

The Twin Mandates Given to the GSEs: Which Works Best, Helping Low-Income Homebuyers or Helping Underserved Areas?

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Abstract

This research examines the twin mandates of the GSE Act of 1992: to direct mortgage credit to neighborhoods that have been underserved by mortgage lenders and to direct mortgage credit to low-income and minority households. Using the Kansas City metropolitan area as a test site, data from the GSEs have been compared with non-GSE mortgage lenders to determine the performance of the GSEs in meeting these two objectives.

This research finds that the GSEs have not performed as well as the conventional lenders. Independent of the use of the secondary mortgage market, borrowers are better served if credit is directed to them independent of location. The alternative approach of directing credit to underserved areas is helpful only insofar as it helps to direct credit to neighborhoods that are marginally less desirable than the neighborhoods deemed to be well served.

This research focuses upon the twin directives given to the government-sponsored enterprises (GSEs) for the purchase of single-family housing loans. The GSEs—Fannie Mae and Freddie Mac—are the two major secondary mortgage-market participants. At issue is evaluating the merits of two different approaches to aiding the flow of mortgage credit. The first directs credit to low-income homebuyers regardless of where they choose to live. The second approach directs credit to those neighborhoods that have not received their fair share of mortgage credit in the marketplace. Which approach best serves the public interest?

To what extent should the GSEs be encouraged to lend in underserved areas that do not receive adequate levels of lending relative to the size of the housing stock? Is there unmet demand for mortgage credit in these underserved areas that can be assisted through increased efforts by the GSEs? What are the housing and employment prospects for borrowers who choose to locate in these underserved areas? These questions assess the place-based approach to directing the flow of housing credit.

To what extent should the GSEs be encouraged to lend to low-income and minority borrowers independent of where they choose to locate? Are these households choosing to remain in the older areas of the central city where housing values and job prospects are reduced, or are they moving to the suburban perimeter where the housing opportunities and the job prospects are greater? These questions assess the borrower-based approach to directing the flow of housing credit.

This research evaluates these two approaches to directing the flow of housing credit. While it will be limited to a single test market, the analysis is suggestive of how the two approaches may work elsewhere. Are both working well? Are both faltering? Is one performing better than the other?

In 1992 Congress sought greater oversight and regulatory control over the GSEs' operation by enacting the Federal Housing Enterprises Financial Safety and Soundness Act of 1992. This act called for HUD to establish annual affordable and geographic goals for the GSEs' loan purchases. It also required the GSEs to submit loan-level data to HUD describing the loans that they purchase, including information on the race and income level of the borrowers. The research reported here uses the data generated by the GSEs and employs these data to assess the performance of the GSEs in meeting the goals of the 1992 GSE Act. For purposes of comparison, data mandated through the Home Mortgage Disclosure Act (HMDA) have been assembled. This permits comparisons of the performance of the GSEs to the conventional lenders both at the level of borrowers (a measure of the effectiveness of the borrower-based approach), and at the level of neighborhoods (a measure of the effectiveness of the place-based approach.)

Prior Research

One of the larger debates in the area of urban policy in general, and housing policy in particular, is the debate between supply-side versus demand-side subsidy mechanisms. Supply-side subsidy programs direct public resources to particular projects and geographic locations. These projects and locations may be selected according to some attribute such as median household income, as is the case with Community Development Block Grant (CDBG) funding. Demand-side subsidy mechanisms direct public resources toward individuals or households, independent of the place where they reside. In the housing area, this type of subsidy is attached to the household, not the housing unit. This is true with the Section 8 certificate and voucher programs. The twin mandates of the GSE Act of 1992 fit into this debate, with the place-based approach following a supply-side design and the borrower-based approach following a demand-side approach.

Quigley (1994) argues strongly against the place-based programs of the past. He states that the problems of central cities are less the result of the movement of population and capital out of the central city, and more the result of the concentration of poverty and endemic racial discrimination in the central city. Quigley states that the lack of purchasing power is the principal cause of the substandard housing and social disruption found in the Nation's central cities. If housing value is a function of the purchasing power of occupants, then the supply of jobs is a key determinant of the long-term viability of the

housing in a neighborhood. A lack of jobs threatens both the value of the asset used to secure a home purchase loan and the homebuyer's potential for capital accumulation. Quigley stresses that a different approach to urban policy results from recognition of this cause of urban distress. He suggests that greater reliance on income transfers to disadvantaged populations would be a preferred subsidy mechanism to pumping more subsidy dollars into depressed urban neighborhoods. Quigley states,

Policies should be pursued that place no limitation on the locations chosen by households and firms; individual policies should be judged by their effects on the spatial concentration of low-income households and racially segregated markets.¹

This means that housing policy should be focused on demand-side subsidies that permit households to move to areas where they can find better housing and better employment opportunities as well as improved educational and commercial services.

Despite this concern with furthering the concentration of poverty with a place-based program, many researchers have focused on the uneven pattern of mortgage lending. Redlining and discrimination against residents of inner-city neighborhoods have been the focus of many studies. Schill and Wachter (1993) provide an extensive overview of these studies, categorized by methodology, geographic scope, and data sources. Vidal (1995) carries the study of spatial disparities in mortgage lending to the next level. She states that the availability of credit is essential to the revitalization of disadvantaged urban communities. She also demonstrates the effectiveness of various place-based programs that are designed to bring greater flows of credit into underserved areas.

Congress has not opted for one approach over the other in this debate. Rather, it has mandated that the GSEs make mortgage credit available to low-income or minority families and expand credit access to urban areas that have been underserved by the conventional lending industry. Directing mortgage credit to low- and moderate-income families tends to follow the demand-side approach by expanding the home purchasing power of low- and moderate-income households regardless of where they choose to reside. Directing mortgage credit into urban areas that have been underserved by conventional mortgage lenders tends to follow the supply-side approach by bringing more capital to serve the stock of housing in the older, deteriorating portions of the city.

Prior research has evaluated the GSEs' general performance in meeting this two-part mandate. Lind (1996) finds, using national-level data, that the GSEs tend to purchase loans made to low-income borrowers at a rate that is marginally below the rate found in the industry as a whole. In terms of the percentage of loans made to low-income borrowers, Fannie Mae was found to purchase loans at a rate that placed it about 2 percentage points below the level of the industry. Freddie Mac performed less well, at about 8 percentage points below the industry level. In a similar study, Bunce and Scheessele (1996) conclude that the GSEs have performed below other market participants. This study, using slightly different measurement techniques, found that approximately 12 percent of the GSEs' portfolios were loans to very low-income borrowers compared with about 17 percent for the industry as a whole—a 28-percent shortfall. Again, Fannie Mae performed better than Freddie Mac in this regard.

Lind also finds that the GSEs tend to purchase loans on homes located in low- and moderate-income tracts at a rate that is generally below that of the industry as a whole. In some metropolitan areas the GSEs performed better than the industry, but there was a tendency for these metropolitan areas to be smaller, "bedroom" areas lying just outside of larger metropolitan areas. The Bunce and Scheessele study comes to a similar conclusion,

finding that 19 percent of Federal Housing Administration (FHA)-insured loans go into census tracts with low median income levels—those below 80 percent of area median family income (AMFI)—but that the GSEs have only 12.5 percent of their purchases in these tracts.

