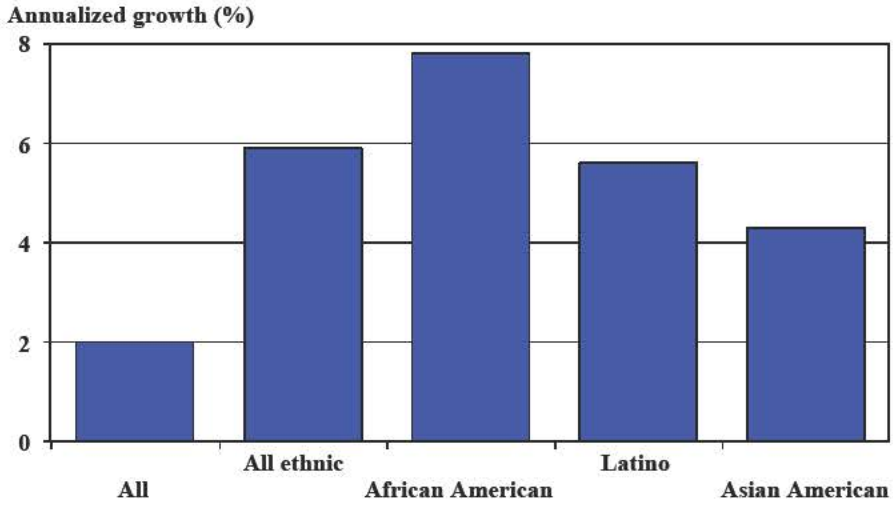
Figure 1: U.S. ethnic market vs. national economies




This demographic diversity drives shifts in business formation and ownership. As seen in figure 2, in the past ten years, the number of U.S. companies owned by African Americans, Latinos, and Asian Americans grew at twice the rate of all firms, and the number of women-owned businesses multiplied even faster.[4] In terms of both businesses and customers, these groups—anachronistically called "minorities"—are having a dramatic impact on national economic activity, and will continue to do so.

[2] U.S. Department of Commerce Minority Business Development Agency. September 1999. "Minority Population Growth: 1995 to 2050."
[3] U.S. Department of Commerce Minority Business Development Agency. September 2000. "Minority Purchasing Power: 2000 to 2045."
[4] U.S. Census Bureau. 1992. "Survey of Minority and Women-Owned Business Enterprises"; and U.S. Census Bureau. 2002. "Survey of Business Owners."

**Figure 2: Growth in minority-owned businesses, 1997–2002**




Today non-whites represent the majority of residents in California, Hawaii, New Mexico, Texas, and the District of Columbia.[5] Within twenty years, ethnic and racial diversity will yield emerging majorities in nine additional states, including some of the most populous and politically significant—New York, New Jersey, and Florida.[6] Together with women, these ethnic groups represent emerging domestic markets (EDMs), much in the way developing countries internationally are viewed as emerging markets. The Milken Institute defines EDMs as "people, places, or businesses facing capital constraints due to systematic undervaluation arising from imperfect information." They may include ethnic- and women-owned firms and/or inner-city and rural communities.

Small businesses constitute a significant portion of EDM firms, as they do all firms (more than 99.7 percent of all "employer firms" have fewer than 500 employees).[7] Since small firms are economic producers (52 percent of private-sector output)[8] and key drivers of job creation (75 percent of net new jobs each year),[9] the growing number of EDM firms have a significant impact on national employment and productivity. In addition to being faster growing and lower cost, they are relatively untapped and undervalued by current market prices.

**Without reliable and comprehensive data, business owners cannot make reasoned decisions, and investors cannot evaluate and price opportunities.**

Given that emerging domestic markets have been overlooked and undervalued, they represent an important investment opportunity. Yet EDM businesses face capital gaps that limit their ability to expand. This in turn limits their ability to generate jobs, particularly in low- and moderate-income (LMI) communities, home to a disproportionate amount of the diversifying population, and to generate returns to investors. As increasing numbers of the U.S. population have EDM status, it is critical to the national economic growth that we rectify this gap and enable EDM businesses to access capital.

5 U.S. Census Bureau. August 11, 2005. "Texas Becomes Nation's Newest 'Majority-Minority' State, Census Bureau Announces." Press Release, CB05-118.
6 Ibid.
7 U.S. Census Bureau. "Employment Size of Employer and Nonemployer Firms, 2003." See http://www.census.gov/epcd/www/smallbus.html.
8 U.S. Small Business Administration. "Small-Business Statistics." See http://www.sba.gov/aboutsba/sbastats.html.
9 Ibid.

In the 2003 study *Creating Capital, Jobs and Wealth in Emerging Domestic Markets: Financial Technology Transfer to Low-Income Communities*, the Milken Institute noted that the EDM capital gap existed not only in terms of the actual amounts provided to business owners but also, and perhaps even more significant, in the narrow range of available resources and financial products.[10] For instance, surveys show that many small-business owners tap personal savings and credit cards for financing. Only 27 percent of firms with annual sales less than $25,000 used credit lines, loans, and capital leases, compared to 46 percent of firms with sales of $100,000 to $250,000.[11]

That study explored reasons for the gap, factors as varied as: ongoing discrimination; the generally smaller size of the businesses and the resulting higher unit cost of financing them; entrepreneurial inexperience and the need for technical assistance services; tenuous professional and social networks; slower-growth industries; and a lack of comprehensive information and consistent data on EDM businesses. The information gap, perhaps the most important factor, leads to an inefficient deployment of capital to these businesses, thereby exacerbating other factors and creating a larger capital gap.

No new financial market or asset class has emerged over the past thirty years without considerable investment in building the informational infrastructure about firm and project finance characteristics, financial and economic performance, and the relationship between these and macroeconomic and institutional dynamics. Without reliable, comprehensive data, business owners cannot make reasoned decisions, and investors cannot evaluate and price opportunities efficiently. Additionally, the lack of data limits the development of financial technologies serving the EDM market, constricting the deployment of capital.

The study also noted that a vast array of EDM-related data sources do exist in the public, private, and nonprofit arenas. There are also several notable efforts to pool and cross-reference data within subsectors of the EDM field—the Community Development Financial Institutions (CDFI) Data Project; the National Association of Investment Companies (NAIC) project research on returns; the Research Initiative in Social Enterprise (RISE) surveys of community impact double-bottom line investment funds. However, current pools of data are fragmented, and many are insufficient in size, scope, or format.

Two key types of data are lacking in the EDM field: market data on firms and markets, and financing data covering debt and equity. The former would provide a reasonable estimate of market opportunities; the latter would help to show the structure and size of firm funding, as well as the performance of the loans and investments. A clear need exists to expand the availability and accessibility of data to enable further analysis on the range of EDM opportunities.

The purpose of this report is to address the lack of robust data tools and financial technologies regarding EDM lending and investing, and to provide an approach for data sharing. This would enable financial service providers to develop potential customers and products, business academics to research the market, and financial and policy practitioners to build the case for new business and public policy interventions supporting market growth. We call this approach for data sharing a data consortium ("consortium").

10 Yago, Glenn, Betsy Zeidman and Bill Schmidt. 2003. *Creating Capital, Jobs and Wealth in Emerging Domestic Markets: Financial Technology Transfer to Low-Income Communities*, Santa Monica: Milken Institute.

11 Bitler, Marianne, Alicia Robb, and John Wolken. April 2001. "Financial Services used by Small-businesses: Evidence from the 1998 Survey of Small-business Finances," Federal Reserve Bank.

The consortium approach is the result of an extensive review of the current literature on EDM data concerns; interviews with lenders, both traditional finance and EDM experts, in the public, private, and nonprofit sectors, and researchers on the EDM market; consultation with database managers; and the exploration of potential products that could be developed from improved data, in the course of two Financial Innovations Laboratories ("labs") sponsored by the institute.

The findings suggest that the means exist to significantly lessen the EDM capital gap. Researchers identified more than seventy databases with information on EDM business and investment performance. Combined in an integrated relational database, the data could be used to foster a variety of financial innovations. For example, EDM-reflective credit-scoring mechanisms could allow lenders to evaluate loan applicants more easily. With comprehensive data on loan performance, pools of loans could be securitized. Additional information on equity investment performance could facilitate market comparisons. All of these could enable investors to enter emerging domestic markets.

## This report includes:

- background on the state of EDM data
- a matrix of current EDM databases
- a summary of interest in a data consortium
- a design for an EDM database
- a discussion of potential financial products that could be generated, including the results of two labs that explored the capital gap in two California cities
- recommendations for next steps in building a data consortium

# Background

There has been much literature on the importance of EDM financing data and the challenge in its collection. A literature review, found in appendixes A1–4, contains a comprehensive analysis of leading published and unpublished reports. Below is an overview of the research, organized by topic to reflect the hypotheses of this report:

**Less than 1 percent of the venture capital invested annually nationwide is made available to meet the needs of minority business owners.**

- An EDM capital gap does exist.
- Current EDM data are insufficient and contribute to the capital gap.
- Improving the supply of data would lead to increased funding for EDM businesses.
- An integrated database is an attractive method for improving EDM data.

## The EDM Capital Gap

A Kauffman Foundation study has shown that ethnic, female, and low-income entrepreneurs have less access to equity and debt capital than do white, male, and more affluent business owners.[12] Canner analyzes Community Reinvestment Act (CRA) data from 1996 and 1997, and finds that "for all ethnic groups, the number of small-business loans falls with increases in neighborhood racial composition."[13] Bostic and Lampani looks specifically at African-American-owned firms. After controlling for "loan, firm, owner, and local market characteristics," the authors conclude there is a statistically significant difference in the approval rates between white- and African-American-owned firms.[14] Even when African-American entrepreneurs successfully secure financing, the amount of the bank loan is, on average, less than that of white borrowers with identical financial characteristics.[15] This gap is also evident for Latino-owned firms.[16] According to the Kauffman Foundation study, less than 1 percent of the $250 billion in venture capital invested annually nationwide is made available to meet the needs of minority business owners.

The Federal Reserve Bank of Chicago looks at the geographic distribution of CRA-related small-business lending and finds that "the number and dollar value of loans are greater in upper-income neighborhoods than in low-income neighborhoods."[17]

12 Bates, Timothy and William Bradford. 2003. "Minorities and Venture Capital: A New Wave in American Business," Kauffman Foundation.
13 Canner, Glenn B. 1999. "Evaluation of CRA Data on Small-Business Lending," Business Access to Capital and Credit of the Federal Reserve Bank of Chicago.
14 Bostic, Raphael W. and K. Patrick Lampani. March 1999. "Racial Differences in Patterns of Small-Business Finance: The Importance of Local Geography," Proceedings of the Federal Reserve Bank of Chicago.
15 Bates, Timothy. 1991. "Commercial Bank Financing of White- and Black-Owned Small-Business Start-Ups." *Quarterly Review of Economics and Business*, 31(1); Bates, Timothy. 1997. "Unequal Access: Financial Institution Lending to Black- and White-Owned Small-business Start-Ups," *Journal of Urban Affairs*, 19.
16 Morales, Angel and Javier Saade. Fall 2000. "Hispanic-American Venture Capital: Financing the Growth of the Latino Market," *Journal of Private Equity*.
17 Federal Reserve Bank of Chicago. November 2001. "2000 CRA Small-Business Lending Profile."

Furthermore, the share of loans to upper-income areas exceeds the share of businesses in those neighborhoods. This has been proved nationwide, as well as in Milwaukee and Washington, D.C.[18] Immergluck takes additional steps to account for firm density, firm size, and industrial mix in the Chicago metropolitan area.[19] Holding those variables constant, lower-income neighborhoods are still found to receive fewer loans.

The capital gap for female entrepreneurs is not as clear as for minority and low-income business owners. Cavaluzzo and Cavaluzzo fail to identify loan approval bias against female entrepreneurs.[20] Nevertheless, women-owned firms are less likely to apply for and use external financing.[21] Women-owned firms, furthermore, pay a higher interest rate on average than comparable male-owned businesses.[22] Although women own approximately 40 percent of all businesses in the United States, they receive less than 5 percent of all venture capital investment.[23]

## A Dearth of EDM Business Data

One factor affecting the capital gap is the lack of information on EDM business and investment performance.[24] Several research studies argue that systems for capturing and sharing market data on lower-income populations remain undeveloped.[25] This in turn prevents financial institutions from developing customized products. Clark and Gaillard find that the greatest barrier to growth and success of the emerging financial market is the lack of reliable financial-return data.[26]

Sabety and Carlson argue that new information sources are needed to expose potential investment opportunities in urban locations. In comparison to middle-class and wealthier locales outside inner cities, "urban areas may be currently experiencing a shortage of investment and market activity because their investment potential is not well-captured by current information resources."[27] The development of new data sources would improve urban market activity and reveal new investment opportunities.

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18 Squires, Gregory and Sally O'Conner. 1999. "Access to Capital: Milwaukee's Small-Business Lending Gap," Woodstock Institute Research Paper Series; and National Community Reinvestment Coalition. December 2000. "United States Small-business Lending Trends, 1996 to 1999."

19 Immergluck, Daniel. 1999. "Intraurban Patterns of Small-Business Lending: Findings from the New Community Reinvestment Act Data," Business Access to Capital and Credit of the Federal Reserve Bank of Chicago.

20 Cavaluzzo, Ken and Lind Cavaluzzo. 1998. "Market Structure and Discrimination: The Case of Small Businesses," *Journal of Money Credit and Banking*, 30(4).

21 National Women's Business Council. September 2002. "Getting to Success: Helping Women Business Owners Gain Access to Capital."

22 Coleman, S. 2000. "Access to Capital and Terms of Credit: A Comparison of Men and Women-Owned Businesses," *Journal of Small Business Management*, 38.

23 Brush, Candida, Nancy Carter, Elizabeth Gatewood, Patricia Greene, and Myra Hart. "Gatekeepers of Venture Growth: A Diana Project Report on the Role and Participation of Women in the Venture Capital Industry," Kauffman Foundation, 2004.

24 United States. Minority Business Development Agency. 2004. "Accelerating Job Creation and Economic Productivity: Expanding Financing Opportunities for Minority Businesses," U.S. Department of Commerce.

25 Weissbourd, Robert. June 2002. "Banking on Technology: Expanding Financial Markets and Economic Opportunity," The Brookings Institution; Ou, Charles. 2004. "Statistical Databases for Economic Research on the Financing of Small Firms in the United States." Working Paper, SBA Office of Advocacy.

26 Clark, Catherine H. and Josie Taylor Gaillard. August 2003. "RISE Capital Market Report: The Double Bottom Line Private Equity Landscape in 2002–2003." Research Initiative on Social Enterprise.

27 Sabety, J. Pari and Virginia L. Carlson. July 2004. "Using Information to Drive Change: New Ways to Move Urban Markets," The Brookings Institution Urban Markets Initiative.

In instances when information is collected, the data are not generally in a format useful to investors. The Office of Advocacy of the U.S. Small Business Administration reviews bank lending activities in 2002–2003 as recorded CRA reports.[28] Although the focus of the SBA report is an analysis of the level of lending to small businesses, a secondary implication is that banks report lending to low- and moderate-income areas only in aggregate. Characteristics of individual loans are missing, and their performance cannot be evaluated. The National Community Reinvestment Coalition analyzes CRA lending from 1996 to 1999 and concurs that the data, as reported, do not allow for an understanding of the roles of race and gender on investment performance.[29]

## The Potential Value of Improved EDM Data

Several papers argue that improving the quantity and quality of EDM data could increase the supply of capital to emerging small businesses. Carr and Schuetz[30] and Brush et al.[31] contend that an expanded collection of transaction data—tracking investment performance by gender, ethnicity, and geographic location—would improve the financial services environment for lower-income and minority households. For example, enhanced information would allow banks to conduct data mining (the analysis of large datasets) to uncover investment opportunities across markets and industries.[32]

One very promising application of data mining is credit scoring, a form of statistical analysis used to predict the probability that a loan applicant will default. Small-business credit scoring is relatively new—the first model was introduced by Fair, Isaac in 1995—and differs from traditional credit scoring in that it combines limited information on the firm with consumer data about the small-business owner.[33]

The personal credit history of a business owner has been shown to be an accurate predictor of a small business's repayment performance. In many cases, credit scoring has helped to increase small-business lending by simplifying the approval process and reducing the need for a strong relationship between the bank and the loan applicant.[34] "Research strongly suggests that small-business credit scoring has increased small-business credit availability in a number of dimensions, including: increasing the quantity of credit extended; increasing lending to relatively opaque, risky borrowers; increasing lending within low-income areas; [increasing] lending over greater distances; and increasing loan maturity."[35] The rise in lending has been most noticeable in the number

28 U.S. Small Business Administration, Office of Advocacy. March 2005. "Small Business and Micro Business Lending in the United States, for Data Years 2002–2003."

29 National Community Reinvestment Coalition. December 2000. "United States Small Business Lending Trends, 1996 to 1999."

30 Carr, James H. and Jenny Schuetz. August 2001. "Financial Services in Distressed Communities: Issues and Answers," Fannie Mae Foundation.

31 Brush, Candida G., Nancy Carter, Elizabeth Gatewood, Patricia G. Greene, and Myra M. Hart. October 2001. "An Investigation of Women-led Firms and Venture Capital Investment," CB Associates.

32 Wasserman, Miriam. "Mining Data." Spring 2000. Federal Reserve Bank of Boston. See http://www.bos.frb.org/economic/nerr/rr2000/q3/mining.htm.