Manchester, Neal, and Bunce (1998) extend the research by examining the performance of the GSEs from 1993 through 1995. Their research generally confirms the earlier work, finding that the GSEs performed below industry levels in serving groups traditionally underserved by the credit industry. However, the research did find that performance has been improving over time. In terms of borrower income, the research found that approximately 65 percent of the GSEs' home purchase mortgages went to borrowers with incomes above the area median income. Less than 9 percent of the GSEs' loans were taken out by very low-income households, which is below the performance of the conventional mortgage market.² In terms of the borrower's race, more than 80 percent of loans purchased by the GSEs in 1996 went to whites, and the remainder went to minority households.³ In the underserved areas (defined by income level and minority composition) Fannie Mae's purchases rose from 21 percent in 1993 to 25 percent in 1995 with Freddie Mac's purchases rising from 19 percent to 21 percent.

This suggests that the GSEs have failed to lead the industry in both aspects of the mandate. They have performed nearly on a par with or below the industry on the demand-side aspects of the mandate by purchasing loans for low-income borrowers, but they have performed well below the industry on the supply-side approach by loaning to low-income tracts.

Although prior research has evaluated the performance of the GSEs in meeting the mandates of the 1992 act, there has been little investigation of the approaches themselves. The research performed here addresses the place-based approach to directing credit flows versus the borrower-based approach. This adds to the debate in urban policy by bringing new data into the analysis and by performing more detailed analysis at the metropolitan level.

Approach

The approach taken in this research is to examine the flow of mortgage credit into a metropolitan market from two perspectives. The first perspective compares the place-based approach with the borrower-based approach, independent of lender. Here the analysis compares the housing and neighborhood outcomes of low-income and minority borrowers with the housing and neighborhood conditions of the underserved areas. Do low-income and minority borrowers choose to locate within underserved areas, indicating that there may be latent demand for credit in this area? Alternatively, do low-income and minority borrowers choose to locate outside of underserved areas, indicating a desire for mobility by these households?

The second perspective compares the performance of the GSEs to the conventional lenders. The analysis of the place-based approach compares the characteristics of the tracts where the GSEs purchased loans to the characteristics of the tracts where conventional lenders made loans. The analysis also examines the extent to which the GSEs purchase loans in the underserved tracts of the metropolitan area relative to non-GSE lenders. Where the GSEs' loans make up a greater share of the loans in the underserved tracts, it indicates that the purposes of the act are being served. Where the flow of the GSEs' credit is low relative to the industry, it indicates that the GSEs have been unable to meet their congressional mandate to assist the underserved tracts. Similarly, the analysis of the borrower-based approach focuses on comparison of the housing and neighborhood

outcomes of low-income and minority GSE borrowers compared to those of the credit industry. Where the GSE borrowers are moving to better neighborhoods (assessed in terms of such characteristics as the median value of homes, access to employment, and the level of racial as well as economic integration), then the purposes of the act are being served.

The research employs a single market for its analysis. The analysis examines the performance of the GSEs in a typical, Midwestern metropolitan area, Kansas City. The analysis has been performed examining mortgage data from 1993 through 1996. Coded to the census tract level, this case study permits more detailed exploration of the specific factors influencing the performance of the GSEs relative to the industry than has been possible using data aggregated at the national level. It is possible to identify the locations of the housing in terms of the demographic and market conditions that influence the long-term value of that housing.

Methods

Which factors should be used to assess the quality of the housing location decisions made by borrowers? Certainly, the concentration of poverty is a problem that needs to be addressed, as Quigley points out. But which factors contribute to a further concentration of poverty? Galster and Mincy (1993) provided insights into this issue when they estimated models predicting change in poverty within a tract as a function of many factors measuring demographic, housing stock, and employment characteristics. They suggest that only a few factors consistently predict growth in neighborhood poverty. These include overall job availability, the age composition of neighborhood residents, the proportion of households headed by nonmarried people, and the poverty rate itself. Other variables proved to be less useful as they have different coefficients depending on the racial or ethnic subsample employed in the analysis.

The analysis performed here adopts a similar set of test variables as those employed by Galster and Mincy. Tract-level and borrower data have been used to assess which of the two approaches to enhancing the availability of mortgage credit better serves the public interest. The data sources include the GSE Public Use Database, the HMDA database, census data, the Mid-America Regional Council, and the Kansas City Area Transit Authority. (For details, see the appendix.)

Each tract in the metropolitan area is examined in terms of the extent to which the neighborhood is underserved by the mortgage credit industry. The various markets of the metropolitan area have been described in terms of the amount of lending that is flowing in.

This type of analysis follows prior research. Bunce and Scheessele established a framework for comparing the performance of the GSEs to the performance of non-GSE lenders. This framework separately examines lending to FHA-eligible borrowers and borrowers with standard-sized loans who are not assisted by FHA or Veterans Administration (VA) insurance programs.

Each neighborhood also is evaluated in terms of the characteristics of its population and housing stock. The various markets have been described in terms of the concentrations of households by age, composition, race, and income. The markets also have been described in terms of the age, growth, and value of the housing in each tract.

Here the analysis employs typical tract-level measures of each tract's population and its housing stock.

Finally, each neighborhood has been evaluated in terms of the number of jobs that existed there in 1990, the growth in that job base, and the public transportation system connecting workers to jobs. The types of jobs existing within each tract are also described (e.g., office work, retailing, manufacturing, or construction).

Given the paucity of geographically identified employment data generally available, this is a relatively new aspect to the body of research in the field of credit flows. Data are available for the Kansas City metropolitan area describing the jobs that exist within each tract, which permits an assessment of the extent to which homebuyers are able to locate in tracts where employment opportunities exist. A second component of the employment is connecting the worker's home and job. The presence of public transit within a tract can influence the value of the tract in terms of getting the homebuyer to work. Data describing the level of service provided by the public transit system within each tract have also been analyzed.

Analysis

Place-Based Approach: How Do the Underserved Tracts Compare to the Well-Served Tracts?

The GSE Act of 1992 calls for HUD to establish goals for the GSEs to meet to serve underserved areas. The original goals established for the GSEs targeted loans to the Nation's central cities. However, the definition of underserved has changed to employ the concentration of minorities and the level of income within a census tract as the criteria for designation. This follows work done by Shear (1995), who examined the various methods through which HUD might direct credit. Shear modeled the level of credit needs in metropolitan areas and found that income and minority status are better indicators of special credit needs than is central city location. Shear found that not all areas within central cities suffer from concentrations of poverty and high housing costs and that some areas outside of central cities do. Arguing that the Black and Hispanic populations suffer from lower origination rates, Shear found that a census tract should be categorized as well-served or underserved based on the level of income or the concentration of minorities rather than its geographic location.

This approach to defining underserved areas was given regulatory standing in HUD's final rule (U.S. Department of Housing and Urban Development, 1995). This rule establishes different definitions of underserved areas for metropolitan areas and rural areas. The definition for metropolitan areas is relevant here. This definition categorizes an underserved area as a census tract having:

- a median income at or below 120 percent of the median income of the metropolitan area and a minority population of 30 percent or greater, or
- a median income at or below 90 percent of the median income of the metropolitan area.

The level of credit found in an area, measured by the number of loans made, does not enter directly into this definition. Rather, an area is defined as underserved if there is a high concentration of low- or moderate-income persons of any race, or if it is not of high income but has a high concentration of minorities.

Exhibit 1 compares the population, housing, and employment characteristics of the Kansas City metropolitan area's tracts. Separate listings are provided for the underserved and the well-served tracts. By definition, the underserved tracts must have higher concentrations of low- or moderate-income households. Given the definition of underserved, they probably will have higher concentrations of minorities.

The underserved areas are, as mandated, poorer by half, as the typical median income for the underserved tracts is about one-half of that for the well-served tracts. There is also a greater concentration of minorities by a factor of six, plus a greater incidence of poverty and of female-headed households. However, the incidence of elderly persons does not differ by much.

The housing stock in the underserved tracts is predominantly renter-occupied (60 percent) versus predominantly owner-occupied (59 percent) in the well-served tracts. The stock is of lower value; the typical median value is less than one-half the typical median value in well-served tracts. However, the appreciation rates are comparable. The underserved tracts have a somewhat higher level of home value appreciation from 1980 to 1990 than is found among the well-served tracts, but this higher level of appreciation is on a much lower base value. The underserved tracts have a lower level of new additions to the stock and a higher incidence of older properties. The underserved tracts have a higher incidence of multifamily structures, although single-family structures dominate both the well-served and the underserved markets.

The employment conditions are dramatically different between the two markets. The underserved tracts have much higher rates of unemployment among the residents who are in the labor force (11 percent compared to 4 percent). The underserved tracts also have a lower level of jobs located in the tract and a much lower level of job growth. The underserved tracts average a little under 9 loans per 100 owner-occupied homes. This is less than 50 percent of the average for the metropolitan area. The well-served tracts average 26 loans per 100 homes, almost 50 percent higher than the metropolitan average. Although the designation as an underserved tract is a function of race and income, it divides the tracts of the metropolitan housing market between areas with strong housing and employment conditions (and high lending levels) and areas with weak housing and employment conditions (and low lending levels).

Place-Based Approach: Is the Definition of Underserved Too Inclusive?

Almost one-half (47 percent) of the census tracts in the metropolitan area qualify as underserved. They are not evenly distributed throughout the metropolitan area. Instead, they are located around the inner city, as would be expected. They tend to be in close proximity to the central business districts of Kansas City, Missouri, and its smaller sister city, Kansas City, Kansas. Few underserved tracts are found in the more suburban counties north of the Missouri River—Platte and Clay counties. Only five underserved tracts are in the very affluent Johnson County, Kansas, in the southwestern part of the metropolitan area (see exhibit 2).

Exhibit 3 examines the distribution of lending within the underserved tracts and the well-served tracts. This chart plots the frequency of tracts measured by the number of loans made in 1996 (both GSE loans and non-GSE loans) as a percentage of the number of owner-occupied homes in the tract in 1990. This becomes a measure of the level of market penetration that mortgage lenders are making within the tract. This exhibit shows that the levels of lending in well-served tracts are very different from the levels of lending

Exhibit 1

Comparison of Tract Characteristics of Underserved Tracts and Tracts With Low Lending Levels to All Tracts in the Kansas City Metropolitan Area

Tract Characteristics	Metropolitan Area	Underserved Area	Well-Served Area	Low Lending (5% or less)	Adequate Lending (Greater than 5%)
Average population descriptors					
Median income (\$)	36,274	24,248	47,103	20,419	40,795
Below poverty (%)	13.28	22.50	4.97	30.14	8.15
Minority (%)	24.09	43.00	7.05	68.74	12.35
Elderly (%)	10.04	10.68	9.48	11.14	9.69
Female-headed households (%)	13.37	20.20	7.23	25.62	9.44
Average neighborhood descriptors					
Owners (%)	50.22	40.34	59.11	43.02	54.21
Median value (\$)	63,756	39,864	84,934	29,522	72,439
Appreciation median value (%)	59.39	61.72	57.29	74.67	54.20
Structures built 1989–90 (%)	1.71	0.78	2.54	0.35	2.09
Structures built pre-1940 (%)	20.01	31.52	9.64	39.97	14.67
Single-family structures (%)	66.43	60.10	72.13	66.94	68.13
Number of buses, all routes	267.24	380.67	165.11	465.10	215.69
Average job market descriptors					
Workforce unemployed (%)	7.15	10.87	3.80	13.93	5.05
Total jobs, 1990	2,082	1,734	2,399	1,207	2,287
Growth in jobs, 1980–90 (%)	74.21	21.01	122.11	13.28	95.01
Number of agriculture, mining, construction, and utility jobs, 1990	406	358	449	265	437
Number of manufacturing jobs, 1990	236	259	214	162	264
Number of FIRE/government jobs, 1990 ^a	1,171	848	1,275	586	1,173
Number of retail jobs, 1990	369	269	460	195	413
Average 1996 loans as percent of 1990 owner units					
	18.85	8.63	26.07	2.75	20.77
Number of tracts					
	420	199	221	63	330

^a FIRE = finance, insurance, and real estate

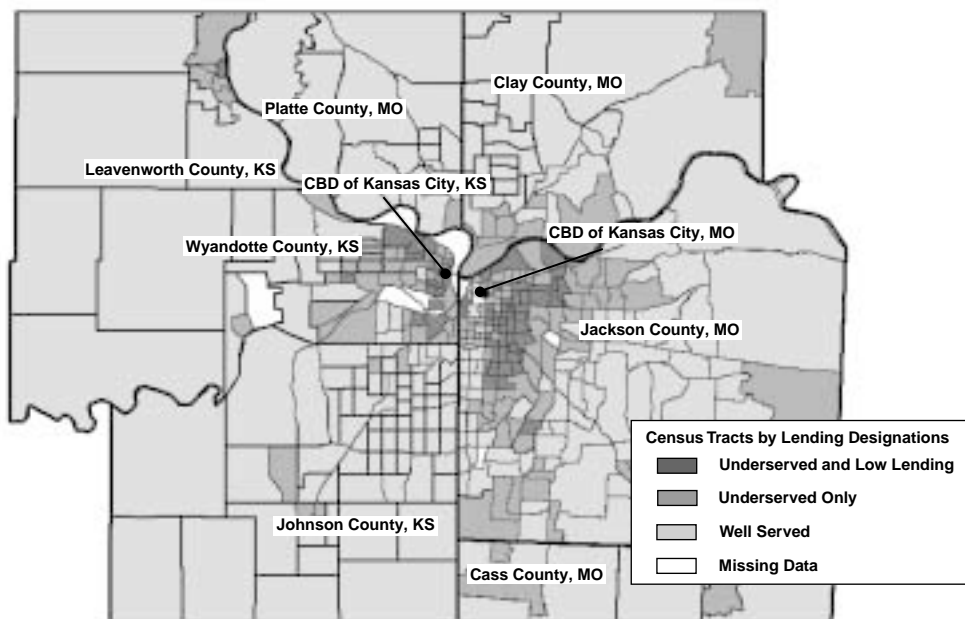
in underserved tracts. This would be expected despite the fact that the designation of underserved is based only on income and race, not on the levels of lending. It is well established that rates of loan originations are lower among minorities and the poor (Shear, 1995). Thus, the underserved tracts are expected to have lower levels of lending.