33 Allen N. Berger, W. Scott Frame, and Nathan H. Miller. 2002. "Credit Scoring and the Availability, Price, and Risk of Small-Business Credit," Finance and Economics Discussion Series 2002–26, Board of Governors of the Federal Reserve System.

34 Fair, Isaac. May 2006. "Leveraging Fair, Isaac Analytics and Decision Technology to Improve Profitability in Small-Business Lending Markets," *Fair, Isaac Guide for Using Predictive Small-Business Analytic Models.*

35 Berger, Allen N. and W. Scott Frame. May 2005. "Small-Business Credit Scoring and Credit Availability," Federal Reserve Bank of Atlanta Working Paper Series.

of loans under $100,000 extended by large banks,[36] which are using credit scoring as a means to expand into the small-business lending market.[37]

Frame, Srinivasan and Woosley examine a sample of large U.S. banks and find that credit scoring leads to an 8.4 percent increase in the portfolio share of small-business loans: on average $4 billion per institution.[38] In the Federal Reserve Bank of Atlanta's district, the use of credit scoring increased small-business lending by $16.4 million per low- or moderate-income area served and the probability that a large banking organization would make small-business loans in the area by 3.8 percent.[39] Peterson and Rajan find that increased availability of credit scoring data allows banks to lend to more distant small-business borrowers.[40] Further, credit scoring mitigates the potential harmful default effects of distance lending because it improves the ability of lenders to assess and price default risks.[41]

The need for EDM private equity data has also received particular attention as EDM-focused funds have struggled to attract capital from diverse sources. One potential explanation is the perception that financial return must be sacrificed for social return.[42] Given the relative youth of the industry, few studies have analyzed EDM-targeted fund performance, but Bates and Bradford show EDM funds (as represented by funds targeting minority-owned businesses) have enjoyed strong returns with a mean internal rate of return of 23.9 percent (surpassing the 20.2 percent, ten-year trailing average for the private equity industry).[43] If the sector is to gain greater access to venture funding, investors must be made more broadly aware of investment performance. This could be accomplished through greater transparency, similar to the posting by CalPERS of its private equity investment returns.[44]

36 Akhavein, Jalal, W. Scott Frame, and Lawrence J. White. May 2001. "The Diffusion of Financial Innovations: An Examination of the Adoption of Small-Business Credit Scoring by Large Banking Organizations," Proceedings, Federal Reserve Bank of Chicago; Peek, Joe and Eric S. Rosengren. March/April 1998. "The Evolution of Banking Lending to Small Business," *New England Economic Review*; and Berger, Frame, and Miller 2002.

37 Loretta J. Mester. September 1997. "What's the Point of Credit Scoring?" *Business Review*, Federal Reserve Bank of Philadelphia.

38 Frame, W. Scott, Aruna Srinivasan, and Lynn Woosley. 2001. "The Effect of Credit Scoring on Small-Business Lending," *Journal of Money, Credit and Banking*, 33(3).

39 Frame, W. Scott, Michael Padhi, and Lynn Woosley. April 2001. "The Effect of Credit Scoring on Small-Business Lending in Low- and Moderate-Income Areas," Federal Reserve Bank of Atlanta.

40 Peterson, Mitchell A. and Raghuram G. Rajan. October 2000. "Does Distance Still Matter? The Information Revolution in Small-business Lending," Northwestern University.

41 DeYoung, Robert, Dennis Glennon, and Peter Nigro. March 2006. "Borrower-Lender Distance, Credit Scoring, and the Performance of Small-Business Loans," FDIC Center for Financial Research, Working Paper No. 2006-04.

42 Clark, Catherine H. and Josie Taylor Gaillard. August 2003. "RISE Capital Market Report: The Double Bottom Line Private Equity Landscape in 2002–2003." Research Initiative on Social Enterprise.

43 Bates, Timothy and William Bradford. "Minorities and Venture Capital: A New Wave in American Business." Kauffman Foundation. 2003.

44 Robins, Charles and Robert Toomey. March 2004. "Keeping the 'Private' in Private Equity: Dealing with FOIA Concerns," Weil, Gotshal & Manges.

## Proposed EDM Data Solutions

Several studies recommend potential solutions to the need for improved EDM data. The Information Policy Institute analyzes nontraditional information sources that could be used to bring minorities, low-income individuals, and others with insufficient credit information into the credit system. It suggests that consumer information from utility, child-care, and health-care providers, along with data from auto insurance companies and rental agencies (i.e., housing, furniture, and consumer durables) could be used to evaluate "thin-file to no-file" (TFNF) loan applicants.[45]

This would be an important step toward opening credit to emerging markets and expanding the breadth of EDM data. The major credit bureaus have the most extensive records. (Experian, for example, has credit information on more than 15 million U.S. businesses and approximately 215 million U.S. consumers). [46]

An obstacle to the use of these nontraditional data sources could be the limitations inherent in voluntary reporting. To that end, Afshar recommends that the public sector provide incentives to potential data providers (such as the utility companies) to overcome economic costs and possible regulatory barriers.[47] Increased reliance upon this alternative transaction data has the potential to provide many TFNF individuals with expanded access to credit. To date, most activity with alternative data involves consumer, as opposed to small-business, credit. However, personal credit history is a significant predictor of small-business credit risk.[48]

The Minority Business Development Agency, the Small Business Administration, Weissbourd, and Weissbourd and Berry all suggest that government, nonprofit organizations, and for-profit companies collaborate to improve EDM data.[49] The federal government and for-profit companies could make existing databases more accessible and augment their value by disaggregating the data.[50] Philanthropic leaders could provide financial support (Weissbourd 2002). Similarly, Hawke recommends combining U.S. Census, private marketing, and "non-traditional" sources to better understand the economic importance of EDM.[51]

[45] Information Policy Institute. July 2005. "Giving Underserved Consumers Better Access to the Credit System: The Promise of Non-Traditional Data."
[46] Experian. 2006. "Corporate Fact Sheet." See http://www.experian.com/corporate/factsheet.html
[47] Afshar, Anna. 2005. "Use of Alternative Credit Data Offers Promise, Raises Issues." New England Community Developments, Federal Reserve Bank of Boston, 3.
[48] Interview with Thomas C. Wise, Fair, Isaac, conducted May 30, 2006.
[49] United States Minority Business Development Agency (2004); U.S. Small Business Administration, Office of Advocacy (2004) The Small-business Economy (Washington, D.C.: Government Printing Office); Weissbourd (2002); and Weissbourd, Robert and Christopher Berry. March 1999. "The Market Potential of Inner-City Neighborhoods: Filling the Information Gap." Brookings Institution.
[50] U.S. Small Business Administration, Office of Advocacy (2004) The Small-business Economy (Washington, D.C.: Government Printing Office)
[51] Hawke, John. 2001. "Growing Diverse Banking Markets: Going Beyond Traditional Measures." Comptroller of the Currency Administrator of National Banks Community Development Newsletter.

# Existing EDM Databases

Currently, the major sources of EDM data fall into several key groups: financial institutions/funds (including debt and equity providers); government agencies; trade associations; nonprofits; and information management companies (comprised of private firms specializing in the collection and marketing of business data.) A matrix of data sources ("Data Matrix") is provided in appendix B. Although this does not capture the entire universe of EDM databases, it is representative because missing databases likely mirror those included in the map.

**Researchers interviewed more than a hundred experts and identified nearly seventy databases.**

The data matrix is organized first by survey unit, starting with databases containing information by business and ending with databases that have information on transactions. This format allows for easy translation into the relational database format. Second, it is ordered by organization type, with financial institutions' databases first and trade associations last. We selected this ordering because of database size—institutional databases are likely the most comprehensive, with nonprofit and trade association databases having the most specific data (and often being the smallest). Table 1 shows the number of EDM databases identified by survey unit and organization type.

**Table 1: EDM databases by survey unit and organization type**

| Survey unit | | Organization type | |
|---|---|---|---|
| Business | 45 | Government agencies | 21 |
| Lender | 9 | Nonprofit/research | 17 |
| Individual | 8 | Financial institutions/fund | 12 |
| Transaction | 6 | Trade associations | 9 |
| | | Information management companies | 8 |

In the course of developing this matrix, researchers interviewed more than a hundred experts and identified nearly seventy databases. Information varied by database type but generally includes a description of the database (e.g., type of data, survey unit, age and size of database, frequency of updates, accessibility); whether or not the database includes such data points as the race or gender of the business owner, characteristics of the business, characteristics of financing and performance; and the potential interest of the database representative in participating in a consortium. The research questionnaire appears in appendix C.

## Among the key findings:

- There are, as anticipated, a large number of existing databases. This is particularly true when "EDM" is broadly defined to include people (e.g., minorities and women) and places (urban areas, LMI communities), and when the data of interest includes demographic information and financial transactions.
- Data is collected by a variety of types of organizations, with potentially contrasting data needs.
- While there are significant overlaps in data, substantial holes exist in terms of the quantity and quality.
- Differences in definitions and terminology hinder comparability, even among databases with the same survey unit. For example, the Survey of Business Owners (SBO) defines a business as any non-farm or non-government business that filed a tax form as an individual proprietorship, partnership, or any type of corporation, and with receipts of $1,000 or more. The Kauffman Index of Entrepreneurial Activity uses household survey data and measures individual business owners, defined as individuals ages twenty to sixty-four who own a business as their main job with fifteen or more hours worked per week.
- There are several current efforts to aggregate and improve EDM data. Our work differs in that it attempts to capture the full range of EDM businesses and include both demographic and financial data. It would be tailored to the needs of investors.
- There is little information covering the financing of EDM businesses at the transaction level, except in proprietary databases of financial institutions or information management companies.
- There is definite interest in forming a data consortium and gaining access to an integrated EDM database, but great concern exists regarding privacy of the EDM business, as well as the privacy of the data source's information. We feel there are adequate legal and technological solutions to these privacy concerns.

To provide a clear picture of data available, we rated the EDM database content by organization type. This information is shown in table 2. A discussion of organization type and the data provided by each follows.

**Table 2: Database content by organization type**

| | Characteristics of business owner | Characteristics of business | Characteristics of financing | Performance of financing |
|---|---|---|---|---|
| Financial institutions | ● | ● | ● | ● |
| Government agencies | ● | ● | ◘ | ◘ |
| Trade associations | ◘ | ◘ | ◘ | ◘ |
| Nonprofits | ◘ | ◘ | ◘ | ◘ |
| Information management companies | ◘ | ● | ● | ○ |

● = Good content ◘ = Inconsistent content ○ = Little/no content

### 1. Financial Institutions/Funds

In general, financial institutions, specifically banks, have robust EDM databases. Either within a larger data set or separated for CRA reporting, banks collect and store demographic data on small-business owners, information on small businesses, loan details, and data on loan performance. Due to privacy concerns, financial institutions do not release information on the size of their databases, but we believe they are among the largest, second to credit-reporting agencies (categorized as "information management companies" and detailed in a later section). They are also the least likely to want to share data, as it is proprietary and central to their business. In general, banks collect information at the company/business level rather than by transaction.

**There is a growing effort to collect data on "double bottom line" investments, which yield financial returns and ancillary benefits, such as job creation.**

Non-banks also collect data on borrowers. For example, Allied Capital's small-business lender, Business Loan Express (BLX), collects data on each transaction performed. While its databases are smaller due to the size of the population served, they still rank among the largest databases in the matrix. Like banks, non-banks are generally not willing to share proprietary information.

On a similar note, the EDM-targeted investment funds (e.g., NAIC members) track performance and, frequently, demographics for their own purposes. Funds in which public pension funds have invested may have to release performance data, but not on a company level. However, there is a growing effort to collect data on "double bottom line" investments, sometimes known as "blended value" or "hybrid" investments. These are projects that yield both a financial return and other ancillary benefits, such as job creation, environmental mitigation, workforce benefits, and urban redevelopment. One source of such data is available via the Research Initiative on Social Entrepreneurship (RISE) web site. RISE conducts an annual "Social Investor Survey," a national survey of investments whose products, services, or business structures can be considered to have positive social or environmental impacts. The data are available in the RISE "Double Bottom Line Investor Directory," a searchable public database of these funds.

### 2. Government Agencies

Government agencies, led by the U.S. Census Bureau, have abundant demographic data on business owners. Studies such as the "Survey of Business Owners and Self-Employed Persons," "National Longitudinal Surveys," and the "Panel Study of Income Dynamics" capture the gender and ethnicity of business owners, as well as the location and age of their businesses. The Small Business Administration has a number of databases associated with its lending programs. These databases are potentially important because they enable the creation of proxies for calculating comparables to be calculated by income level or business type.

As an example, Standard & Poor's analyzed default data from the SBA 504 loan program to generate a risk model and develop ratings for the Community Reinvestment Fund's Series 17 and Series 18 note sales

(community development small-business loans). These ratings were critical in enabling institutional investors to purchase the notes, a first in the community development field. In addition to demographic data, the SBA has amassed information on small-business cash flows, financing, and repayment performance. The data are generally publicly available, although access may be limited by regulation or process. Sole proprietorships, for instance, report revenues on the owner's personal income tax form, which would not be accessible to researchers.

### 3. Trade Associations, Nonprofit Organizations, and Research Groups

Trade associations, nonprofit organizations, and research groups tend to have mission-specific databases that vary greatly in size and content. Detailed data are generally available by request, although access may be restricted to members. In most cases, aggregate data are available online or in the form of reports and/or white papers. Three general subgroups exist among these databases:

- databases that collect information only on the business and the business owner (location, number of employees, revenues, ethnicity, gender) and that include the Kauffman Financial and Business Research Database and the four databases from the Initiative for a Competitive Inner City
- databases like the Brookings Institution's Urban RPM Investor and the PRI Makers Network that collect information on enterprise financing, but little on the characteristics of the business or owner
- databases like the Business Consortium Fund of the National Minority Supplier Development Council that collect data on both demographics and business financing

### 4. Information Management Companies

Information management companies, such as Dun & Bradstreet, Fair, Isaac, VentureOne, and the three major credit-reporting agencies (Equifax, Experian, and TransUnion) collect and sell data related to businesses of all types and have some of the most extensive databases. D&B markets general business information—ownership, location, size, age, and cash flows—used by its clients to decrease risk exposure and increase sales. VentureOne sells venture capital data: firm location, cash flows, and financing. Although these databases are not specific to small or EDM businesses, many EDM firms are captured. Fair, Isaac captures hundreds of thousands of individual transactions and uses them to model predictive risk. Its databases are solely for the use of its clients.

Among the largest databases, holding millions of records each, are those of the three major credit-reporting agencies. These records are proprietary, regulated strictly by the Federal Trade Commission, and not available for general pooling. While they cannot share their data directly, credit agencies are interested in reviewing other pooled data as a means to explore alternative credit-scoring mechanisms.

## Current EDM Data Collaborations

As noted, several current efforts are under way to improve available EDM data:

- The CDFI Fund Community Investment Impact System (CIIS) gathers CDFI and CDE fiscal year-end Institution Level Reports (ILRs) and Transaction Level Reports (TLRs), using a web-based data collection system.

- The CDFI Data Project, sponsored by the Ford, Fannie Mae, and MacArthur foundations, collects data on 517 Community Development Financial Institutions using eight key industry trade associations: the Association for Enterprise Opportunity, the Coalition of Community Development Financial Institutions, the Community Development Venture Capital Alliance, the National Congress for Community Economic Development, the National Community Investment Fund, the National Federation of Community Development Credit Unions, the National Community Capital Association, and the Opportunity Finance Network.

- The RISE project, sponsored by the Columbia Business School, Calvert Investments, Commons Capital LLP, and various foundations, including the Rockefeller and Surdna foundations, conducts an annual national survey of double bottom line investments. RISE also surveys social ventures to understand the landscape of for-profit social venture CEOs and entrepreneurs in the United States. This survey focuses on emerging companies.

- Based on the research of Timothy Bates, Ph.D., of Wayne State University and William Bradford, Ph.D., of the University of Washington, the Kauffman Foundation analyzed venture capital funds operated by members of the National Association of Investment Companies (NAIC), a group that shares an interest in financing minority business enterprises (MBEs). This study explored the approaches to financing MBEs and calculated the rates of return of minority-oriented VC funds.

- The "Kauffman Firm Study" tracks the growth of 5,000 businesses over their first four years of existence.

- The Urban Markets Collaboratory, an online data portal developed at The Brookings Institution, provides news updates, links to relevant research and community partners, and chat functionality. It serves as an aggregator for community development data and research from numerous partner organizations, including the National Infrastructure for Community Statistics, Social Compact, and Universities, among others.

- An innovative new venture, Xigi.net, aims to gather data on blended-value investments in real time, providing a web-based database of entities and deals (with metrics) that can be revised by any registered user.

## Overall Data Quantity and Quality

**Privacy could be maintained by omitting borrower names and limiting geographic location to cities, or by data aggregation.**

In addition to illustrating the data collected, the data matrix demonstrates that in terms of quantity and quality, substantial holes exist. Many datasets have a narrow focus; they only capture information on demographics, specific industries, or individual cities. The U.S. Census (the source of the "Survey of Business Owners"), for example, is the best source for demographic information, but it does not capture data pertaining to business financing. While the scope of these databases meets the needs of the groups maintaining them, few effectively cover EDM businesses as a market.

Furthermore, a large number of EDM databases contain relatively few survey units. The Venture Capital Fund Database, owned by the National Association of Investment Companies, has information on twenty-four venture capital funds. The Aspen Institute's MicroTest Database and the Calvert Foundation's Profiles Databases likewise consist of seventy-five and seventy-one survey units, respectively. Alone they do not provide sufficient information on EDM businesses to allow potential investors to effectively analyze the markets.