The average tract has a total number of loans equal to about 19 percent of the number of homes in the tract. This measure of lending varies widely from zero (indicating that no loans were made in the tract despite the presence of owner-occupied homes) to nearly 100 percent where the tract is an area of new development with virtually all homes having new loans originated. There is also considerable variation between the distributions for the underserved and the well-served tracts. The distribution among the underserved tracts is skewed to a low level of lending. However, many underserved tracts exist that have average to above average levels of lending. The distribution among well-served tracts is a more normal distribution. Only one well-served tract had less than 5 percent of its homes receiving a loan, with a modal category of 10 to 15 percent, which lies below the market average. More than 100 of the well-served tracts had loans originated in fewer than 15 percent of the homes, and more than 40 of the well-served tracts had loans originated in fewer than 10 percent of the homes.

Clearly, there are tracts categorized as underserved that have high numbers of loans, and there are tracts categorized as well-served that have very low numbers of loans. This suggests that the level of lending by the industry does vary, and that a more stringent definition of underserved may be created that focuses upon the level of market penetration

Exhibit 2

Census Tracts of the Kansas City Metropolitan Area: Level of Lending and Designation of Underserved



made by lenders. Megbolugbe and Cho (1993) suggest that such a definition is necessary but must be premised on demand for credit. If a neighborhood does not have mortgage credit, it does not mean that it is underserved. Rather, a neighborhood is underserved only if both mortgage credit is absent and demand exists for that credit. Thus, a more stringent definition of an underserved area might be based on the level of mortgage lending relative to the size of the housing stock, using the stock as a proxy for the demand for credit.

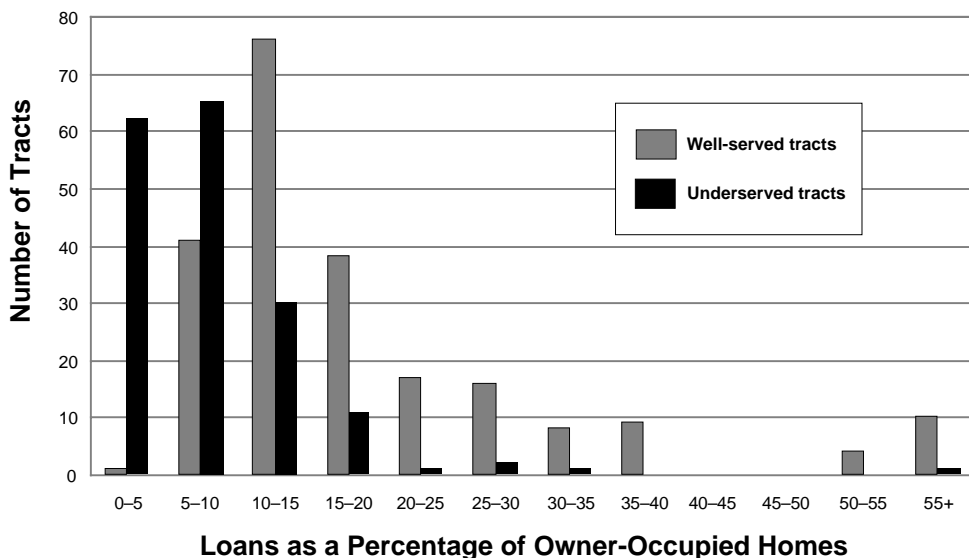
Place-Based Approach: How Do Tracts With Low Lending Levels Compare to the Underserved Tracts?

Exhibit 2 also displays those tracts with low levels of lending. The designation of a tract as suffering from a low level of lending is given when its 1996 originations are fewer than 5 percent of the number of owner-occupied homes. In addition, the designation is limited to only those tracts with median home prices below \$100,000. The metropolitan median price of existing housing in 1990 was about \$74,000.⁴ Thus, a threshold of \$100,000 eliminates only tracts where the typical home price in 1990 was well above the average for the metropolitan area. Low lending levels in these high-priced neighborhoods may reflect a lack of need for mortgage credit rather than the banks' lack of willingness to lend. These tracts would not be deemed to be suffering from a lack of mortgage credit; they would simply have a lack of demand for that credit. This creates a more narrow definition of underserved areas. This definition identifies 63 tracts as being poorly served because they have low lending despite the availability of affordable housing. They are, predictably, concentrated in the inner-city areas of Kansas City, Missouri, and Kansas City, Kansas. None are in Johnson County, Kansas, or in Platte and Clay counties, Missouri. They are fewer in number, making up only about 16 percent of the tracts in the metropolitan area.

In many respects, these 63 tracts represent a core, inner-city area. Exhibit 1 also compares the demographic, housing, and employment characteristics of these tracts with low levels of lending to the remaining tracts with higher levels of lending. The median family in-

Exhibit 3

Distribution of 1996 Loans as a Percentage of Owner-Occupied Homes With a Mortgage, for Underserved and Well-Served Tracts



comes are lower in these tracts, the concentrations of poverty are greater, the concentrations of racial minorities are greater, unemployment is more prevalent, and the base of jobs is barely growing compared with the strong increases found for the metropolitan area as a whole. The tracts that suffer from low lending levels have an average income that is less than 60 percent of the average for the metropolitan area. This is below the 67 percent that were found with the underserved tracts designated through HUD's definition. Poverty in these 63 tracts with low lending levels, averaging 30 percent, is more than twice the incidence of poverty found among tracts in the metropolitan area as a whole. Racial and ethnic minorities dominate these tracts, typically comprising 69 percent of the population compared with 43 percent among the underserved tracts and 24 percent for the entire metropolitan area.

The housing stock is predictably less appealing in the census tracts with low lending levels. The typical median value was only \$30,000 in 1990, which is less than one-half of the figure for the metropolitan area. However, the median values in the low lending tracts did increase in real terms. The average appreciation was almost 75 percent from 1980 to 1990, which is greater than the 51-percent general rate of inflation for the decade.⁵ This is also greater than the average 62-percent appreciation found in the underserved tracts. However, this positive appreciation in home values did not prove to be sufficient to attract new investment, as the amount of new construction was minuscule. Only 0.4 percent of the 1990 housing stock in the tracts with low lending levels was built during the previous year, compared with 1.8 percent for the metropolitan area.