In terms of quality, existing EDM data is self-reported, and its accuracy is unverified. Dun & Bradstreet, for instance, manages an extensive database covering 366,000 minority-owned businesses and 1.4 million women-owned firms.[52] However, the identification of a firm as minority- or women-owned depends solely on the voluntary disclosure by the business.

## Interest in an EDM Data Consortium

Reaction to a data-sharing system exceeded expectations and was positive across organizational types. A list of those most interested appears in appendix D. Survey respondents indicated their desire for better data and clearly perceived the value of an integrated database. Not surprisingly, respondents were especially interested in gaining access to *other* firms' data—to see if their experience was similar to their competitors' and to improve their ability to evaluate investment opportunities.

Organizations were more hesitant when asked about sharing their own data; key concerns were privacy and competition. Banks are restricted from sharing customer data without the consent of the customer, and government agencies cannot release data that ties loan performance to individual borrowers. Even nonprofit organizations active in the CDFI Data Project and trade associations like the National Minority Supplier Development Council expressed concerns over confidentiality. In most cases, however, privacy could be maintained by omitting the borrower's name and limiting the geographic location to a city, or by data aggregation to a level of observation that would prevent disclosure of private information.[53]

[52] Interview with Darren Elsner, Dun & Bradstreet. Conducted July 29, 2005.
[53] Interview with LeAnn Oliver, deputy associate administrator for financial assistance, Small Business Administration. Conducted July 14, 2005.

Some institutions disclosed discrete data-sharing projects. For instance, Bank of America has partnered with the Kauffman Foundation and the University of North Carolina (UNC) Kenan-Flagler Business School to study the relationship between financial and social returns from targeted venture capital investments. The project is funded by Kauffman, with Bank of America supplying data from the Banc of America Capital Access Funds, focused on underserved U.S. markets, and with UNC conducting the research. Before forming the partnership, Bank of America had to receive permission from the funds, the data had to be aggregated, and every data pool had to have at least six subjects (i.e., funds or companies). Even after those steps were taken, UNC could not share the data with anyone outside the university.[54]

**In recent years, several public pension funds have resisted application of the Freedom of Information Act in an effort to keep performance data confidential.**

Other entities have aggregated diverse data sources to create new information products. Social Compact's Neighborhood Market DrillDowns and LISC MetroEdge both incorporate census data (which is often outdated and undercounts EDM areas) with current surveys and private data sources. These enable the firms to develop more accurate estimates of the demographics and market potential of EDM businesses.

In addition to legal privacy issues associated with their customers, financial institutions in general do not want their competitors to be able to identify their data within the consortium database. In recent years, several public pension funds—and the private equity firms they invest in—have resisted application of the Freedom of Information Act in an effort to keep their performance data confidential.[55]

- Both the California Public Employees' Retirement System (CalPERS) and University of Texas Investment Management Co. (UTIMCO) faced FOIA lawsuits regarding disclosure of private equity returns and subsequently agreed to publish performance data and management fees at the fund level.
- Former Governor Mitt Romney of Massachusetts vetoed a bill that would have restricted the disclosure of venture capital and private equity investments made by the Massachusetts Pension Reserves Investment Management (MassPRIM).
- The State of Virginia passed a law exempting private equity funds invested in by the public retirement system from FOIA requests. The pension fund, however, must identify any private equity investments and their values.

Despite concerns regarding confidentiality, the vast majority of organizations surveyed, including financial institutions, are open to the idea of data sharing, provided private data can be masked.

54 Interview with Ed Powers, Kenan-Flagler Business School, University of North Carolina. Conducted July 2005.

55 Private Equity International. (2004) "Battleground States: A Geographic Guide to Public Disclosure Developments Across America." December/January, 50–51.

# Designing an EDM Data Consortium

The creation of the database would require a software or database developer to set up a query-based system that meets the needs of a varied user group, as users would seek to retrieve specific sections of data and display it in a customized format. The database design would also require a web platform. Some of the issues to be considered include: the best model design and structure, data content, access and functionality, and ownership and funding.

**Profit-driven entities might evaluate investment opportunities, while nonprofits might track social returns and researchers explore loan-geographic relationships.**

Consortium members would contribute data to a central database managed by a third party or a private database company. Additional data could be purchased from third-party vendors, such as Dun & Bradstreet and VentureOne (with pricing dependent on the number of records, as well as the number of licensed users).

Because each organization currently employs a unique data format, submissions would have to be standardized. Each consortium member—the organization supplying data—should be responsible for reformatting its own data, for the following reasons:

1. *Greater data integrity.* Each organization knows its data better and is better equipped to work with it. Placing the onus on each organization to ensure properly formatted data will reduce errors and increase the accuracy and integrity of the data.
2. *Reduced costs for the consortium.* The consortium would be relieved of the time and labor needed to ensure data is properly formatted, greatly reducing costs.
3. *Simple data submission.* The consortium would determine what information to collect and would define a standard data format, a schema using XML, a common markup language for documents containing structured information. Consortium members would then either periodically send XML files to the database administrator or have a web-based interface for submitting data themselves.
4. *Access to data.* In exchange for contributing data, members would gain access to the contents of the entire database. They would be free to run searches, download records, and analyze data. Thus, they would dramatically increase their understanding of EDM business and investment performance, and they would be better able to identify EDM investment and lending opportunities.

## Data Content Considerations

Possible uses of consortium data are numerous, would likely vary with user type, and would require enhanced database functionality. Profit-driven entities might want to mine the data to evaluate investment and lending opportunities, while nonprofits might seek to track social returns. Researchers might want to explore relationships, such as those between total loans disbursed and geographic location. Thus, the database would have to have significant flexibility to meet each user's needs.

In order to ensure the privacy of the borrower or equity recipient, the name, address, and contact information would be replaced with a unique identification number. If done in this manner, multiple loans extended to one borrower could be linked to a single customer identification number, but the identity of the customer would remain anonymous.

The identity of the data provider could be hidden through two mechanisms:

- *A standardized format.* Converting all data records to a common format would, at a minimum, make it harder to attribute a data record to a specific organization.
- *Recruiting a significant number of organizations of each type.* Even with a standardized format, it might still be possible to guess what type of organization, financial institution, nonprofit, or trade association supplied a given record. Further masking could be accomplished by recruiting a significant number of organizations of each type into the consortium.[56]

The consortium would need to monitor data accuracy. While the cost of an independent data watchdog would likely be prohibitive, consortium members could be asked to watch for suspicious records and report abnormalities. Penalizing members with expulsion from the consortium for providing false data could encourage them to scrutinize their own data before submitting it.

As noted at the outset, EDM data consistency is undermined by a lack of common definitions. Concepts such as "LMI" and an "ethnic-owned business" vary, as do calculations of the rates of financial and social return. Consortium members would have to adopt common definitions.

**Ownership, financial responsibility, administration, and maintenance of the database should shift to the members, who will benefit from the consortium.**

An EDM data consortium would likely have multiple user groups. Members would be given full access to the database. Subscribers who pay for access would be allowed to see no more data than that for which they paid. And researchers could be allowed limited access for a reduced fee or for free. The inclusion of non-members as paid subscribers would require the creation and maintenance of a hierarchical user list with varying levels of data access and security.

Database access and functionality would have to allow for Internet access. The easiest, most flexible, and most cost-efficient solution would be a web-based application. There are numerous technologies from which to choose; possibilities include Microsoft-based web applications using Active Server Pages (ASP) and .NET technologies, Sun Microsystems' Java-based web applications, and other open source technologies, such as PHP, Perl, and Python. All of these applications could operate with the consortium database.

[56] Take the example of a consortium comprised of the CDFI Data Project and two banks, Bank A and Bank B. The data collected by the CDFI Data Project would be recognizably different from bank data because it would track social returns. Therefore, Bank A should be able to attribute any record that did not track social returns, and was not its own, to Bank B. This could give Bank B a competitive advantage. However, adding more contributors removes this risk. Take the example of a consortium comprised of ten nonprofits and ten banks. Bank A should be able to determine if a data record belonged to a competing bank, but it would not be able to identify which one.

Additional issues for consideration include ownership and funding of the database. The initial establishment of a consortium would require philanthropic support. However, long-term ownership, financial responsibility, administration, and maintenance should be shifted to members. They would provide the data, and they should retain ownership of that data. Any transfer of ownership would present a conflict of interest related to potential resale opportunities. Furthermore, members would directly benefit from the consortium and should therefore pay for it. If they so chose, the membership could offset expenses by selling access subscriptions to non-member financial institutions and research organizations. Alternatively, database users could pay a fee based on the number of queries or downloads.

## Recommended Format: Relational Database

The database could take several forms, namely relational, dimensional, or object. For a variety of reasons, a relational database is the recommended format. Appendix E provides descriptions of the other two approaches.

A relational database uses a two-dimensional structure of rows (records) and columns (fields) to store data. All data are stored inside tables, and operations are performed on the tables. Operations include the retrieval of a subset of columns, a subset of rows, or selected records and columns from multiple tables to create a new table based on their intersections.

Relational databases must adhere to basic rules. Each record in each table must be unique and correspond to a primary key, a field that provides record identification. Each column must have a unique name. Entries in the same column must be of the same kind, and no column value can depend on any other column value other than the primary key. Further, the database must be normalized—each table should include unique fields that are not redundant with other fields within that table.

We have constructed a model of a potential relational database for the EDM data consortium. It contains three tables, each displaying unique information. These mock tables were created using Microsoft Excel and do not contain actual data. However, the tables provide a clear picture to enable a programmer to create a relational database using the data from existing databases.

To create a relational database using the many existing databases, an experienced programmer will first spend time mapping the existing database fields to the structure presented in appendix E, exhibits 1 through 3, or a structure deemed more appropriate by the consortium and programmer. Through this process, information from existing databases will populate the consortium's relational database. Mapping and populating these fields effectively will provide a tool whereby all existing databases can be reviewed and queried in one integrated database. The first table, EDM Business (exhibit 1), holds data pertaining to businesses and business owners. The primary key in this table is a unique business identification number, assigned as each new entry is added. Fields include owner's ethnicity, gender, business location (represented by street address including ZIP code), and industry, business status (active or out of business), and number of employees. The table also includes information from the firm's financial statement.

The second table, EDM Lenders (exhibit 2), includes information on all banks that lend in the EDM community, including the bank name and address, number and size of loans, and types of loans (e.g., SBA 504 loans, SBA 7(a) loans, etc.). Each bank receives an identification number as the table's primary key, similar to the business identification number in the EDM Business table.

Finally, a third table, the match-up, or *relational* table, EDM Investments (exhibit 3), provides the relationship between the data in the first and second tables. This table contains information on each unique investment/ loan provided *to* an EDM business in table 1 *by* an EDM lender in table 2.

In order for this table to be fully functional, every business and lender involved in each investment must have data populated in tables 1 and 2. Each investment is identified by a unique investment identification number. Each investment is tied to a specific EDM business and EDM lender, using "foreign keys," the ID numbers associated with a specific business or lender. These ID numbers are called "foreign keys" because they come from the previous two tables. The table includes specific information about that investment, including the type and amount of financing, interest rate, collateral, and rate of return.

Additional fields may be added to any of the three tables. If information is not available to fill every field in a particular record, a record may contain a NULL data point (rather than leaving the record blank in any field). However, we discourage heavy reliance on NULL data. If many records contain NULL data, the programmer may wish to delete the field.

Structured in this way, businesses and lenders can be viewed individually or combined in the EDM Investment table. Using a unique identifier, businesses, lenders, and investments can be queried and reviewed anonymously. In addition, multiple investments can be linked to unique businesses and lenders. Alternatively, users could run a search for specific criteria, such as all loans greater than $10,000 made to African-American businesses in Houston, Texas. Each table also contains a time-stamp field that notes when each record was created and updated. This enables users to search for information by date created or updated, a useful search criterion when seeking information in a particular time frame.

There are several advantages to a relational database over other models. First, it provides a description of the data using its natural structure only; no additional programming is required to structure the database.[57] Second, it allows for easy normalization "to ensure data consistency and stability, to minimize data redundancy, and to ensure updatability and maintainability of the data."[58] Finally, and perhaps most important for the consortium, the relational model is mature and widely used. Most organizations have experience with such models and are comfortable using common query languages like SQL to manipulate data. Thus, use of a relational database should increase members' ability to create their own programs to search and export data from the database, lessening the responsibilities of the database administrator and overall costs.

[57] Codd, E. F. 1970. "A Relational Model of Data for Large Shared Data Banks." Communications of the ACM. 13(6) 377-387.
[58] Bostrup, Tore. 2002. "Introduction to Relational Databases – Part 1: Theoretical Foundation." 15 Seconds. See http://www.15seconds.com/issue/020522.htm.

# Product Development

A key value of a data consortium is its ability to motivate increased interest and investment in EDM. Using its data, members could model new structures, develop and refine products, generate data, increase understanding of the market, and deploy additional capital.

**The Financial Innovations Lab is unusual because it unites diverse parties, all of whom have an impact on EDM business growth, but who rarely interact.**

Financial Innovations Labs are one mechanism of product development that leverages the strengths—the data and the partners—of a data consortium. The lab model brings together practitioners, researchers, and policymakers to work through specific challenges that limit the flow of capital into EDM communities. The lab is unusual because it unites diverse parties, all of whom have an impact on EDM business growth, but who rarely interact. The lab builds a market-based solution to the challenge by considering the appropriate financial technologies and the relevant adaptations needed for the LMI market. The solution is piloted by one or more participating institutions, refined by the lab and then deployed. Engaging financial institutions in the pilot design increases their sense of ownership, as does the possibility of access to new products. Engaging both the potential suppliers and users of new capital maximizes the likelihood of developing a viable product serving the interests of both parties.

In the course of preparing this report, the Milken Institute hosted two labs, the first in San Francisco, the second in Los Angeles. Each addressed existing problems of small-business capital access in the respective EDM community. Each explored several innovative financial products and policies that, if successfully implemented, would increase EDM capital flows. Each produced follow-on activity, laying the groundwork for the piloting of the product or policy supported in the lab. A description of the two labs follows

## The San Francisco Bay Area Lab

The first lab took place in San Francisco and targeted financial innovations to increase capital access to Latino entrepreneurs in the Bay Area. Participants included large and community-based banks, venture capital funds, institutional investors, loan funds, and community development groups, foundations, civic organizations, and government agencies and officials. A full list appears in appendix F1.

The Milken Institute provided background papers and a briefing on the challenges of EDM capital access (as laid out in *Creating Capital, Jobs and Wealth in Emerging Domestic Markets*), and identified specific innovations for consideration. The group considered these, aiming to identify one or more for execution. They included:

- an EDM-targeted mezzanine fund
- securitization and credit-enhancement
- an EDM data network
- a bank/community lender exchange

**By bundling multiple loans, risk is spread across the entire pool, reducing the risk of each individual loan.**

Two innovations emerged with the greatest potential as sustainable initiatives: the creation of an EDM-targeted mezzanine fund and a securitization with credit-enhancement. After in-depth exploration, the group decided that launching a pilot mezzanine fund was unfeasible; existing mezzanine funds were having trouble identifying Latino businesses, as there was not a large enough concentration of such businesses in the funds' sweet spot. Most Latino firms were in the startup and early-stage phases, and their real need was additional angel money or venture capital.

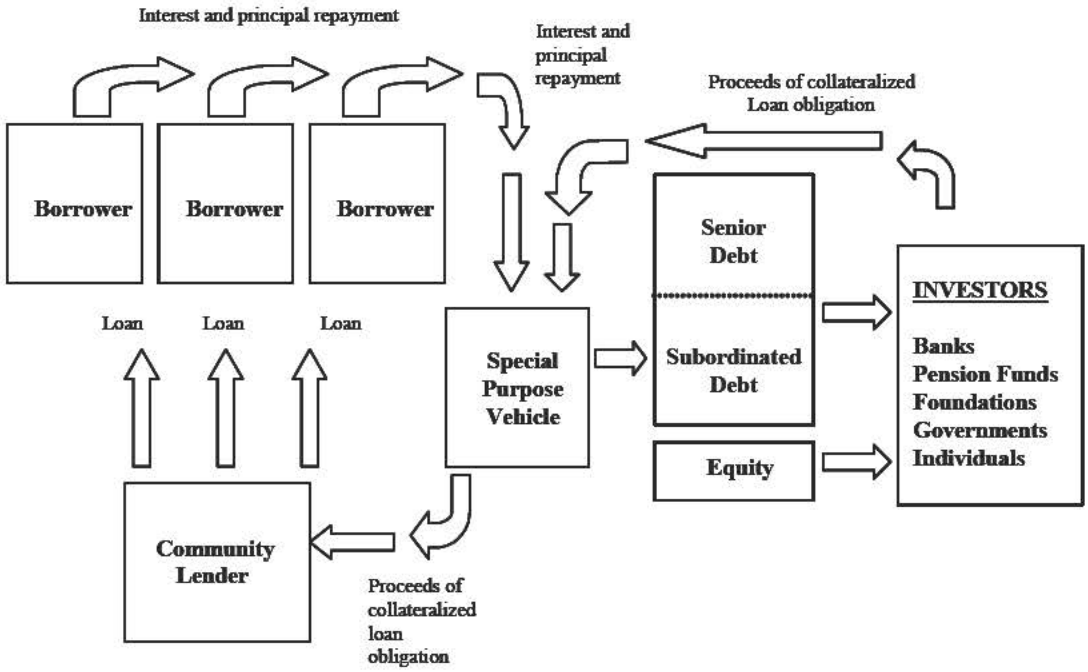
The group concluded that a collateralized loan obligation (CLO) could be more effective, in terms of time to develop, implement, and succeed. Securitization is a proven model that has increased capital flows in other sectors, including home mortgages, credit cards, and auto loans. With the participation of a foundation or government agency as credit enhancement, the structure could provide security to investors and enable smaller lenders to restructure their balance sheets, lower their cost of capital, and increase lending to Latino entrepreneurs.

In a securitization, bonds, loans, or mortgages underwritten by one or more lenders are packaged into an asset-backed security—the asset being the cash flows of the underlying financial product—which is then sold to investors. By bundling multiple loans, risk is spread across the entire pool, reducing the risk of each individual loan. The security may be created from sales of existing loans or from the transfer of new loans made with the expectation of immediately selling them. Selling the security brings new investors into the market and provides liquidity to the original debt holders, enabling them to lend to new borrowers or to purchase other assets.

A collateralized debt obligation (CDO) is a particular type of security, most appropriate to small-business and community development loans. It over-collateralizes the pool to provide additional security to investors (if loans are used as collateral, it is considered a CLO). Alternatively, as already noted, philanthropic capital could provide a loss reserve.

The structure of a typical CLO is shown in figure 3. A special-purpose vehicle (SPV) is formed. The SPV assembles a loan pool through purchases of individual banks' loans. A portion of the cash flows of these loans is used to issue securities, with the remainder reserved as a loss reserve. Depending on the complexity of the structure, the investors may take different risk positions in exchange for varied potential return. Figure 3 assumes senior (traditionally investment grade) and subordinated debt tranches, and an equity layer. Once the banks have sold their loans, they are free to issue new ones, providing capital to new borrowers.

## Figure 3: Collateralized loan obligation schematic




CalSTRS, as representative of institutional investors, expressed interest in investing in such a product, assuming it could be rated. In order to achieve a rating, the pool would need to be approximately $75 million to $100 million. While large banks noted that they would probably not be inclined to sell their small-business loans, the smaller lenders were intrigued by a model that would allow them to focus on origination. The group explored other sources of loans: conventional small-business loans, C&I loans, the guaranteed and un-guaranteed portions of SBA 7(a) loans in the Bay Area, CalCAP loans in the Bay Area, and community development loans (from banks, credit unions and CDFIs). The San Francisco city treasurer thought it might be possible to eventually integrate such a model with a new business tax incentive program.

The lab decided to proceed with a feasibility study and to engage the input of the Community Reinvestment Fund, a Minneapolis-based group that has securitized more than $400 million in community development loans (small-business and real estate) in eighteen offerings.[59] A report was published and distributed following the lab (*The Isabela Project: Closing the Latino Capital Parity and Procurement Gap*, 2005), and the Milken Institute is pursuing the feasibility study. It quickly became clear that a viable securitization would need to include loans to ethnic business owners in general (not just Latinos) and to cover a wide geographical area in order to accumulate a diversified pool.

[59] Community Reinvestment Fund. 2005. "CRF USA 2003/2004 Annual Report."

**A data consortium would enhance the ability to securitize EDM loans by providing methods and data for risk assessment and the establishment of proxies and synthetic structures.**

Research in the area of emerging domestic markets notes that the market for securitized small-business loans, excluding those guaranteed by the SBA, is developing more slowly than other securities.[60] Researchers attribute this sluggish development to a number of factors, many of which have been echoed in the course of the lab's follow-on research: the relatively high cost of accumulating small loans; lack of small-business securitization experience or experience selling loans at a discount; lack of knowledge of the financial structure by community development lenders; desire of community-based lenders to hold loans on their balance sheets; lack of strong performance data; lack of internal staff to market additional loans or comparable data for loans with a similar risk profile; and in a low interest rate environment, the perception that liquidity is not a problem.[61]

The structural problems can be addressed through the securitization process—identifying the particular group of loans to be pooled; creating a system of advance commitments as CRF has done, in which loans are made subject to certain standards; the funds could retain the servicing and underwriting of some loans to maintain relationships with their customers. This approach can enable lenders to originate loans at rates that enable them to avoid any selling discount, as well as to earn origination and servicing fee income. The issue of educating lenders about securitization benefits is a critical factor that must be overcome if the model is to succeed. The data consortium, with a robust database, would significantly enhance the ability to securitize EDM loans by providing methods and data for risk assessment and the establishment of proxies and synthetic structures as needed. The richness of the data would inform investors and lenders, and help establish pricing.

Securitization is an industry worth hundreds of billions of dollars, with nearly $29 billion currently in small-business loan securitizations.[62] It provides lenders not just liquidity (a feature that will become more significant when interest rates rise again), but more efficient use of capital, better matching of assets and liabilities, new investors who would not ordinarily invest in the small-business market; and potentially increased profitability. For lenders subject to CRA regulations, investing in a security created from CRA-eligible loans may be less costly and more efficient than originating those loans themselves.

## Los Angeles Financial Innovations Lab

The second Financial Innovations Lab took place in Los Angeles, with the focus on modifying financial technologies to facilitate increased capital to small-businesses in Los Angeles. Preparations for this lab built on lessons learned from the first lab. Each introduction of an innovation was presented by a practitioner interested

60 Acs, Zoltan J. "The Development and Expansion of Secondary Markets for Small-Business Loans." Working Paper Series 99-01. Commissioned by RISE Business Research Institute for Small and Emerging Business.

61 A detailed discussion of these issues and our survey can be found in "The Isabela Project: Feasibility of Securitizing Small-business Loans," commissioned by the Isabela Project Executive Team, in progress.

62 U.S. General Accounting Office. October 2003. "Community and Economic Development Loans: Securitization Faces Significant Barriers." Report to Congressional Requestors.

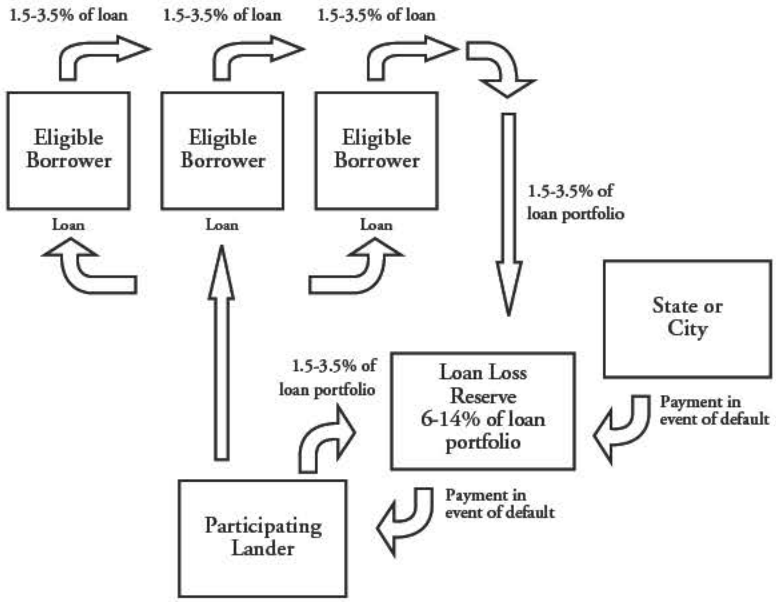
in developing a Los Angeles-based program. In this way, participants could identify opportunities and obstacles at the outset, increasing the likelihood that the model probed in the lab would result in a working product. The discussions at this lab were much more operational in focus than those at the first lab.

The lab engaged representatives from heads of CDFIs and microfinance institutions, community and investment bankers, equity investors, advisors to institutional investors, philanthropic leaders, representatives from city and state government, and the president of the Los Angeles City Council. Appendix F2 contains a full list of participants.

Innovations considered included a Los Angeles-targeted Capital Access Program, presented by Kirsten Snow Spalding of the California Pollution Control Financing Authority, which oversees the California Capital Access Program (CalCAP); a Los Angeles-area small-business loan securitization (similar to the model explored in the San Francisco lab), presented by Ian Cudlipp of Four Corners Capital Management, a leader in securitization with strong interest in CRA-focused securitization; and a Los Angeles-branded Community Investment Note, presented by Shari Berenbach of the Calvert Foundation, creator of the California Community Investment Note. Several recommendations and action items emerged from the lab. In each case, individuals volunteered to pursue follow-up steps.

Participants concluded that greater use of the CalCAP program in Los Angeles would increase access to capital for EDM/LMI businesses. A Los Angeles-focused program would operate within the state's existing CalCAP and bolster CalCAP loans to businesses. In the state program, shown in figure 4, the lender and borrower generally each pay 2 percent of the loan amount into a loan loss reserve, and the state contributes a 4 percent match. This 8 percent reserve mitigates the lender's risk. CalCAP has a provision for an independent contributor to increase use by helping to cover the borrower or lender costs. Kirsten Snow Spalding discussed the success of a similar loan loss reserve used by the California Integrated Waste Management Board. In this example, the added incentive successfully serves to foster CalCAP participation by certain recycling businesses. Several Lab participants were CalCAP lenders (i.e., they participated in the state program) and suggested that coverage of the banks' contribution to the loan loss reserve would help mitigate perceived risk in CalCAP loans and increase activity.

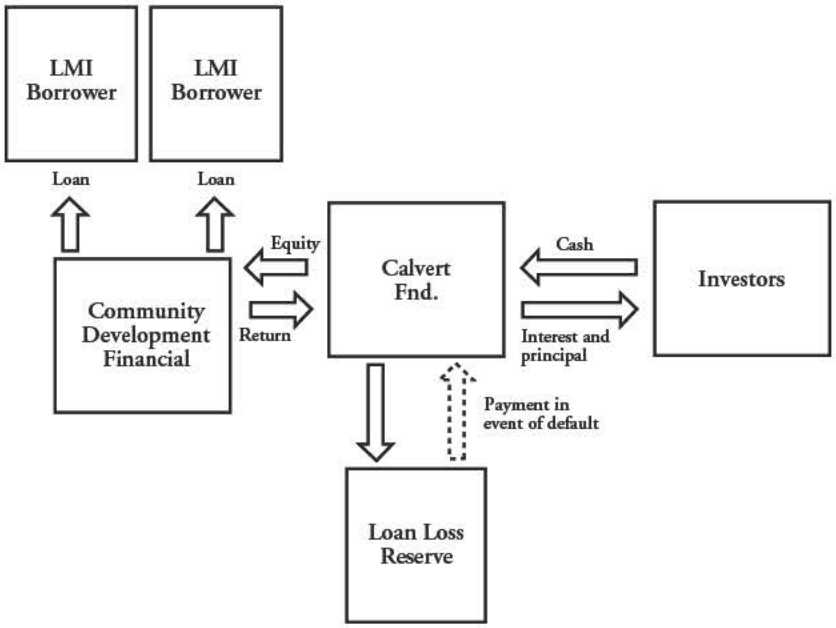
## Figure 4: Capital access program structure




In a Los Angeles-focused program, the independent contractor might be the City of Los Angeles or a local foundation. In addition to, or in lieu of, offsetting the borrower's or lender's contribution to the loan loss reserve, the contributor might also help pay the lender's cost of marketing and loan origination, increasing outreach and usage of the program. The program could be sector- or neighborhood-specific, and would make use of existing infrastructure. Representatives of the California Community Foundation and Southern California Grantmakers (an association of corporate, family, and public foundations) responded positively to a potential role for local philanthropies. The city representatives did not see any barriers to pursuing this model. There was particular discussion of focusing on mixed-use development, especially in the downtown area, as a pilot project. Following the session, conversations have been held with the mayor, city council president, and California Pollution Control Financing Authority regarding next steps to building a program.

A Los Angeles-branded community investment note would channel capital to the smaller EDM businesses, many within the burgeoning immigrant communities. It would use the Calvert Community Foundation's existing structure, shown in figure 5, and market to local institutions and individuals. Notes could be as little as $1,000, but most institutions invest at least $50,000. Interest rates are flexible and chosen by the investor (generally between 0 percent and 3 percent), and terms run between one and ten years. Funds raised by the notes would be invested in local Community Development Financial Institutions, loan funds, and CDCs. Local foundations and philanthropists could credit-enhance the loan pool to help mitigate the risk, as well as help support the cost of marketing, origination, due diligence, and placement of proceeds. In addition to small-business lending, funds could be used for affordable housing and community development. Calvert has created similar customized note programs, including a geographically focused effort for the Gulf Coast in the wake of Hurricane Katrina. This option was particularly interesting to the philanthropic participants, who viewed the community investment note as a means to invest in targeted areas. Since the lab, meetings have been held with other local foundations and the mayor's office, and interest is high.

**Figure 5: Community investment note structure**




A Los Angeles-focused small-business loan securitization (in the form of a Collateralized Loan Obligation, or CLO) would function in much the same way as the San Francisco model. As noted above, a CLO can increase lending activity by purchasing loans and offering lenders liquidity. There was particular interest in the advanced-commitment model, in which loans are made with the intent of transferring them to a conduit. Follow-up meetings with the mayor's office and local lenders are taking place. Additionally, since the securitization product explored in the first lab expanded its target from the Bay Area to ethnic business loans generally, it could include Los Angeles product as well.

## Additional Product Development

Product development is an ongoing activity that would be fed by the information contained within the consortium database. Data derived from new products would be added to the database. With a fully operational relational database, new products could be created by members. Historically, financial innovation has significantly broadened access to capital, e.g., the increase in small-business lending by large banks upon adoption of small-business credit scoring. Of particular interest to those we interviewed were EDM-tailored credit-scoring models (similar to those being developed for consumers, but reflective of business lending data) and structured finance vehicles leveraging multiple sources of capital, such as private funds, philanthropic contributions, and government guarantees.

# Conclusion and Next Steps

The research highlighted here demonstrates that there is both an information gap about the EDM businesses and financing, and interest from diverse parties in obtaining such information.

Financial technologies attempt to address information asymmetries. Information technologies address barriers in the diffusion of information. The data consortium model presented in this report would provide an infrastructure to deploy both financial and information technology, by amassing, disseminating, and applying information relevant to EDM financing.

The next steps to building a comprehensive, integrated platform would be to convene the key interested parties and establish terms and formats for constructing a relational database. The Brookings Institution, through its Urban Markets Initiative, has expressed interest in partnering with the Milken Institute to move this initiative forward.

During the research, it became clear that different subgroups of organizations (financial institutions, community development funds, government agencies) have different interests and concerns regarding the data consortium and data sharing. For instance, private investors are most concerned about proprietary data and more likely to be open about their concerns in a group of other investors than in a group including potential borrowers. While we originally intended to hold a single meeting of all members to formulate the consortium model, it may be more productive to hold smaller sessions of peer groups or to hold breakout sessions during the meeting. This may elicit the most open discussion regarding the necessary steps to integrate the databases and launch the consortium. A database developer should participate in the sessions as well.

In a speech given in April 2006, Federal Reserve Chairman Ben S. Bernanke spoke of the need for strong data on community economic development. "By making companies, entrepreneurs, and investors aware of new opportunities," he said, "and by promoting competition in underserved areas, such information helps put market forces in the service of community development."[63] The databases identified and mapped in this research provide a wealth of such information. Integrating them in the format designed here and engaging the data providers in a mutually reinforcing network will enhance the depth and breadth of information. Continuing to apply the information to develop and adapt financial products, through financial innovations labs and through the ongoing work of those in the EDM community will bring new capital and opportunity to these emerging markets and ultimately benefit the country's economic future.

[63] Remarks by Chairman Ben S. Bernanke, Greenlining Institute's Thirteenth Annual Economic Development Summit, Los Angeles, California, April 20, 2006.