The employment base is also very poor in these low lending tracts. The 1990 unemployment rate was 14 percent, almost double the 7.2 percent for the metropolitan area and marginally greater than the 11 percent found in the underserved tracts. The typical number of jobs in each tract was low—only 58 percent of the level found for the metropolitan area. Most significantly, the base of jobs is rather flat, growing only 13 percent over the decade of the 1980s, compared with 21-percent growth for the underserved tracts and 74-percent growth for the metropolitan area as a whole.

The level of lender activity is very different between the two designations. The 63 tracts designated as having low lending levels average only 2.8 percent of the homes experiencing loan originations in 1996. The underserved tracts averaged 8.6 percent, which is well below the 18.9 percent average across the metropolitan area but more than three times greater than the level found in the 63 tracts with low lending levels.

This comparison of underserved areas to the well-served areas and low-lending areas to adequate-lending areas does demonstrate that marked differences exist. The underserved and low-lending areas have higher concentrations of poverty and of racial and ethnic minorities. However, there are additional problems. These areas also have low levels of employment and unemployment is high. The stock of housing is of low value and has little investment in new units, but—on the positive side—the stock in underserved areas shows signs of appreciating in value at a rate somewhat greater than the appreciation realized in the well-served tracts.

That these census tracts with low lending levels have a need for additional mortgage credit seems apparent from the low rate of originations found there relative to other tracts in the metropolitan area. However, the low lending levels reflect the lower levels of income and housing value found there. If the purpose of directing credit into these areas is to give greater access to credit to those poor and minorities who reside there, then the approach can be beneficial. Certainly, the poor and minorities dominate these areas. If however, the purpose of directing credit into these areas is to assist households into

gainful employment and sound housing investments, then directing credit to these areas may not be sound policy. Investment in a home in these areas may not be beneficial to the potential buyer given the high concentrations of poverty and unemployment, as well as the declining employment prospects.

Borrower-Based Approach: Where Do the Very Low-Income and the Minority Borrowers Locate?

The borrower-based approach seeks to help poor and minority households directly by guiding capital to those households. Exhibit 4 lists the average tract characteristics where very low-income borrowers and minority borrowers have located. It examines how very low-income and minority borrowers have fared during 1996.⁶ The GSE and non-GSE borrowers have been merged in this exhibit to establish a basis for comparison.

The analysis breaks out the borrowers by those with very low levels of income, that is, borrowers whose family income was less than 50 percent of the metropolitan area's median family income. The threshold of 50 percent of AMFI is generally believed to indicate "the working poor." While the exact threshold changes each year, 50 percent of AMFI in the Kansas City area generally means an annual income of less than \$19,000. Certainly this is a population whose members may need assistance in financing and purchasing a home.

Exhibit 4 also lists the average tract characteristics for borrowers who are members of racial or ethnic minorities. For purposes of this analysis, designation of a borrower as a minority was made if any member of the borrower's household was non-White or Hispanic (of any racial designation).

Comparison of the characteristics of tracts in which borrowers are buying homes indicates that the poor and minorities are not purchasing homes in tracts that represent a normal cross section of the metropolitan area. As might be expected, there is a hierarchy among all of the measures of tract population, housing, and employment. Borrowers with incomes below 50 percent of AMFI have the lowest levels among the various measures of the tracts. Minority borrowers, who may or may not have low incomes, generally purchase homes in tracts with characteristics that fall below the averages for the metropolitan area as a whole but above the averages for very low-income borrowers.

Very low-income borrowers tend to purchase homes in tracts that are poorer than is typical for all borrowers in the metropolitan area. These tracts tend to have a lower median income, a higher incidence of minorities, and a higher incidence of persons below poverty. The housing in these tracts typically has a lower value and is experiencing a slower rate of investment in new units. The base of jobs is smaller; the average number of jobs per tract is 10 percent below the average among all borrowers. The unemployment rate is higher, with a mean of 6.0 percent in tracts where very low-income borrowers are located compared with the 4.2-percent average for the tracts of all borrowers. The job growth rate is lower in the tracts with very low-income borrowers, with an average 48-percent growth of jobs compared with 122 percent for all borrowers.

The poor also tend to locate in tracts that have lower levels of lending. The poorest borrowers locate in tracts with lending levels only a little over one-half that of all borrowers. About 49 percent of these poorest borrowers locate in the underserved tracts compared with only 18 percent of all borrowers. About 8 percent of them located in the tracts with low lending levels compared with fewer than 2 percent of all borrowers.

Exhibit 4

Average Tract Characteristics of All Borrowers (GSE and Non-GSE) Compared to Low-Income and Minority Borrowers in 1996

Average Tract Characteristics	Borrowers (All Incomes, All Races)	Borrowers (Very Low Income)	Borrowers (Minorities)
Average population descriptors			
Median income (\$)	46,076	35,319	39,876
Below poverty (%)	5.60	9.94	9.36
Minority (%)	8.28	16.55	22.72
Elderly (%)	8.12	10.00	8.95
Female-headed households (%)	8.20	11.91	12.14
Average neighborhood descriptors			
Owners (%)	61.11	56.35	59.14
Median value (\$)	84,734	58,335	69,416
Appreciation median value (%)	49.12	46.49	47.54
Structures built, 1989–90 (%)	3.48	1.74	2.50
Structures built, pre-1940 (%)	9.47	16.61	13.53
Single-family structures (%)	73.72	72.43	72.25
Number of buses, all routes	119.50	224.87	249.45
Average job market descriptors			
Workforce unemployed (%)	4.16	6.05	5.96
Total jobs, 1990	2,153	1,929	1,760
Growth in jobs, 1980–90 (%)	122.37	48.11	87.19
Number of agriculture, mining, construction, and utility jobs, 1990	422	347	330
Number of manufacturing jobs, 1990	260	241	217
Number of FIRE/ ^a government jobs, 1990 ^a	1,057	948	875
Number of retail jobs, 1990	415	394	338
Market penetration by lenders			
Loans as a percentage of owner units	24.99	14.03	18.05
Percentage of loans to underserved tracts	17.83	48.63	39.73
Percentage of loans to low-lending tracts	1.79	8.31	11.63
Number of borrowers	45,208	3,064	3,671

^aFIRE = finance, insurance, and real estate

Minority borrowers located in tracts with characteristics in between those of the metropolitan area and those for very low-income borrowers. Minorities, compared with all borrowers, tend to purchase homes in tracts with lower median incomes, greater poverty, and a higher incidence of minorities. The housing in tracts where minority borrowers purchase homes tends to be of lower value and tends to have lower rates of units being added to the stock. Minority borrowers also tend to purchase homes in tracts with higher unemployment, fewer jobs, lower job growth, and lower levels of lending.