## A.1: Capital Gap

| Author(s) | Title | Purpose | EDM Focus | Results | Implications |
|---|---|---|---|---|---|
| Bates (1991) | "Commercial Bank Financing of White- and Black-Owned Small-Business Startups" | Analyzes commercial bank financing, paying particular attention to the question of whether discrimination might be responsible for the smaller loans received by black-owned firms. | Lending to African American-owned firms | Black firms are observed to be undercapitalized, and they received smaller loan amounts than white-owned firms possessing identical measured characteristics. | Elimination of this differential treatment would increase the survival rate among black startups. |
| Bates (1997) | "Unequal Access: Financial Institution Lending to Black- and White-Owned Small-Business Startups" | Compares access to capital for black- and white-owned business startups. | Lending to African American-owned firms | Blacks are less likely to receive startup financing from banks, and those who do obtain bank loans receive smaller amounts, on average, than white borrowers. | Debt and equity are complements, not substitutes, in the context of small firm creation; possessing equity increases access to institutional credit sources. |
| Bates (2003) | "Financing Disadvantaged Firms" | Examines three concepts of "disadvantage" (human capital, income, and labor market) to illuminate the issue of loan access and business viability among the poor. | Lending to minority-owned small businesses; case study of lending to African American-owned firms | Firm and owner traits that identify them as minority, startup, urban, and/or low- or moderate income are linked to reduced access to business loans from financial institutions. But greater loan access is not necessarily the solution to small-business success. | "Disadvantaged" small-business entrepreneurs need more than financing to succeed. The most successful have human capital, financial, education, and other resources available. Programs designed to benefit the "disadvantaged" entrepreneurs should focus on human capital. |

## A.1: Capital Gap, cont.

| Author(s) | Title | Purpose | EDM Focus | Results | Implications |
|---|---|---|---|---|---|
| Fairlie (2006) | "Kauffman Index of Entrepreneurial Activity: National Report (1996–2005)" | Highlight key statistics from the Kauffman Index of Entrepreneurial Activity. | Small-business and entrepreneur development | African Americans were the only major group to experience an increase in the rate of entrepreneurship activity in 2005. Latinos, immigrants and men's rates decreased; women's rates stayed the same. | n/a |
| Bostic and Lampani (1999) | "Racial Differences in Patterns of Small-business Lending: The Importance of Local Geography" | Examines whether considerations of local geography have been omitted inappropriately from previous analyses of differences in the credit market experiences of white- and minority-owned firms. | Lending to minority-owned small businesses | After controlling for a variety of loan, firm, owner, and local market characteristics, the only statistically significant racial disparity is the difference in approval rates between white- and black-owned firms. | The economic and demographic characteristics of a firm's local geography should be considered to achieve a more accurate quantification of radical disparities and to understand their underlying sources. |
| California Reinvestment Committee (1994) | "No Credit for Those Who Need It: Uncle Sam Ignores Small and Minority Business" | Examines SBA lending nationwide, and in California between 1990 and 1992. | Lending to ethnic-owned businesses | Nationwide, whites received almost 90 percent of total loans, Asians 6.2 percent, Latinos 4.8 percent, and African Americans 2.8 percent, with similar percentages in California. Lower-income California counties received about 39 percent of SBA loans, despite having 42 percent of the state's businesses. | The role of SBA lending should be to support small businesses not otherwise served by the credit system. Incentives, such as making the status of a financial institution as an SBA-guaranteed lender dependent on its record of lending, could promote this. |

| Author(s) | Title | Purpose | EDM Focus | Results | Implications |
|---|---|---|---|---|---|
| Cavaluzzo and Cavaluzzo (1998) | "Market Structure and Discrimination: The Case of Small-businesses" | Examines bank market structure to draw inferences concerning the role of discrimination in credit markets for small businesses. | Lending to ethnic- and women-owned businesses | White men and women can expect similar treatment in credit markets, with some benefits to female-owned firms located in concentrated banking markets. Minorities, by contrast, fare worse. | Although government regulations do not protect small-business owners from inequitable lending practices, results reflect possible spillover effects from regulations in other arenas, such as the 1964 Civil Rights Act. |
| Coleman (2000) | "Access to Capital and Terms of Credit: A Comparison of Men- and Women-Owned Businesses" | Compares access to capital for men- and women-owned small businesses, using data from the 1993 National Survey of Small-business Finances. | Women-owned businesses | Women-owned firms are less likely to use external financing as a source of capital. Although lenders do not discriminate on the basis of gender, women-owned firms paid a higher interest rate on their most recent loans. | Small businesses owned by women represent an increasingly important part of the small-business sector. Without access to sufficient capital, they will be unable to develop new products and services. |
| Federal Reserve Bank of Chicago (2001) | "CRA Small-business Lending Profile" | Compares small-business lending nationwide to five Midwestern communities (Chicago, Des Moines, Detroit, Indianapolis, and Milwaukee). | Low- and moderate-income lending | The number and dollar value of loans are greater in upper-income neighborhoods. Furthermore, the share of loans tends to be greater than the share of businesses in upper-income areas. | The CRA is not perfectly serving its purpose: to encourage depository institutions to help meet the credit needs of the communities in which they operate. |

## A.1: Capital Gap, cont.

| Author(s) | Title | Purpose | EDM Focus | Results | Implications |
|---|---|---|---|---|---|
| Morales and Saade (2000) | "Latino-American Venture Capital: Financing the Growth of the Latino Market" | Discusses the need for a fund that bridges and seed businesses with a Latino focus or ownership. | Latino-owned business investments | Key differences exist between the Latino and mainstream segments that make dedicated venture funds the optimal source of early-stage capital. | With capital dedicated to the Latino segment, Latino firms would not be relegated to peripheral status or subservient to mainstream opportunities of larger scale with better-understood challenges. |
| National Community Reinvestment Coalition (2000) | "United States Small-business Lending Trends, 1996 to 1999" | Analyzes the first four years of the new CRA small-business data to determine if banks and thrifts offered loans in proportion to the small-businesses located in census tracks of different income categories. | Lending in low- or moderate-income areas | On a national level, banks and thrifts did not offer loans in proportion to the number of small-businesses in low- and moderate-income tracts from 1996 to 1999. Greater disparities were found in metropolitan areas. | Although disparities by census tract income level were identified, the complete story is not known since the new small-business data does not contain any characteristics of the small-business owner, such as race or gender. |
| National Women's Business Council (2002) | "Getting to Success: Helping Women Business Owners Gain Access to Capital" | Explores a select sample of programs that provide training and access to capital for women-owned businesses. | Women-owned businesses | The number of women-owned businesses has outpaced businesses owned by men, but the proportion of the former who apply for capital and credit lags. Programs cited have been successful in helping women business owners obtain funding. | Further research to determine program awareness of the range of funding options offered through banks, foundations, government agencies, and other institutions will help extend these findings and provide additional guidance for initiatives. |
| Squires and O'Connor (1999) | "Access to Capital: Milwaukee's Small-business Lending Gaps" | A review of small-business lending in Milwaukee, Wisconsin. Illustrates how the FFIEC data set can be used to assess small-business lending in any local market. | Lending in low and low-to-moderate income areas | Lending activity in Milwaukee is below the national level, concentrated in middle- and upper-income areas (predominantly white). Gaps between black and white communities have grown. | Additional reporting and allowing lenders to solicit information on the race of small-business loan applicants would improve the analytical integrity of these studies. |

## A.2: Lack of Data

| Author(s) | Title | Purpose | EDM Focus | Results | Implications |
|---|---|---|---|---|---|
| Clark and Gaillard (2003) | "RISE Capital Market Report: The Double Bottom Line Private Equity Landscape in 2002–2003" | Presents findings from surveys to try to understand the emerging U.S. financial market for early-stage social and environmental private equity investing. | Surveyed funds invested for financial, as well as social or environmental, return; social return included EDM development. | Perhaps the greatest barrier to the growth and success of the double bottom line capital market is the lack of consistent and reliable financial return data. | An effective way to counter the perception that financial return is sacrificed for social return is for double bottom line funds to adopt standard investment language and provide convincing data. |
| Minority Business Development Agency (2004) | "Accelerating Job Creation and Economic Productivity: Expanding Financing Opportunities for Minority Businesses" | Reviews reasons for the lack of access to financing of minority-owned businesses and makes recommendations to improve financing options. | Minority-owned business financing | Reasons why minority businesses have trouble accessing financing include; small firm size, predominance of service businesses, consolidation of financial institutions, and lack of investment performance information. | There is a need to develop additional information on minority businesses and for the federal government to make existing data more readily available. |
| National Community Reinvestment Coalition (2000) | "United States Small-business Lending Trends, 1996 to 1999" | Analyzes the first four years of the new CRA small-business data to determine if banks and thrifts were offering loans in proportion to the small-businesses located in census tracks of different income categories. | Lending in low- or moderate-income areas | On a national level, banks and thrifts do not offer loans in proportion to the number of small-businesses in low- and moderate income-tracts from 1996 to 1999. Greater disparities were found in metropolitan areas such as Washington, D.C. | Although disparities by census tract income level were identified, the complete story is not known since the new small-business data does not contain any characteristics of the small-business owner such as race or gender. |

## A.2: Lack of Data, cont.

| Author(s) | Title | Purpose | EDM Focus | Results | Implications |
|---|---|---|---|---|---|
| Sabety and Carlson (2004) | "Using Information to Drive Change: New Ways to Move Urban Markets" | Explains the role of information in describing investment opportunities; describes the urban information gap. | Urban market investments | New information sources and analytical tools are needed to reveal the scope of investment opportunities in urban places. | The challenge for America's metropolitan economies is to understand how to harness information to spur development. |
| U.S. Small-business Administration, Office of Advocacy (2004) | "The Small-business Economy: A Report to the President" | Reviews the state of small business in the United States in 2003. | Small businesses | In 2003, the overall economic indicators improved as the recovery gained momentum. Small businesses led the way, but continued growth requires an environment that fosters more small-business activity. | Recommendations include broadening the understanding of small-business databases and improving data sources related to small business. |
| U.S. Small Business Administration, Office of Advocacy (2005) | "Small-Business and Micro Business Lending in the United States, for Data Years 2002-2003" | Reviews bank lending activities in 2002–2003 as recorded in call reports and CRA reports. | Lending in low- or moderate-income areas | Small-business lending was slower from July 2001 to June 2002 than during the previous year. The smallest loans showed the least activity. | Banks report CRA lending data in aggregate only by the size of the loan. Research and investment analysis would be enhanced if more detailed data were available. |
| Weissbourd (2002) | "Banking on Technology: Expanding Financial Markets and Economic Opportunity" | Analyzes the effects of technology on the financial services industry and identifies its implications for expanding economic opportunity for lower-income consumers. | Lending in low-income areas | Technological change is creating opportunities for financial services companies to bring lower-income consumers into the economic mainstream. | Systems for capturing and sharing market data on lower-income populations remain undeveloped, preventing traditional institutions from developing customized products. Catalytic support from government, philanthropic, and other leadership organizations is needed. |

## A.3: Value of Improved Data

| Author(s) | Title | Purpose | EDM Focus | Results | Implications |
|---|---|---|---|---|---|
| Bates and Bradford (2003) | "Minorities and Venture Capital: A New Wave in American Business" | Seeks to uncover which minority businesses have access to venture capital, where that venture capital comes from, and how the investments perform. | Venture capital funds operated by members of the National Association of Investment Companies with a shared interest in financing minority business enterprises | Minority enterprise venture capital investing has proved profitable, with a mean IRR of 23.9 percent. | Whether or not the growing number of minority-owned businesses gain access to venture funding will depend, in part, on a better understanding of investment performance. |
| Robins and Toomey (2004) | "Keeping the 'Private' in Private Equity: Dealing with FOIA Concerns" | Reviews what can be done to limit the negative impact of performance disclosure (based on Freedom of Information Act) on private equity sponsors. | Private entity investors | A private equity fund subject to FOIA public disclosure may be at a competitive disadvantage to funds not subject to these requirements. | Private equity funds should take proactive steps to address FOIA concerns. |
| Petersen and Rajan (2000) | "Does Distance Still Matter? The Information Revolution in Small-business Lending" | Examines the increased distance between small firms and their lenders. | Small-business lending | Credit scoring and other data may explain the increase of lending at a distance. | This analysis indicates that there has been substantial development of technology in areas of small-business lending that have allowed greater ease of business transactions. |

## A.3: Value of Improved Data, cont.

| Author(s) | Title | Purpose | EDM Focus | Results | Implications |
|---|---|---|---|---|---|
| Fair, Isaac (2006) | "Leveraging Fair, Isaac Analytics and Decision Technology to Improve Profitability in Small-business Lending Markets" | Discusses the role of technology and automation (namely, credit scoring) in increasing small-business loans. | Small-business lending | Credit scoring simplifies the credit origination process by making it consistent and providing more control over risk while adding greater accuracy and fairness. | The use of analytics, such as credit scoring, is becoming more common in small-business lending. More small-business lenders are adopting this technology to provide better, more uniform service. |
| Berger and Frame (2005) | "Small-business Credit Scoring and Credit Availability" | Discusses small-business credit-scoring models and evaluates research findings from the 1998 Federal Reserve Bank of Atlanta survey on the effects of credit scoring on small-business lending. | Small-business lending | Research strongly suggests small-business credit scoring has increased small-business credit availability in a number of dimensions: quality of credit; lending to relatively risky borrowers; lending within low-income areas; and lending over greater distances. | Small-business credit scoring has primarily helped large banks. It allows them to overcome the need for relationship lending and permits them to lend over greater distances. Small banks can benefit from small-business credit scoring by purchasing credit scores from external vendors. |
| Berger, Frame and Miller (2002) | "Credit Scoring and the Availability, Price, and Risk of Small-Business Credit" | Examines the economic effects of small-business credit scoring. | Small-business lending | Small-business credit scoring is associated with expanded quantities, higher average prices, and greater risk levels for small-business credits under $100,000. | The decrease in credit available predicted to be the result of bank consolidation could be offset by the effects of small-business credit scoring, a technology employed mostly by large banks. |

| Author(s) | Title | Purpose | EDM Focus | Results | Implications |
|---|---|---|---|---|---|
| Brush, Carter, Gatewood, Greene, and Hart (2001) | "An Investigation of Women-Led Firms and Venture Capital Investment" | Investigates venture capital funding and women-led businesses. | Women-owned businesses | A very small percentage of investments are made in women-led ventures for all years, but a slight increase occurred between 1995 and 1998. Early-stage computer-related businesses in the Northeast and West are more likely to receive funding. | Equity investment in all types of entrepreneurial ventures is necessary for future economic growth. This could be fostered though tracking investments and performance of investments by gender, race, and ethnicity, as well as geographic location in all venture-funded companies. |
| Carr and Schuetz (2001) | "Financial Services in Distressed Communities: Framing the Issue, Finding Solutions" | Examines the explosive growth of alternative financial services outlets in distressed communities and the corresponding growth of subprime and predatory lending in those markets. | Distressed communities including low- and moderate-income areas | Improving the financial services environment for lower-income and minority households is imperative to enabling them to benefit from the wealth-building opportunities available to most Americans. | Three steps could improve the financial services environment in distressed communities: enhance collection of transaction data and increase enforcement of fair lending and consumer protection; create greater competition by improving range of available products and services; increase consumer awareness. |
| Clark and Gaillard (2003) | "RISE Capital Market Report: The Double Bottom Line Private Equity Landscape in 2002-2003" | Presents findings from surveys aimed to understand the emerging financial market for early-stage social and environmental private equity investing in the United States. | Surveyed funds invested for financial, as well as social or environmental, return; social return included the development of EDM | Perhaps the greatest barrier to the growth and success of the double bottom line capital market is the lack of consistent and reliable financial return data. | An effective way to counter the perception that financial return is sacrificed for social return is for double bottom line funds to adopt standard investment language and provide convincing data. |

## A.3: Value of Improved Data, cont.

| Author(s) | Title | Purpose | EDM Focus | Results | Implications |
|---|---|---|---|---|---|
| Frame, Srinivasan, and Woosely (2001) | "The Effect of Credit Scoring on Small-Business Lending" | Examines the effect of credit scoring on small-business lending for a sample of large U.S. banking organizations. | Small-business lending | Credit scoring is associated with an 8.4 percent increase in the portfolio share of small-business loans, or $4 billion per institution. | Credit scoring lowers information costs between borrowers and lenders, reducing the value of traditional, local-bank lending relationships. |
| Mester (1997) | "What's the Point of Credit Scoring?" | Reviews the potential impact of credit scoring on small-business lending. | Small-business lending | Credit scoring is already allowing large banks to expand into small-business lending, a market in which they have tended to be less active. | The likely result would be increased availability of lending to small businesses, and at better terms, to the extent that securitization allows better diversification of risk. |
| Peek and Rosengren (1998) | "The Evolution of Banking Lending to Small-business" | Analyzes the impact of banking consolidations and the use of credit-scoring models on the extent and type of small-business lending. | Small-business lending | The major area of increased lending by larger banking institutions has been in the under-$100,000 loan category. | Consolidations and the use of credit scoring are likely to result in the availability of lower-cost options to small-business borrowers. |

| Author(s) | Title | Purpose | EDM Focus | Results | Implications |
|---|---|---|---|---|---|
| U.S. Small Business Administration, Office of Advocacy (2005) | "Small-business and Micro Business Lending in the United States, for Data Years 2002–2003" | Reviews bank lending activities in 2002–2003 as recorded in call reports and CRA reports. | Lending in low- or moderate-income areas | Small-business lending was slower from July 2001 to June 2002 than during the previous year. The smallest loans showed the least activity. | Banks report CRA lending data in aggregate only by the size of the loan. Research and investment analysis would be enhanced if more detailed data were made available. |
| Wasserman (2000) | "Mining Data" | Details how data-mining programs allow businesses to analyze greater amounts of data faster and potentially more efficiently. | Small-business lending | Data mining can uncover lucrative opportunities for a variety of industries, but the data must be relevant, accurate, and complete. | If data on EDM businesses were more robust, accurate, and available (privacy issues overcome), investment and lending institutions would be better able to identify attractive investment opportunities in less time and for less money. |