Comparing Approaches in General

Exhibit 5 compares the average tract characteristics of very low-income borrowers (income below 50 percent of AMFI) and minority borrowers with the tract characteristics of the underserved areas. These comparisons would not be entirely fair if the characteristics describing the underserved areas are unweighted. Averages across the 199 tracts that are categorized as underserved count each tract once, independent of the number of homes in the tract. This counts a tract with few homes the same as a tract with many homes. Somewhat different averages are found when the tracts are weighted according to the scale of the housing stock. Exhibit 5 revises the average tract characteristics for the underserved tracts by weighting them according to the number of occupied homes within the tract. This weight has been selected as a measure of the scale of the active housing market within the tract. Using this weight makes the comparison more conservative because the tracts where there are very few occupied homes also tend to be very undesirable locations. By weighting the tracts according to the number of occupied homes, the comparisons are less likely to find an unfavorable difference between underserved or low-lending tracts and the tracts where the target populations are purchasing homes.

Despite this conservative approach, the underserved tracts seem to be less desirable than the typical tracts where very low-income households are purchasing homes. The underserved tracts have higher concentrations of both poverty and minorities, than tracts where very low-income households are purchasing homes. The underserved tracts also seem to be less desirable in terms of the median value of the housing, the rate of units being added to the stock, and the proportion of the units built before 1940. The underserved tracts also seem to be less desirable in terms of employment prospects. The underserved tracts have a higher incidence of unemployment, fewer total jobs, and a lower level of job growth than is true for the tracts where the very low-income households are purchasing homes.

Minority borrowers provide a similar comparison. Minority borrowers, relative to the underserved tracts, tend to locate in tracts with higher income and lower concentrations of poverty and minorities. It is interesting that minority homebuyers tend to purchase homes in tracts where minorities make up less than 23 percent of the population, clearly a level that will make the racial and ethnic minority borrower a member of a numerical minority among homeowners within the tract.

Typically the tracts that have low lending levels generate even lower demographic, housing, and employment characteristics than the underserved area. As a result, the comparison with the tracts where very low-income homebuyers are locating becomes even more stark than the comparison with the underserved areas.

These results suggest that, given the mobility to locate anywhere a suitable home can be found, very low-income and minority borrowers are choosing to move to neighborhoods that offer better housing, neighborhood, and employment opportunities than would be the case if their choice was restricted to purchasing within the designated underserved or low-lending areas. Even with the weighting applied to the underserved tracts, it is apparent

Exhibit 5

Comparison of Characteristics of Underserved Tracts and Tracts With Low Lending Levels Weighted by Number of Owner-Occupied Units to Tracts Where Very Low-Income and Minority Borrowers Located in 1996

Average Tract Characteristics	Owners in Underserved Tracts	Owners in Low Lending Tracts	Very Low-Income Borrowers	Minority Borrowers
Average population descriptors				
Median income (\$)	27,341	21,306	35,319	39,876
Below poverty (%)	16.98	28.11	9.94	9.36
Minority (%)	34.21	70.45	16.55	22.72
Elderly (%)	10.62	10.36	10.00	8.95
Female-headed households (%)	17.31	26.35	11.91	12.14
Average neighborhood descriptors				
Owners (%)	50.17	48.93	56.35	59.14
Median value (\$)	42,651	29,594	58,335	69,416
Appreciation median value (%)	53.88	70.76	46.49	47.54
Structures built, 1989–90 (%)	1.07	0.25	1.74	2.50
Structures built, pre-1940 (%)	26.17	38.61	16.61	13.53
Single-family structures (%)	69.57	74.76	72.43	72.25
Number of buses, all routes	329.79	505.39	224.87	249.45
Average job market descriptors				
Workforce unemployed (%)	8.69	13.55	6.05	5.96
Total jobs, 1990	1,608	1,067	1,929	1,760
Growth in jobs, 1980–90 (%)	20.26	2.93	48.11	87.19
Number of agriculture, mining, construction, and utility jobs, 1990	282	221	347	330
Number of manufacturing jobs, 1990	215	168	241	217
Number of FIRE/ government jobs, 1990 ^a	822	542	948	875
Number of retail jobs, 1990	288	137	394	338
Market penetration by lenders				
Loans as a percentage of owner units	8.01	2.95	14.03	18.05
Percentage of loans to underserved tracts	–	–	48.63	39.73
Percentage of loans to low-lending tracts	–	–	8.31	11.63
Number of households	108,549	28,676	3,064	3,671

^aFIRE = finance, insurance, and real estate

that very low-income and minority homebuyers are purchasing homes in tracts with improved demographic, housing, and employment conditions. The very low-income and minority purchasers are buying homes in tracts with higher income and with lower concentrations of poverty and minorities. The housing stock is of higher value. The stock has comparable rates of appreciation of that value and higher rates of new additions. The workforce in the tracts has less unemployment. The tracts have more jobs and dramatically more job growth than is found in the underserved tracts.

Comparing Approaches: Does the Place-Based Approach Foster Either Racial or Economic Integration?

The object of helping underserved areas is not just to help populations already residing there but to help revitalize the neighborhoods, possibly through attracting households that will reduce the concentrations of poverty and minorities. If the households borrowing to purchase homes inside the targeted areas are of higher income levels than the resident population or are more racially integrated than the resident population, then increased diversity can result.

Borrowers purchasing within the underserved areas had incomes averaging just under \$32,700 per year in 1993 (see exhibit 6). This can be compared with the average family income in the underserved tracts at \$30,600 in 1989, the year for which the census requests income. Assuming also that incomes rose somewhat during the years 1989 to 1993, the mean income of the families in the underserved tracts would be higher still. A growth rate of only 1.7 percent per year would bring the incomes of the families in the underserved tracts up to the level of the borrowers who purchased within these tracts. Wage rates in the metropolitan area rose by 2.3 percent per year during this period (U.S. Bureau of Labor Statistics, 1999). While inner-city residents may not have experienced wage growth at quite this rate, the wage growth in the metropolitan area suggests that incomes probably did grow by more than 1.7 percent per year. This would indicate that the borrowers choosing to purchase within the underserved tracts tend to be about the same or even poorer than the resident population. Thus the process of bringing higher-income homebuyers into these underserved areas is not occurring.

Exhibit 6

Racial and Economic Integration of Underserved Tracts in 1993

Population Characteristic	Borrowers in GSE and Non-GSE Underserved Tracts, 1993	Underserved Tracts, 1990
Average family income	32,667	30,587
Minority (%)	11.02	43.00

However, there is some reason to believe that racial integration is being furthered. Although 43 percent of the residents of underserved tracts are minorities, only 11 percent of the borrowers purchasing homes within those tracts are. This suggests that borrowers purchasing within the underserved areas are fostering racial integration in that these borrowers are 89 percent non-Hispanic White while the resident population is only 67 percent non-Hispanic White.

GSE Performance With the Place-Based Approach: Are GSEs Helping All Borrowers?