## A.4: Proposed Data Solutions

| Author(s) | Title | Purpose | EDM Focus | Results | Implications |
|---|---|---|---|---|---|
| Afshar (2005) | "Use of Alternative Credit Data Offers Promise, Raises Issues" | Looks at some initiatives for using alternative credit data and their prospective benefits. | Lending to minorities, low-income individuals, and others with insufficient credit information | Credit evaluation systems that make use of alternative transaction data have the potential to provide millions of individuals with limited credit data greater access to credit markets. | The development of new credit evaluation systems is market-driven. However, it may prove necessary for the public sector to promote voluntary reporting and ensure the use of alternative credit data serves to benefit and not harm consumers. |
| DeYoung, Glennon, Nigro (2006) | "Borrower-Lender Distance, Credit Scoring, and the Performance of Small-Business Loans" | Tests the loan-default implications for a sample of SBA 7(a) loans. | Small businesses | Increased borrower-lender distance and credit scoring each contributes to greater loan defaults. However, credit scoring dampens the harmful effect of distance lending. | In instances of larger lender-borrower distance, use of credit scoring can serve to reduce the risk of default. |
| Hawke (2001) | "Growing Diverse Banking Markets: Going Beyond Traditional Measures" | Outlines initiatives to stimulate bankers, community organizations, and government agencies to continue developing products and services that meet the financial needs of increasingly diverse communities. | Ethnic-minority households and businesses | The number of minority-owned businesses increased 168 percent, while revenues grew 343 percent and employment 362 percent. Only two-thirds of minority-owned businesses used credit. The home-ownership rate gap represents $600 billion in potential mortgages. | Focus on developing a method of combining census and private marketing data with nontraditional sources to develop a more accurate picture of the economic strength of neighborhoods. |

| Author(s) | Title | Purpose | EDM Focus | Results | Implications |
|---|---|---|---|---|---|
| Minority Business Development Agency (2004) | "Accelerating Job Creation and Economic Productivity: Expanding Financing Opportunities for Minority Businesses" | Reviews reasons for the lack of access to financing of minority-owned businesses and makes recommendations to improve financing options. | Minority-owned business financing | Minority businesses have trouble accessing financing because: they include small firm size, predominance of service businesses, consolidation of financial institutions, and lack of investment performance information. | There is a need to develop additional information on minority businesses and for the federal government to make existing data more readily available. |
| U.S. Small Business Administration, Office of Advocacy (2004) | "The Small-Business Economy: A Report to the President" | Reviews the state of small business in the United States in 2003. | Small businesses | In 2003, the overall economic indicators improved as the recovery gained momentum. Small-businesses led the way, but continued growth requires an environment that fosters more small-business activity. | Recommendations include broadening the understanding of small-business databases and improving data sources related to small-business. |
| Weissbourd (2002) | "Banking on Technology: Expanding Financial Markets and Economic Opportunity" | Analyzes the effects of technology on the financial services industry and identifies its implications for expanding economic opportunity for lower-income consumers. | Lending in low-income areas | Technological change is creating opportunities for financial services companies to bring lower-income consumers into the economic mainstream. | Systems for capturing and sharing market data on lower-income populations remain undeveloped, preventing traditional institutions from developing customized products. Catalytic support from government, philanthropic, and other leadership organizations is needed. |

## A.4: Proposed Data Solutions, cont.

| Author(s) | Title | Purpose | EDM Focus | Results | Implications |
|---|---|---|---|---|---|
| Yago, Ford and Gordon (2000) | "Economic Prosperity, Women and Access to Credit: Best Practices in the Financial Markets" | Examines financing strategies that have increased access to capital for women starting or building service, technology and other noncollateral-based businesses. | Investments in women-owned businesses | Successful lending programs at leading financial institutions could be copied to expand the supply of capital available to women-owned businesses. | Recommendations to increase the flow of capital to women-owned businesses include: amend Federal Reserve Regulation B, create new credit-scoring models, implement a national capital access program, exploit securitization, and institutionalize national surveys of business owners. |
| Yago, Zeidman, and Schmidt (2003) | "Creating Capital, Jobs and Domestic Wealth in Emerging Domestic Markets: Financial Technology Transfer to Low-Income Communities" | Proposes steps to resolve the EDM capital gap. | Businesses owned by an ethnic minority or a woman, or located in a low- or moderate-income area | Traditional sources of EDM capital—government programs and philanthropic donors—must be augmented with private capital. | Private capital could be attracted through financial innovation and improved data sources. |

## A.5: Additional Literature

| Author(s) | Title | Purpose | EDM Focus | Results | Implications |
|---|---|---|---|---|---|
| Bitler, Robb and Wolken (2001) | "Financial Services Used by Small-businesses: Evidence from the 1998 Survey of Small-business Finances" | Provides information on credit accessibility for small businesses, their use of financial services, and the sources of those services. | Ethnic-owned and female-owned small businesses | The 1998 Survey of Small-Business Finance indicates an increasing number of female- and minority-owned businesses, as well as differences in the use of credit by small businesses. | Explaining the factors that affect small-business financing requires a rigorous analytical framework that accounts for the financial characteristics of borrowers and the markets in which they operate and can be achieved by working with the complete data set. |
| Boston Consulting Group (2005) | "The New Agenda for Minority Business Development" | Assesses the development of minority-owned business in the United States. | Minority-owned businesses | Only large minority-owned businesses can create the kind of growth needed to invigorate minority communities, inner-city markets, minority entrepreneurs and business leaders, and both the local and national economies. | Government must recognize the critical importance of minority business in economic development and foster the growth of not just small businesses, but those companies of size and scale that are positioned in growth industries. |
| Moy and Okagaki (2001) | "Changing Capital Markets and Their Implications for Community Development Finance" | Explores where the community development field needs to be in order to have an impact in the new economic and financial world. | Community Development Finance Institutions | As CDFIs move forward, three overarching points stand out: (1) the issues of industry structure remain; (2) today's retail financial institutions are supported by a highly developed infrastructure, (3) CDFIs need to innovate in conjunction with the mainstream financial industry, not in isolation. | Industry retooling along these lines should be explored as an alternative to the more incremental approaches (e.g., demonstration and replication of best practices) more commonly proposed to build the field. |

## B: EDM Data Matrix

| Data source | Database overview | | | | | | Characteristics of individual[2] | | |
|---|---|---|---|---|---|---|---|---|---|
| | Survey unit | Survey unit details | Number of units surveyed | Type of institution[1] | Availability | Earliest year and frequency | Race / ethnicity | Gender | Geographic location |
| ING Gazelle Index | Business | Business | 350 | Financial institution / fund | Data available for download free on web site or can be viewed by section | 2002, Quarterly | Y | Y | Y |
| Bank of America | Business | Business | Not disclosed | Financial institution / fund | Private | Not disclosed | N | Y | Y |
| Citigroup | Business | Business | Not disclosed | Financial institution / fund | Private | Not disclosed | N | Y | Y |
| East West Bank | Business | Business | Not disclosed | Financial institution / fund | Private | Not disclosed | N | Y | Y |
| Wells Fargo Community Development Corporation | Business | Business | Approximately 100 | Financial institution / fund | Private | 2001, Frequency varies | Y | Y | Y, ZIP code (not for all) |
| Washington Mutual | Business | Business | Not disclosed | Financial institution / fund | Private | Not disclosed | N | Y | Y |
| Union Bank Woman- / Minority-Owned Business Financing | Business | Business | 1,000s | Financial institution / fund | Private | 1993, Annual | Y | Y | Y |
| Merrill Lynch Community Development Group | Business | Business | Approximately 400 | Financial institution / fund | Private | 2002, Annual | N | N | Y, Address |
| CalPERS California Initiative | Business | Business | 68 with data; 83 invested in | Financial institution / fund | Aggregate data is publically disclosed | 2001, Annual | Y | Y | Y, ZIP codes |

[1] "Type of Institution" refers to the data source, not the survey unit.

[2] When the survey unit is "transaction," this data is available at the transaction level. When the survey unit is not transaction, this data may be aggregated (e.g., percent of portfolio that is a certain race/ethnicity) or at the individual level.

| Characteristics of business[2] | | | | Characteristics of financing | | | | Performance of financing | | |
|---|---|---|---|---|---|---|---|---|---|---|
| LMI location | Age of business | Number of employees | Financial information | Type of financing | Financing amount | Cost of financing | Other terms of financing | Rate of return | Rate of default | Social return |
| N | Y | Y | N | N | N | N | N | N | N | Y, jobs created |
| Y | Y | N | Y | Y | Y | Y | Y | Y | Y | N |
| Y | Y | Not disclosed | Y | Y | Y | Y | Y | Y | Y | N |
| Y | Y | Not disclosed | Y | Y | Y | Y | Y | Y | Y | N |
| Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | N, Jobs retained/created |
| Y | Y | * | Y | Y | Y | Y | Y | Y | Y | N |
| N | Y | N | Y, financial statements | Y, debt | Y | Y | Y, collateral | Y | Y | N |
| Y | Y | Y | Y, financial statements | Y, debt | Y | Y | Y | Y | Y | N |
| Y | N | Y | Y, net gain (loss) | Y | Y | N | Y | Y, IRR | Y | Y, jobs created |

## B: EDM Data Matrix, cont.

| Data source | Database overview | | | | | | Characteristics of individual[2] | | |
|---|---|---|---|---|---|---|---|---|---|
| | Survey unit | Survey unit details | Number of units surveyed | Type of institution[1] | Availability | Earliest year and frequency | Race / ethnicity | Gender | Geographic location |
| US Bank ¡Capital! Loan Program | Business | Business | Not disclosed | Financial institution / fund | Private | Not disclosed | Y | N | Y, ZIP code |
| US Bank Lending Assistance Program | Business | Business | Not disclosed | Financial institution / fund | Private | Not disclosed | N | N | Y, ZIP code |
| Bank of America Capital Access Fund and UNC Center for Community Capitalism | Business and Fund | Private equity funds and the businesses | 15 to 20 private equity funds (200 to 400 investments in companies) | Financial institution / fund | Still in development | 2008 | Y | Y | Y |
| Allied Capital Business Loan Express | Transaction | Transaction | over 5,000 transactions | Financial institution / fund | Private | 1994 | Y | Y | Y |
| SBA 7(a) Loan Program | Business | 7(a) loan recipients - Small, for-profit businesses (size limit varies with industry) | Approximately 200,000 (7(a) & 504 combined) | Government agency | Free online (aggregated by city), more detailed available by request | 1996, Annual | Y | Y | Y, city or county |
| SBA 504 Loan Program | Business | Business | Approximately 200,000 (7(a) & 504 combined) | Government agency | Free online (aggregated by city), more detailed available by request | 1996, Annual | Y | Y | Y, city or county |
| SBA & National Community Reinvestment Coalition (NCRC) Community Express Loans | Business | Community Express borrowers - minority, women, and veteran-owned businesses in lower income areas | Approximately 17,000 | Government agency | Captured in 7(a) database; Can obtain separate by request to NCRC or SBA | 1999, Quarterly | Y | Y | Y, city, state, or Census tract |
| U.S. Census Bureau Characteristics of Business Owners (CBO) | Business | Establishments | 116,557 | Government agency | Available online for free download or ordered online by CD | 1982, Every 5 years, discontinued in 1992 | N | Y | Y |
| U.S. Census Bureau Survey of Minority-Owned Business Enterprises (SMOBE) | Business | Firms and Establishments | 3 million | Government agency | Data available for download free on website | 1992, Every 5 years; Became SBO after 1997 | Y | Y | Y, state, county, MSA, and city |

[1] "Type of Institution" refers to the data source, not the survey unit.

[2] When the survey unit is "transaction," this data is available at the transaction level. When the survey unit is not transaction, this data may be aggregated (e.g., percent of portfolio that is a certain race/ethnicity) or at the individual level.

| Characteristics of business[2] | | | | Characteristics of financing | | | | Performance of financing | | |
|---|---|---|---|---|---|---|---|---|---|---|
| LMI location | Age of business | Number of employees | Financial information | Type of financing | Financing amount | Cost of financing | Other terms of financing | Rate of return | Rate of default | Social return |
| N | Y, for current ownership | N | Y, sales, net income, and cash | Y | Y | Y | Y | Y | Y | N |
| N | Y, for current ownership | N | Y, sales, net income, and cash | Y | Y | Y | Y | Y | Y | N |
| Y | Y | Y | Y, fund and business | Y | Y | Y | Y | Y | Y, fund | Y, jobs created |
| N | Y | Y | Y | Y | Y | Y | Y | Y | Y | N |
| N | Y, not consistent | Y, for recent loans | Y, for recent loans | Y | Y | Y | Y | Y, individual status or aggregate return | Y | N |
| N | Y, not consistent | Y, for recent loans | Y, for recent loans | Y | Y | Y | Y | Y, individual status or aggregate return | Y | N |
| Y | N | N | Y, For recent loans | Y | Y | Y | Y | Y | Y | N |
| N | Y | Y | Y, receipts and profits | Y | Y | N | N | N | N | N |
| N | N | Y | Y, sales and payroll | N | N | N | N | N | N | Y, jobs created |

## B: EDM Data Matrix, cont.

| Data source | Database overview | | | | | | Characteristics of individual[2] | | |
|---|---|---|---|---|---|---|---|---|---|
| | Survey unit | Survey unit details | Number of units surveyed | Type of institution[1] | Availability | Earliest year and frequency | Race / ethnicity | Gender | Geographic location |
| Board of Governors of the Federal Reserve System Survey of Small Business Finances (SSBF) | Business | Firms with fewer than 500 full and part-time employees (including owners working in the firm) | 3,200 to 4,600 (exact number varies with year) | Government agency | Free online for 1987, 1993, 1998, and 2003 | 1987, About every 5 years (1987, 1993, 1998, 2003) | Y | Y | Y, not on public file other than census division |
| U.S. Census Bureau Non-Employer Statistics | Business | Firms with no employees, $1,000+ sales, file schedule C, 1065, 1120 series | 17.5 million | Government agency | Data available for download free on website | 1997, Annual | N | N | Yes, MSA, county, and state |
| Minority Business and Development Agency (MBDA) Member Data | Business | MBDA members (minority-owned businesses) | Not disclosed | Government agency | Not disclosed | 2005 | Y | N | Y |
| SBA Microloan Program | Business | Microloan recipients - For Profit businesses (generally less than 5 employees) | Approximately 24,000 | Government agency | Available by request | 1992, Annual | Y | Y | Y |
| U.S. Department of Housing and Urban Development (HUD) Economic Development Funding Database (CDBG, Section 108, and EDI/BEDI) | Business | Private Businesses and Local Officials | A Sample of 900 Businesses and 51 Communities | Government agency | Report available for free download. Data not currently available. | Data analyzed in paper from 1994-1999 | Y | N | Y |
| U.S. Census Bureau Survey of Business Owners and Self-Employed Persons (SBO) | Business | Proprietorships, partnerships, corporations with receipts of $1,000+ | 23 million | Government agency | Partial data available for download online; final release in 3rd quarter of 2006 | 2002, Every 5 years; Superceded SMOBE | Y | Y | Y |
| SBA New Markets Venture Capital | Business | Small businesses invested in by a New Market Venture Capital Company | Approximately 55 (there are 6 New Market Venture Capital Companies) | Government agency | Generally not available to the public | 2001 | Y | Y | Y |
| SBA Small Business Investment Company (SBIC) | Business | Small businesses invested in by an SBIC | Approximately 35,000 | Government agency | Generally not available to the public | 1997, Annual | Y | Y | Y |

[1] "Type of Institution" refers to the data source, not the survey unit.

[2] When the survey unit is "transaction," this data is available at the transaction level. When the survey unit is not transaction, this data may be aggregated (e.g., percent of portfolio that is a certain race/ethnicity) or at the individual level.

| Characteristics of business[2] | | | | Characteristics of financing | | | | Performance of financing | | |
|---|---|---|---|---|---|---|---|---|---|---|
| LMI location | Age of business | Number of employees | Financial information | Type of financing | Financing amount | Cost of financing | Other terms of financing | Rate of return | Rate of default | Social return |
| N | Y | Y, including owners | Y | Y | Y | Y, limited to most recent loan only | Y | Y, return on assets or equity can be calculated from balance sheet | N, know if late on payments in past 3 years and if firm / owner filed for bankruptcy in past 7 years | N |
| N | N | Y | Y, Receipts and payroll | N | N | N | N | N | N | N |
| N | N | Y | Y | Not disclosed | Not disclosed | Not disclosed | Not disclosed | Not disclosed | Not disclosed | Not disclosed |
| N | Y | Y | Y | Y | Y | Y | Y | Y | Y | N |
| Y | Y, distinguishes between businesses in first year and established businesses | Y | Y | Y | Y | Y | Y | Y | Y | Y, jobs created |
| N | Y | Y | Y, sales | N | N | N | N | N | N | N |
| Y, beginning in 1998 | Y | Y, incomplete and unreliable | Y, incomplete and unreliable | Y | Y | Y | N | N | N | N |
| Y, beginning in 1998 | Y | Y, incomplete and unreliable | Y, incomplete and unreliable | Y | Y | Y | N | N | N | N |

## B: EDM Data Matrix, cont.

| Data source | Database overview | | | | | | Characteristics of individual[2] | | |
|---|---|---|---|---|---|---|---|---|---|
| | Survey unit | Survey unit details | Number of units surveyed | Type of institution[1] | Availability | Earliest year and frequency | Race / ethnicity | Gender | Geographic location |
| Federal Reserve Board Flow of Funds Accounts | Business | Nonfarm, noncorporate businesses | Aggregate of all corporations' IRS returns | Government agency | Available online for download | 1945, Quarterly | N | N | N |
| Board of Governors of the Federal Reserve System Survey of Consumer Finances (SCF) | Individual | Randomly selected family units; head of household interviewed | 4500 (exact number varies) | Government agency | Free online | 2004; Every 3 years since 1962 | Y | Y | Y |
| U.S. Census Bureau for the Bureau of Labor Statistics (BLS) Current Population Survey (CPS) | Individual | Households | Approximately 50,000 | Government agency | Data available for download free on website | 1942, Monthly | Y | Y | Y, ZIP code |
| U.S. Department of Commerce and University of Michigan Panel Study of Income Dynamics (PSID) | Individual | 8,000 U.S. households | 7,400 | Government agency | Available for download free online | 1968 | Y | Y | Y |
| U.S. Department of Labor National Longitudinal Surveys (NLS) | Individual | Age and Gender Cohorts | 5,000 to 15,000 | Government agency | Data available online for free, or ordered by CD for small fee | 1969, 1979, 1997 | Y | Y | Y, regions only |
| U.S. Census Bureau Survey of Income and Program Participation (SIPP) | Individual | All household members 15+ years | 14,000 to 36,700 | Government agency | Data available for download free on website | 1984, Frequency varies | Y | Y | Y, metro and state |
| Federal Deposit Insurance Company (FDIC) Call Reports | Lender | Banks | Approximately 8,000 | Government agency | Free online - Data aggregated by bank | 1998, Quarterly (electronic version) | N | N | Y |
| CDFI Fund Community Investment Impact System (CIIS) | Lender | CDEs and CDFIs | Approximately 300 | Government agency | Data not currently available to the public; plans to make data available in the future | 2004, Annual | Y | Y | Y |
| Federal Financial institution / funds Examination Council Community Reinvestment Act (CRA) Reports | Lender | State banks, national banks, and large saving associations ($250M+) | Approximately 2,000 | Government agency | Free online - Data aggregated by census tract level | 1996, Annual | N | N | Y, state, county, and MSA |

[1] "Type of Institution" refers to the data source, not the survey unit.