The analysis now turns to the performance of the GSEs relative to the lending industry as a whole. At issue is the GSEs' performance versus the primary market lenders. Are the GSEs performing on a similar level or are they different from the industry as a whole? Performance is assessed on the basis of the population, housing, and employment characteristics of the tracts where the borrowers locate. The industry samples, taken from HMDA data, have been organized into three groups, following Bunce and Scheessele (1996). These groups:

- Compare the GSEs with all non-GSE originations. This comparison is made against the total lending in the industry other than those loans purchased by the GSE. Included are all single-family loans for owner occupancy, independent of the size of the loan or the type of lender.
- Compare the GSEs with all non-GSE originations that are FHA eligible. This comparison is made only against those loans that fall within the FHA loan limits in effect at the time. This includes both those non-GSE loans that did employ either FHA or VA insurance as well as those loans that did not use, but could have used the insurance given the scale of the loan.
- Compare the GSEs with all non-GSE conforming market originations. This comparison is made against only those non-GSE loans from conventional lenders, but eliminating FHA and VA insured loans and any loans over the "jumbo" loan limits in force each year.⁷

Exhibit 7 lists the comparisons for 1996 for all borrowers of any race and any income category. While data are available for the years 1993 through 1996, only the results for 1996 are reported here because the patterns found do not vary in any significant manner over the 4-year period. The performance of the GSEs also differs from all three non-GSE samples independent of which sample is examined. Thus, the conclusions are not particularly sensitive to the comparison standard either.

Compared with the non-GSE borrowers, the GSEs' borrowers tend to purchase homes in tracts that are more desirable in the sense that these tracts have higher levels of income, higher home values, and higher levels of employment. Alternatively, the GSEs tend not to be serving borrowers who locate in the underserved neighborhoods as much as non-GSE lenders. The GSEs' borrowers tend to purchase homes in tracts with median incomes that are about 5 percent higher. The incidence of poverty is proportionately lower. The incidence of the elderly, racial, and ethnic minorities, and female-headed households in the population are all lower in the tracts where the GSEs' borrowers locate.

Because the population of the GSE borrowers' tracts is financially better off, housing conditions in these tracts also are improved. Over the 4 years examined, the median values of homes are anywhere from 0 to 25 percent higher than the tracts where non-GSE borrowers purchased homes. In addition, the rate of appreciation of the value of the homes is at least the same in the GSE borrowers' tracts or up to 7 percentage points higher. The GSEs' borrowers tend to select housing markets with comparable proportions of owner-occupied housing in the stock and proportions of single-family housing. The GSEs' borrowers located in tracts with slightly more new housing, and the proportion of the stock that was built prior to 1940 is slightly lower.

Exhibit 7

Average Tract Characteristics of GSE and Non-GSE Borrowers, 1996

Average Tract Characteristics	GSEs			Non-GSEs		
	All	Fannie Mae	Freddie Mac	All	FHA Eligible	Conforming Market
Average population descriptors						
Median income (\$)	47,434	47,300	47,587	45,005	40,537	47,400
Below poverty (%)	5.26	5.36	5.14	5.93	6.88	5.43
Minority (%)	7.72	8.06	7.33	8.77	10.13	7.75
Elderly (%)	7.97	8.04	7.91	8.23	8.77	7.96
Female-headed households (%)	7.79	7.86	7.72	8.56	9.52	7.94
Average neighborhood descriptors						
Owners (%)	61.47	61.41	61.54	60.66	58.73	60.41
Median value (\$)	88,080	87,624	88,599	82,172	70,857	88,498
Appreciation median value (%)	50.01	51.50	48.33	8.51	44.00	48.72
Structures built, 1989–90 (%)	3.66	3.62	3.71	3.34	2.33	3.78
Structures built, pre-1940 (%)	9.26	9.75	8.70	9.67	10.62	9.86
Single-family structures (%)	74.15	74.39	73.88	73.24	72.32	72.76
Number of buses, all routes	111.96	115.31	108.15	125.91	145.78	111.89
Average job market descriptors						
Workforce unemployed (%)	3.99	4.03	3.95	4.31	4.72	4.02
Total jobs, 1990	2,173	2,163	2,184	2,137	2,114	2,205
Growth in jobs, 1980–90 (%)	134.52	135.09	133.87	113.28	81.50	141.84
Number of agriculture, mining, construction, and utility jobs, 1990	424	421	427	422	397	449
Number of manufacturing jobs, 1990	256	262	249	264	287	261
Number of FIRE/ ^a government jobs, 1990 ^a	1,080	1,073	1,068	1,038	993	1,084
Number of retail jobs, 1990	414	408	420	414	437	410
Average market penetration by lenders						
Loans as a percentage of owner units	25.81	25.18	26.53	24.40	19.62	28.26
Percentage of borrowers in						
Underserved tracts	14.71	15.11	14.25	20.38	26.43	16.39
Tracts with low-lending levels	1.74	2.13	1.29	1.82	2.48	1.50
Number of borrowers	19,034	10,074	8,960	26,174	19,004	13,092

^aFIRE = finance, insurance, and real estate

The employment conditions tend to be more favorable in the tracts where the GSE borrowers locate relative to the non-GSE borrowers. The GSE borrowers' tracts have resident workforce populations with lower rates of unemployment. These tracts also have the same or more jobs located within their boundaries and dramatically higher rates of job growth. Whereas the GSE borrowers' tracts enjoyed an average job growth rate from 1980 to 1990 of about 135 percent, the non-GSE borrowers' tracts had average job growth rates of about 113 percent.

In terms of lending levels, the GSE loans tend to be located in tracts that are more heavily serviced by the lending industry. The GSE borrowers' tracts have slightly higher rates of originations relative to the size of the housing stock than do the non-GSE borrowers' tracts. The GSE borrowers also tend to have fewer loans drawn from the underserved tracts than do the non-GSE borrowers. In 1996 the GSE borrowers had 15 percent of their loans located in the underserved areas compared with 20 percent for the non-GSE borrowers. There is a similar pattern among the tracts that suffer from low levels of lending. Only 1.7 percent of the GSE borrowers' loans were located in the low-lending tracts compared with 1.8 percent for the non-GSE borrowers.

Among the GSEs, both Fannie Mae and Freddie Mac have similar performances. By most measures, the two GSEs tend to perform about the same, and both tend to be more cautious than non-GSE lenders. However, to the extent that any differences can be discerned, Fannie Mae appears to be performing somewhat better than Freddie Mac. Fannie Mae tends to have slightly higher percentages of its loans in the low-lending areas and slightly higher percentages of its loans in the underserved areas. This Kansas City experience corresponds to national studies that have found the GSEs lagging behind the conventional lenders but with Fannie Mae performing better than Freddie Mac (Lind, 1996; Bunce and Scheessele, 1996; Manchester, Neal, and Bunce, 1998).

This suggests that the GSEs are purchasing a selective subset of the total loans originated in the primary market. The GSE borrowers' loans are located in areas with better housing and higher employment. This is certainly beneficial to the households involved. However, it also means that the GSEs are not purchasing loans in the poorer neighborhoods at the same rates as conventional lenders. The tracts served by the GSEs tend to be the tracts that are already well served by the lending industry. The GSEs appear to be avoiding the underserved and low lending level tracts much more so than the non-GSE primary lenders.