[2] When the survey unit is "transaction," this data is available at the transaction level. When the survey unit is not transaction, this data may be aggregated (e.g., percent of portfolio that is a certain race/ethnicity) or at the individual level.

| Characteristics of business[2] | | | | Characteristics of financing | | | | Performance of financing | | |
|---|---|---|---|---|---|---|---|---|---|---|
| LMI location | Age of business | Number of employees | Financial information | Type of financing | Financing amount | Cost of financing | Other terms of financing | Rate of return | Rate of default | Social return |
| N | N | N | Y, aggregate | Y, aggregate | Y, aggregate | N | N | N | N | N |
| N | N | N | Y, limited to privately held businesses | Y | Y | Y | Y | N | N | N |
| N | N | N | Y, weekly earnings | N | N | N | N | N | N | N |
| Y | Y | N | N | N | N | N | N | N | N | N |
| N | Y | N | N | N | N | N | N | N | N | N |
| N | N | N | Y | N | N | N | N | N | N | N |
| N | N | N | Y | Y | Y | N | Y | N | Y | N |
| Y | Y | Y | Y, revenues | Y | Y | Y | Y | N | Y | Y, jobs created, housing developed, and technical assistance provided |
| Y | N | N | Y, census tract | Y | Y | N | N | N | N | N |

## B: EDM Data Matrix, cont.

| Data source | Database overview | | | | | | Characteristics of individual[2] | | |
|---|---|---|---|---|---|---|---|---|---|
| | Survey unit | Survey unit details | Number of units surveyed | Type of institution[1] | Availability | Earliest year and frequency | Race / ethnicity | Gender | Geographic location |
| CDFI Fund Community Investment Impact System (CIIS) | Lender | CDEs and CDFIs | Approximately 300 | Government agency | Data not currently available to the public; plans to make data available in the future | 2004, Annual | Y | Y | Y |
| Federal Financial institution / funds Examination Council Community Reinvestment Act (CRA) Reports | Lender | State banks, national banks, and large saving associations ($250M+) | Approximately 2,000 | Government agency | Free online - Data aggregated by census tract level | 1996, Annual | N | N | Y, state, county, and MSA |
| Dun & Bradstreet (D&B) | Business | Companies | 7.9 million | Information company | For purchase - Price based on the number of records | 1841; 1969 electronic records, Monthly | Y, If offered by owner | Y, If offered by owner | Y |
| VentureOne | Business | Venture-backed firms | Approximately 18,000 U.S. firms | Information company | By subscription only | 1987, Quarterly | N | Y | Y, city |
| Experian | Individual | Not disclosed | A file for every credit active adult in the country | Information company | For sale based on permissable purpose as governed by the FTC | Not disclosed | N | N | Y |
| TransUnion | Individual | Credit tradeline history, public records | A file for every credit active adult in the country | Information company | For sale based on permissable purpose as governed by the FTC | Online file updated daily, only the current version is available | N | N | Y, street address |
| Equifax | Individual | Not disclosed | A file for every credit active adult in the country | Information company | For sale based on permissable purpose as governed by the FTC | Not disclosed | N | N | Y |
| Fair Isaac Small Business Scoring Service | Transaction | Individual transactions | Approximately 1 million | Information company | Private | 1990s, Regularly | N | N | Y |

[1] "Type of Institution" refers to the data source, not the survey unit.

[2] When the survey unit is "transaction," this data is available at the transaction level. When the survey unit is not transaction, this data may be aggregated (e.g., percent of portfolio that is a certain race/ethnicity) or at the individual level.

| Characteristics of business[2] | | | | Characteristics of financing | | | | Performance of financing | | |
|---|---|---|---|---|---|---|---|---|---|---|
| LMI location | Age of business | Number of employees | Financial information | Type of financing | Financing amount | Cost of financing | Other terms of financing | Rate of return | Rate of default | Social return |
| Y | Y | Y | Y, revenues | Y | Y | Y | Y | N | Y | Y, jobs created, housing developed, and technical assistance provided |
| Y | N | N | Y, census tract | Y | Y | N | N | N | N | N |
| N | Y | Y | Y | N | N | N | N | N | N | N |
| N | Y | Y | Y | Y | Y | N | N | N | N | N |
| N | Y | N | Y | Y | Y | N | Y | N | Y | N |
| N | Y | N | Y | Y | Y | N | Y | N | Y | N |
| N | Y | N | Y | Y | Y | N | Y | N | Y | N |
| N | Y | Y, if transaction has business report from D&B or Experian | Y | Y | Y | N | N | N | Y | N |

## B: EDM Data Matrix, cont.

| Data source | Database overview | | | | | | Characteristics of individual[2] | | |
|---|---|---|---|---|---|---|---|---|---|
| | Survey unit | Survey unit details | Number of units surveyed | Type of institution[1] | Availability | Earliest year and frequency | Race / ethnicity | Gender | Geographic location |
| BancLab DataBanc | Transaction | Small business loans | Over 700,000 | Information company | For purchase (with analysis) | 1983, Annual | N | N | Y, Varies |
| VentureXpert | Transaction | Venture capital funds | Approximately 7,500 | Information company | For purchase | 1978, Quarterly | N | N | Y, ZIP code and MSA |
| Xigi.net | Transaction | High-performing social enterprises | Various | Information company | In development. Available online | 2006 | In development | In development | In develop-ment |
| Community Development Technologies Center/ Merill Lynch Southern California Minority Business Atlas | Business | Business owners | 1,200 | Nonprofit / Research | Aggregated data available online | 1999-2000 | Y | Y | Y, county |
| Kauffman Financial and Business Research Database | Business | Companies | Approximately 900,000 for demographic information; approximately 300,000 for financial information | Nonprofit / Research | Up to 15,000 records available upon request | 1983, Annual | Y, Minority owned/Not minority Owned | Y, CEO/Owner | Y, addresses |
| Initiative for a Competitive Inner City (ICICI) Inner City 100 | Business | Companies | 445 companies | Nonprofit / Research | Limited data made public online and in Inc. Magazine. Remainder is private | 1999, Annual | Y | Y | Y |
| RISE/Investors' Circle/Social Venture Network Social Venture Survey | Business | For-profit social ventures less than 30 years old | 212 | Nonprofit / Research | Not yet available | 2003 | N | N | Y, ZIP code |
| Kauffman Index of Entrepreneurial Activity | Business | Individual business owners | 7,500,000 total sample size | Nonprofit / Research | Available by request | 1996, Annual | Y | Y | Y, regions only |
| ICICI Inner City and MSA Start-Up Data | Business | Inner city and MSA companies | 14.8 million companies (270,000 start-ups) | Nonprofit / Research | Available by request; summary available online | 2005, Annual | N | N | Y, MSA |

[1] "Type of Institution" refers to the data source, not the survey unit.

[2] When the survey unit is "transaction," this data is available at the transaction level. When the survey unit is not transaction, this data may be aggregated (e.g., percent of portfolio that is a certain race/ethnicity) or at the individual level.

| Characteristics of business[2] | | | | Characteristics of financing | | | | Performance of financing | | |
|---|---|---|---|---|---|---|---|---|---|---|
| LMI location | Age of business | Number of employees | Financial information | Type of financing | Financing amount | Cost of financing | Other terms of financing | Rate of return | Rate of default | Social return |
| Y | Y | Y | Y | Y | Y | Y | N | Y | Y | N |
| N | Y | N | Y | Y | Y | Y, management fee | Y , average investment size, round, etc. | Y | N | N |
| In develop-ment | In develop-ment | In develop-ment | In develop-ment | In develop-ment | In develop-ment | In develop-ment | In development | In develop-ment | In develop-ment | In develop-ment |
| N | Y | Y | Y, sales | Y, financing source | N | N | Y, types of financing needed | N | N | N |
| N | Y, as of current manageme nt | Y | Y | N | N | N | N | N | N | N |
| N | Y | Y | Y | Y | N | N | N | N | N | N |
| N | Y | Y | Y, revenues and profits | Y | Y | N | N | N | N | Y |
| N | Y, measures number of newly created businesses | N | N | N | N | N | N | N | N | N |
| Y, internal definition of LMI | Y | Y | Y, sales | N | N | N | N | N | N | N |

## B: EDM Data Matrix, cont.

| Data source | Database overview | | | | | | Characteristics of individual[2] | | |
|---|---|---|---|---|---|---|---|---|---|
| | Survey unit | Survey unit details | Number of units surveyed | Type of institution[1] | Availability | Earliest year and frequency | Race / ethnicity | Gender | Geographic location |
| ICICI Financial Performance of Inner City Companies | Business | Inner city companies | 900,000 | Non-profit / Research | Available by request; summary available online | 2001, Annual | N | N | Y, MSA or ZIP code |
| ICICI Volume of Private Equity Flows into Inner Cities | Business | Inner city companies receiving private equity funds | 30,000 | Non-profit / Research | Available by request; summary available online | 2001, Annual | N | N | Y, ZIP code |
| Aspen Institute MicroTest Outcomes Data Set | Business | Microenterprises in underprivileged communities | Sample of approximately 800 each year | Non-profit / Research | Private | 2003, Annual | Y | Y | N |
| Kauffman Firm Survey | Business | New businesses Started operations in 2004 | 5,000 | Non-profit / Research | Still in development | 2004, Annual for 4 years | Y | Y | Y |
| Brookings Institution Urban RPM Investor | Business | Urban retail investors and lenders | Undetermined | Non-profit / Research | Still in development | The dataset will include 10-15 years prior to the current year | N | N | Y, ZIP code |
| Brookings Institution Urban RPM | Business | Urban retailers | Undetermined | Non-profit / Research | Still in development | The dataset will include 10-15 years prior to the current year | Y | Y | Y, ZIP code |
| NMSDC | Business | Minority-owned businesses | Approximately 15,000 | Non-profit / Research | Available only to dues-paying national corporate members | 1974, Monthly | Y | Y | Y, ZIP code |
| Kauffman Foundation Panel Study of Entrepreneurial Dynamics (PSED) | Individual | Nascent Entrepreneurs | 830 (there was some attrition in follow-up surveys) | Non-profit / Research | Free online | 1998, Four years of data collected over five years | Y | Y | Y |

[1] "Type of Institution" refers to the data source, not the survey unit.

[2] When the survey unit is "transaction," this data is available at the transaction level. When the survey unit is not transaction, this data may be aggregated (e.g., percent of portfolio that is a certain race/ethnicity) or at the individual level.

| Characteristics of business[2] | | | | Characteristics of financing | | | | Performance of financing | | | Interest in data consortium[3] | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| LMI location | Age of business | Number of employees | Financial information | Type of financing | Financing amount | Cost of financing | Other terms of financing | Rate of return | Rate of default | Social return | Willing to share data | Interest in consortium data |
| Y, internal definition of LMI | Y | N | Y, sales and income | N | N | N | N | N | N | N | Y | Y |
| Y, internal definition of LMI | Y | N | Y | Y, private equity | Y | N | N | N | N | N | Y | Y |
| N | Y | Y | Y, revenues | Y | Y, aggregate loans from program partici-pants | N | N | N | N | Y, effect on owner's house-hold | Y, only if approval and privacy concerns are met | Y |
| Y | Y | Y | Y | Y | Y | N | N | N | N | N | Y | Y |
| Y | N | N | Y | Y | Y | Y | Y | Y | Y | N | Y, only with approval of members | Y |
| Y | Y | Y | Y | N | N | N | N | N | N | N | Y, only with approval of members | Y |
| Y | Y | Y | Y, Limited | N | N | N | N | N | N | N | Y | Y |
| N | Y | Y | Y | Y | Y | N | N | N | N | N | Y | N |

## B: EDM Data Matrix, cont.

| Data source | Database overview | | | | | | Characteristics of individual[2] | | |
|---|---|---|---|---|---|---|---|---|---|
| | Survey unit | Survey unit details | Number of units surveyed | Type of institution[1] | Availability | Earliest year and frequency | Race / ethnicity | Gender | Geographic location |
| CDFI Data Project (CDP), sponsored by the Ford Foundation and MacArthur Foundation | Lender | Community Development Finance Institutions (CDFIs) | Approximately 500 | Nonprofit / Research | 750; select aggregate data available online | 2001, Annual | Y | Y | Y |
| Calvert Foundation Profiles Database | Lender | Community Investment Organization | Approximately 71 (investing in small businesses and affordable housing) | Nonprofit / Research | Some data available free online; more robust data for sale | 2000, Annual | Y, Staff & board of the fund plus percent of fund's underlying investments | Y, Staff & board of the fund plus percent of fund's underlying investments | Y, address and targeted region |
| RISE Double Bottom Line Investor Survey | Transaction | Private equity funds | 59 | Nonprofit / Research | Not yet available | 2002 | Y | Y | Y, ZIP code |
| National Minority Supplier Development Council (NMSDC) and Business Consortium Fund (BCF Capital) | Business | Minority-owned business | 15,000 | Nonprofit / Research | Some data available free online with most by approved request only | 1985, Annual | Y | Y | Y, city |
| Social Compact Neighborhood Market DrillDown | Individual | Low-income neighborhoods | 101 low-income communities over 6 years | Nonprofit / Research | Free online (in pdf report format, some information disaggregated to the block group level), more detailed information available by request | Snapshot profile but can be updated annually. | Y | Y, where possible | Y, down to address/parcel level analysis |
| Community Development Venture Capital Alliance (CDVCA) Transaction Database | Business | Transaction-level data from CDVC fund investments | 696 | Trade Association | Summary Information In CDVCA Report on the Industry | 2005, Annual | N | N | N |
| National Federation of Independent Business (NFIB) Small Business Economic Trends (SBET) | Business | Members of NFIB organization | 600,000 | Trade Association | Private | 1973, Quarterly and monthly | N | N | Y |

[1] "Type of Institution" refers to the data source, not the survey unit.

[2] When the survey unit is "transaction," this data is available at the transaction level. When the survey unit is not transaction, this data may be aggregated (e.g., percent of portfolio that is a certain race/ethnicity) or at the individual level.

| Characteristics of business[2] | | | | Characteristics of financing | | | | Performance of financing | | |
|---|---|---|---|---|---|---|---|---|---|---|
| LMI location | Age of business | Number of employees | Financial information | Type of financing | Financing amount | Cost of financing | Other terms of financing | Rate of return | Rate of default | Social return |
| Y | N, year financing started | Y | Y | Y | Y | N, occasion-ally | Y | Y | Y | Y, jobs created, housing units created, etc. |
| N | Y | Y | Y | Y, debt | Y | N | N | Y, perform-ance of fund and invest-ment in fund | Y, perform-ance of fund and invest-ment in fund | Y, not collected across all funds |
| N | N | Y | Y, managed capital | Y | Y, managed capital | Y, target IRR and return hurdle | Y, average deal size | Y, IRR | Y | Y |
| N | Y | Y | Y, financial statements and five-year projections | Y, three years' worth | Y | Y | Y, guarantees and collateral | Y | Y | Y, jobs created |
| Y | Y, Not consistent | Y, where data is available | Y, in terms of access and buying power | N | N | N | N | N | N | N |
| Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y |
| N | Y | Y | Y | Y | Y | Y | N | N | N | N |

## B: EDM Data Matrix, cont.

| Data source | Database overview | | | | | | Characteristics of individual[2] | | |
|---|---|---|---|---|---|---|---|---|---|
| | Survey unit | Survey unit details | Number of units surveyed | Type of institution[1] | Availability | Earliest year and frequency | Race / ethnicity | Gender | Geographic location |
| National Federation of Independent Business (NFIB) and Gallup Organization Small Business Poll | Business | Nationally representative sample of small firms | Varies | Trade Association | Information available via website publications; data sets available for purchase | 8 reports annually since 2001 | N | Y | Y |
| Community Development Venture Capital Alliance (CDVCA) ROI Project | Lender | CDVC Funds | 20 | Trade Association | To be shared with CDVC industry | 2004-05, One time study | Y | Y | Y |
| Opportunity Finance Network CDFI Assessment and Rating System (CARS) | Lender | Community Development Finance Institutions (CDFIs) | Currently 12; plans for more than 30 by YE 2006 | Trade Association | $15,000 for full subscription, $2,500 per CDFI | 2004, Annual (if purchased by CDFI) | Y, For some | Y, For some | Y, for some |
| Neighborhood Funders Group PRI Makers Network | Lender | Project-Related Investment (PRI) | Approximately 200 | Trade Association | Available to PRI Makers Network members only (PRI Funders and grantmakers only) | Spring 2006 | N | N | Y, state |
| National Association of Investment Companies (NAIC) and Wayne State University Venture Capital Fund Database | Lender | Venture capital funds making minority-oriented investments | 24 | Trade Association | Available for purchase (free for research purposes) | 2000 & 2003 | Y | Y | Y, ZIP code |

[1] "Type of Institution" refers to the data source, not the survey unit.

[2] When the survey unit is "transaction," this data is available at the transaction level. When the survey unit is not transaction, this data may be aggregated (e.g., percent of portfolio that is a certain race/ethnicity) or at the individual level.

| Characteristics of business[2] | | | | Characteristics of financing | | | | Performance of financing | | |
|---|---|---|---|---|---|---|---|---|---|---|
| LMI location | Age of business | Number of employees | Financial information | Type of financing | Financing amount | Cost of financing | Other terms of financing | Rate of return | Rate of default | Social return |
| N | Y, extend varies with survey | Y, extend varies with survey | Y, extend varies with survey | Y, extend varies with survey | Y, extend varies with survey | Y, extend varies with survey | Y, extend varies with survey | N | N | N |
| Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y |
| Y, for some | Y | Y, for some | Y | Y | Y, described in analysis | Y, described in analysis | Y, described in analysis | Y | Y | Y, Jobs created, housing units created, improved community conditions |
| Y | N | N | N | Y | Y | Y | Y, collateral, guarantee, etc. | Y | N | Y, wide variety of reported outcomes |
| N | Y | Y | Y | Y | Y | Y | N | Y | N | N |

# C: Research Questionnaire
# Increasing Market Capital to EDM/LMI Communities

The Milken Institute is an independent non-partisan economic think tank based in Santa Monica. Its Center for Emerging Domestic Markets (CEDM) supports the expansion of investment in traditionally undervalued and undercapitalized entrepreneurs, enterprises and communities in the United States Through funding from the Ford Foundation, we are conducting this survey to identify and map data pools from private-sector investors/ lenders, CED, nonprofits, government and regulators to assess feasibility and interest of a data consortium and encourage emerging-market data sharing.

**1. Do you currently collect data?**

**2a. For lenders: portfolio as a whole and individual loans**

a. Demographic data regarding borrower
   i. Ethnicity, gender, LMI, location, etc.
b. Non-demographic data regarding borrower
   i. Firm size, cash flows, etc.
c. Data regarding loan characteristics
   i. Amount, amortization, collateralization, interest rate
d. Data regarding performance
   i. Defaults

**2b. For equity funds**

ii. Demographic data regarding firm
iii. Non-demographic data regarding firm
   1. Firm size, cash flows, etc
iv. Data regarding investment, social impact
v. Data

**2c. For public governmental lender: portfolio as a whole and individual loans**

vi. Demographic data regarding borrower
   1. Ethnicity, gender, etc
vii. Non-demographic data regarding borrower
   1. Firm size, cash flows etc
viii. Data regarding loan characteristics
   1. Amount, amortization, collateralization, interest rate
ix. Data regarding performance
   1. Defaults

**2d. Research Organizations**

x. Non-demographic data regarding markets
   1. Firm size, cash flows, etc.

xi. Data regarding financing
   1. Amounts, rates, instruments

xii. Data regarding performance

**2e. For Trade Organizations and Other Nonprofits**

xiii. Non-demographic data regarding markets
   1. Firm size, cash flows, etc.

xiv. Data regarding financing
   1. Amounts, rates, instruments

xv. Data regarding performance

**3. What are the data primarily used for?**

**4. Is any part of your current database available beyond your organization?**

**5. Have you participated in prior data-sharing efforts? Which efforts, and what was your experience?**

**6. Would you be willing to share data? If so, under what conditions?**

**7. Is there any particular additional data or access to a specific organization's database that would benefit your organization?**

# D: Organizations Interested in the Data Consortium

## Organizations interested in contributing to the data consortium pending masking data

Aspen Institute
BancLab
Bank of America
Board of Governors of the Federal Reserve System
Brookings Institution
Business Consortium Fund (BCF Capital)
CalPERS
Calvert Foundation
CDFI Data Project
CDFI Fund
Center for Financial Services Innovation
Citibank
Community Development Venture Capital Alliance
Community Reinvestment Fund
Dun and Bradstreet
Federal Deposit Insurance Company
Federal Financial Institutions Examination Council
ING (Gazelle Index)
Initiative for a Competitive Inner City
Kauffman Foundation
Kenan-Flagler Business School (UNC)
Merrill Lynch
Minority Business and Development Agency
National Association of Investment Companies
National Community Capital Association
National Community Investment Fund
National Community Reinvestment Coalition
National Federation of Community Development Credit Unions
National Federation of Independent Businesses
National Minority Supplier Development Council
Neighborhood Funders Group
Pacific Community Ventures
Provenex/Rockefeller Foundation
Research Initiative on Social Entrepreneurship
Small Business Administration
Social Compact
Thomson Venture Economics
U.S. Census Bureau
U.S. Census Bureau for the Bureau of Labor Statistics
U.S. Department of Commerce and University of Michigan
U.S. Department of Housing and Urban Development
U.S. Department of Labor
VentureOne
Wall Street Without Walls
Washington Mutual
Wells Fargo

## Other organizations interested in a data consortium

America's Community Bankers
Center for Enterprise Development
PRI Makers
Credit Research Center, Georgetown University
Darden School of Management (UVa)
Fair, Isaac
F.B. Heron Foundation
Federal Reserve Bank of San Francisco
Federal Reserve Board of Governors
Foundation for Sustainable Development
Greenlining Institute
Independent Community Bankers of America
MacArthur Foundation
New America Alliance Institute
National Congress for Community Economic Development
NeighborhoodWorks America
Office of the Comptroller of the Currency
White House National Economic Council
Woodstock Institute

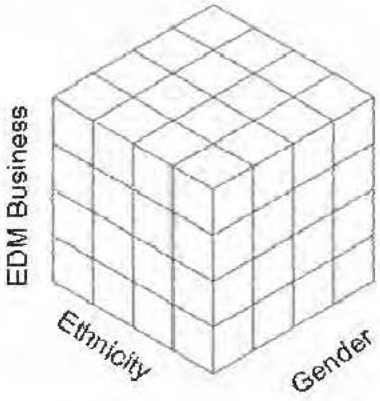
# E: Additional Database Formats and Model of Relational Database

As noted in the report, the relational database is recommended for the data consortium. However, two other options could be considered: dimensional and object.

## Dimensional Database

In contrast to a relational database, which stores data in a series of two-dimensional tables, the dimensional database represents key data entities as different dimensions. A simple example related to the consortium could be visually symbolized as a cube with the EDM business (identified by a unique number), gender, and ethnicity representing different dimensions. While the full database would have many more than three dimensions, figure 1 uses three for the sake of pictoral simplicity.
Sentence case

Figure 1: Three-dimensional database




There are several advantages to a dimensional database over a relational database. First, the multidimensional structure provides a more intelligent representation of the data. Instead of reducing the inter-relationships among the data to multiple two-dimensional tables, a dimensional database embeds them into a single structure more in line with our inherent perspective. It makes intuitive sense. The second and third advantages of a dimensional database are related to the first. It is easier to navigate a dimensional database and perform searches because long SQL queries pulling from multiple tables are not necessary. Easier navigation, furthermore, makes database maintenance easier. (Collins 2005).

Although dimensional databases seem superior, they are not always the best choice. First, "there is no inherent value in storing non-multidimensional data in a multidimensional database." (Collins 2005) As an example, consider a dataset comprised of the food eaten by three people at each meal for three days. A three-dimensional database with axes representing person, day, and meal would have a food item in each cell. The data is multidimensional.

Consortium data would not be multidimensional. If figure 2 had axes representing business, gender, and ethnicity, each business could be associated with a gender and an ethnicity, but gender and ethnicity would be independent. A given business would have sixteen cells (one business plus four ethnicities plus four genders, i. e., male, female, shared ownership, and not reported)—but only one would contain data. Fifteen would be empty.

Dimensional databases are not as common as relational databases and are more expensive to develop and maintain. Most organizations have greater experience using relational databases, and this familiarity would provide for easier use. Additionally, it is harder to find dimensional database developers and administrators.

## Object Database

A third option is an object database, which is based on object-oriented programming languages like Java and represents information as objects—a software bundle of variables and methods that perform actions on those variables or the variables in other objects. Rather than consisting of data values in rows and columns, an object database is comprised of objects which contain data. The objects can be stored, searched for, and retrieved like data in a traditional database. They can also, however, be acted upon like objects.

As an example, consider a database containing all the parts that make up a Honda Accord, a Toyota Camry, and a Ford Taurus. A relational database would have thousands of entries, one for each part. The user could run a query for all the parts of an Accord. An object database would have three entries, one for each car, and the user could run a query for the car itself.

Object databases offer several advantages over relational databases. Because the data contains programming language, it is theoretically easier to create a software package to work with it. Object databases are also more adept at handling complex data sets and provide for simpler, faster searches.

Despite the strengths of object databases, they are not the best option for the consortium. This is primarily because they are not widely used. In fact, there is no agreed-upon standard (Grehan 2005). Few database developers and administrators have experience with them, and consortium members would likely have far more difficulty using one.

**Exhibit 1: EDM Business Information**

| ID (primary key) | Bus. Name | Bus. Industry | Owner Ethnicity | Owner Gender | Bus. Street | Bus. State | Bus. City | Bus. Zip | Age of Bus. | No. of Employee | Annual Revenue | Net Income | Annual Growth | Bus. Status | Created Date | Updated Date |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | | | | | | | | | | | | | | | |
| 2 | | | | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | | | |
| 6 | | | | | | | | | | | | | | | | |
| 7 | | | | | | | | | | | | | | | | |
| 8 | | | | | | | | | | | | | | | | |
| 9 | | | | | | | | | | | | | | | | |
| 10 | | | | | | | | | | | | | | | | |
| 11 | | | | | | | | | | | | | | | | |
| 12 | | | | | | | | | | | | | | | | |
| 13 | | | | | | | | | | | | | | | | |
| 14 | | | | | | | | | | | | | | | | |
| 15 | | | | | | | | | | | | | | | | |
| 16 | | | | | | | | | | | | | | | | |
| 17 | | | | | | | | | | | | | | | | |
| 18 | | | | | | | | | | | | | | | | |
| 19 | | | | | | | | | | | | | | | | |
| 20 | | | | | | | | | | | | | | | | |
| 21 | | | | | | | | | | | | | | | | |

**Exhibit 2: EDM Lenders**

*SBA7(a) loan data included as example only*

| ID (primary key) | Bank | Bank Street | Bank City | Bank State | Bank Zip | # of Loans | Appv Gross | AppvSBA | SBA 504 | SBA 7(a) | Bank Status | Created Date | Updated Date |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1st Centennial Bancorp | 218 E State St | Redlands | CA | 92373 | 20 | $7,884,400 | $5,925,300 | N | Y | | | |
| 2 | 1st Choice Bancorp, Inc | 2310 Yale | Houston | TX | 77008 | 9 | $613,500 | $306,750 | N | Y | | | |
| 3 | 1st Constitution Bancorp | 2650 Rte. 130 | Cranbury | NJ | 08512 | 23 | $8,515,000 | $6,367,750 | N | Y | | | |
| 4 | 1st Natl Bank – Mcgregor | 401 S. Main St. | Mcgregor | TX | 76657 | 1 | $90,000 | $58,500 | N | Y | | | |
| 5 | 1st Natl Bank - Sterling City | 602 4th St. | Sterling city | TX | 76951 | 1 | $127,000 | $107,950 | N | Y | | | |
| 6 | 1st Pacific Bank Of California | 7728 Regents Rd., Ste. 503 | San Diego | CA | 92122 | 2 | $771,000 | $591,950 | N | Y | | | |
| 7 | 1st Source Corporation | 100 N. Michigan St. | South Bend | IN | 46601 | 92 | $9,506,800 | $5,917,725 | N | Y | | | |
| 8 | 1st United Bancorp Inc. | 741 U.S. Highway 1 | North Palm Beach | FL | 33408 | 7 | $6,790,000 | $5,067,500 | N | Y | | | |
| 9 | 1st United Bancorporation Inc | 120 2nd St. NW | Sidney | MT | 59270 | 2 | $66,000 | $33,000 | N | Y | | | |
| 10 | 215 Holding Co. | 215 S 11th St. | Minneapolis | MN | 55403 | 8 | $906,800 | $669,750 | N | Y | | | |
| 11 | 473 Broadway Holding Corp. | 473 Broaway | Saratoga Springs | NY | 12866 | 9 | $689,733 | $344,866 | N | Y | | | |
| 12 | A S I Fcu | 5508 Citrus Blvd. | Harahan | LA | 70123 | 4 | $378,000 | $321,300 | N | Y | | | |
| 13 | Abbybank | 401 E. Spruce St. | Abbotsford | WI | 54405 | 1 | $160,000 | $80,000 | N | Y | | | |
| 14 | Abc Bancorp Inc. | 24 Second Ave. SE | Moultrie | GA | 31768 | 2 | $720,000 | $550,000 | N | Y | | | |

**Exhibit 3: EDM Investment Information**

| ID (primary key) | Bus. ID (foreign key) | Bank ID (foreign key) | Investment Status | Financing Type | Financing Amount | Interest Rate | Collateral | Return | Payment Schedule | Created Date | Updated Date |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | 4 | | | | | | | | | |
| 2 | 1 | 8 | | | | | | | | | |
| 3 | 2 | 5 | | | | | | | | | |
| 4 | 3 | 5 | | | | | | | | | |
| 5 | 5 | 5 | | | | | | | | | |
| 6 | 4 | 2 | | | | | | | | | |
| 7 | 6 | 1 | | | | | | | | | |
| 8 | 7 | 14 | | | | | | | | | |
| 9 | 8 | 3 | | | | | | | | | |
| 10 | 9 | 3 | | | | | | | | | |
| 11 | 10 | 6 | | | | | | | | | |
| 12 | 11 | 10 | | | | | | | | | |
| 13 | 12 | 2 | | | | | | | | | |
| 14 | 13 | 9 | | | | | | | | | |
| 15 | 13 | 1 | | | | | | | | | |
| 16 | 14 | 12 | | | | | | | | | |
| 17 | 15 | 4 | | | | | | | | | |
| 18 | 16 | 4 | | | | | | | | | |
| 19 | 17 | 9 | | | | | | | | | |
| 20 | 18 | 11 | | | | | | | | | |

# F.1: Participants in the San Francisco Financial Innovations Lab

| | |
|---|---|
| AI Consulting, Latino.net | Richard Leza |
| Axis Consulting | Marcos Gonzalez |
| California State Teachers Retirement System | Richard Rose |
| California Economic Development Lending Initiative | George Williamson |
| Citigroup | Raul Medina |
| Citicorp | Malinder Bhan |
| City of San Francisco (Treasurer) | Susan Leal |
| Haas Sr. Fund | Pam David |
| Latino Community Foundation | Marcela Davidson Aviles |
| Milken Institute | Glenn Yago |
| Milken Institute | Betsy Zeidman |
| Mission Economic Development Corporation | Jose Corona |
| San Francisco Foundation | Sandra Hernandez |
| San Francisco Foundation | Anthony Tansimore |
| San Francisco Foundation | Monica Pressley |
| San Francisco Latino Chamber of Commerce | Richard Ventura |
| San Francisco Minority Business Development Agency | William Houston |
| San Francisco Minority Business Development Agency | Linda Marmolejo |
| San Francisco Small Business Development Corporation | Al Dixon |
| Springboard Enterprises | Karen Bixby |
| Union Bank | Maria Gallo |
| Wells Fargo Bank | Alex Solorzano |
| Wells Fargo Bank | Elisa Arevalo Boone |

# F.2: Participants in the Los Angeles Financial Innovations Lab

| | |
|---|---|
| Angell Foundation | Angel Roberson Daniels |
| Calvert Social Investment Foundation | Shari Berenbach |
| CEDLI | George Williamson |
| City of Los Angeles (Council member) | Eric Garcetti |
| Consultant | Ruben Sanchez |
| Countrywide | Raymond Hawkins |
| Los Angeles Department of Water & Power | John Chen |
| Los Angeles Department of Water & Power | Lillian Kawasaki |
| California Community Economic Development Association | Carol Gallant |
| First Bank and Trust | Scott Espeseth |
| Four Corners Capital Management | Ian Cudlipp |
| Jewish Community Foundation of Greater Los Angeles | Marvin Schotland |
| Los Angeles LDC | Michael Banner |
| Markstone Capital Group | Scott Gluck |
| Nathalie Hoffman & Associates | Nathalie Hoffman |
| New West Partners | Eric Natwig |
| Pacific Asian Consortium in Employment | Jackie Jones |
| Pension Consulting Alliance | Alan Emkin |
| Philanthropic Administration Inc. | Ann Van Dormolen |
| Rustic Canyon Partners | Thomas Unterman |
| SCOPE | Jennifer Ito |
| Shefa Fund | Ari Beliak |
| Southern California Grant Makers | Judy Spiegel |
| U.S. Small Business Administration | Caroline Avery |
| | Alberto Alvarado |

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