GSE Performance With the Borrower-Based Approach: Helping Very Low-Income and Minority Borrowers

If the GSEs serve tracts that are more well off in terms of the tracts' demographic, housing, and employment characteristics, it is beneficial to the borrowers involved. Unfortunately, this is not helpful to the underserved tracts and the tracts suffering from low lending levels. This describes the performance of the GSEs for all borrowers, independent of each borrower's race or income. However, the GSEs are mandated to serve low-income and minority borrowers. If they are not succeeding in serving the underserved areas, are the GSEs performing well in terms of serving the target populations of the poor and the minorities?

Exhibit 8 examines the percentage of borrowers within each lender category that are very low-income. In order to identify the truly needy households, for whom housing affordability is a problem, only the very low-income are examined, that is, those with income below 50 percent of the metropolitan area's median family income for the year being examined. Exhibit 8 also examines the percentage of borrowers who are members of

Exhibit 8

Percentage of Borrowers That Are Very Low-Income or Minority by Lender Type and Year for All Tracts, Underserved Tracts, and Tracts With Low Lending Levels, 1993–96

Year	Tracts	Percent of Loans	GSEs			Non-GSEs		
			All	Fannie Mae	Freddie Mac	All	FHA Eligible	Conforming Market
1993	All tracts	Very low-income	2.05	2.12	1.98	8.53	9.96	9.01
		Minorities	3.95	3.99	3.90	7.40	7.88	6.44
	Under-served	Very low-income	6.47	6.03	6.93	19.26	19.85	24.94
		Minorities	8.15	8.58	7.83	16.35	16.81	16.43
	Low lending	Very low-income	10.82	8.96	14.77	33.03	33.13	46.43
		Minorities	38.53	30.60	53.93	49.24	49.39	57.14
1994	All tracts	Very low-income	4.62	5.64	3.46	8.69	11.38	9.19
		Minorities	5.63	6.32	4.84	8.47	9.59	8.13
	Under-served	Very low-income	12.63	14.78	9.20	22.64	23.74	27.92
		Minorities	12.23	13.43	10.36	18.79	19.37	20.80
	Low lending	Very low-income	14.24	16.27	9.21	41.22	41.63	48.84
		Minorities	34.72	33.49	40.00	57.07	57.39	66.05
1995	All tracts	Very low-income	6.27	7.30	4.78	8.71	11.69	7.75
		Minorities	7.74	8.11	7.19	9.47	10.89	7.81
	Under-served	Very low-income	18.32	20.53	14.40	21.96	23.21	22.64
		Minorities	16.50	19.08	11.89	19.90	20.58	20.18
	Low lending	Very low-income	37.76	37.33	40.00	37.80	38.12	35.48
		Minorities	50.51	51.66	47.73	55.68	55.83	59.91
1996	All tracts	Very low-income	5.41	6.27	4.44	8.08	11.03	7.62
		Minorities	6.84	8.02	5.50	8.84	10.32	7.05
	Under-served	Very low-income	16.28	19.82	12.13	20.61	21.75	22.07
		Minorities	16.01	21.03	10.08	18.86	19.28	18.17
	Low lending	Very low-income	28.95	37.50	14.02	36.13	36.49	39.90
		Minorities	54.09	63.96	40.95	53.49	53.63	59.62

Note: Very low-income is defined as having an income of less than 50 percent of the area median family income.

racial or ethnic minorities (at any income level). Minority membership is defined as a household identified as being non-White or Hispanic.

Exhibit 8 illustrates that the GSEs generally perform below the levels of the mortgage industry in terms of serving very low-income and minority borrowers. However, their performance is improving as the GSEs close the gap between themselves and the primary lenders serving the non-GSE market. This coincides with the findings of Manchester, Neal, and Bunce (1998) who find, on a national scale, that the GSEs are performing below their goals of serving low-income and minority borrowers but are improving in that performance.

Typically, the GSEs have 2 to 6 percent of their borrowers who are very low-income households. This is well short of the 8 to 9 percent found with the non-GSE industry lenders. This means that the GSEs fell well behind the industry in each of the 4 years studied. The shortfall was more than 6 percentage points in 1993 and 4 percentage points in 1994. The gap narrowed to 1.5 percentage points in 1995 but widened again to 2.6 percentage points in 1996.

Approximately the same pattern is found when examining only those borrowers that located in the underserved tracts or tracts with low lending levels. The proportions of borrowers in these tracts who are of very low-income are, not surprisingly, significantly higher. Typically 6 to 16 percent of the GSEs' borrowers in underserved tracts are very low-income borrowers, and this number has been increasing with time. This performance has been 4 to 13 percentage points behind the performance of the non-GSE lenders, but the gap is closing. Similarly, in the tracts with low lending levels, the GSEs serve even more very low-income borrowers (10 to 40 percent) but fall up to 26 percentage points behind the industry, with the gap generally narrowing.

Given the high correlation between minority status and incidence of poverty, it is not surprising that the comparisons between the GSEs and the non-GSEs in terms of serving racial and ethnic minorities is very similar to those found with very low-income borrowers. Generally, the GSEs purchase a lower proportion of loans made with minority households than is true among the non-GSE loans. However, as with the very low-income borrowers, the gap between the performance of the GSEs and the non-GSEs is closing.

Across the metropolitan area, the GSEs purchase loans with 4 to 8 percent made to minority borrowers. However, the non-GSEs originate 7 to 9 percent of their loans with minorities. The typical spread between the GSEs and the comparison groups was 3 percentage points in 1993 and 1994, but it fell to 2 percentage points in 1995 and 1996.

Within only the underserved tracts and the tracts with low levels of lending, the GSEs do purchase more loans from minority borrowers than is true across all tracts of the metropolitan area, but the spread between the performance of the GSEs and the non-GSEs has been greater as well. The GSEs purchase loans located in the underserved tracts with 6 to 18 percent of these loans having minority borrowers. However, the non-GSEs tend to perform better, by 8 percentage points in 1993 and 2 percentage points in 1996. In the tracts with low lending levels, the GSEs' loans typically have anywhere from 35 to 54 percent minority borrowers, but the non-GSEs outperformed them by 11 percentage points in 1993, 13 points in 1994, and 6 points in 1995. In 1996 the GSEs actually outperformed the non-GSEs, but by less than a single percentage point.

In virtually all of these comparisons of lending to very low-income borrowers and to minority borrowers, the two GSEs performed similarly. Both Fannie Mae and Freddie

Mac trailed the conventional lenders. However, following the pattern found previously, Fannie Mae tended to outperform Freddie Mac by having slightly higher percentages of loans with very low-income borrowers and with minority borrowers.

GSE Performance With the Borrower-Based Approach: Where Do Very Low-Income Borrowers Locate?

The GSEs appear to lag behind the non-GSEs in serving very low-income borrowers. This does not mean that they do not serve very low-income borrowers at all; rather, it means that the GSEs serve very low-income borrowers in smaller numbers than they probably should. However, among the very low-income borrowers whose loans are purchased by the GSEs, where do they locate? If these very low-income borrowers tend to locate in significantly better neighborhoods with better demographic, housing, and employment characteristics, then it would suggest that the borrower-based approach to directing credit to needy populations is aiding the mobility of these borrowers. This mobility may be helping them move to better neighborhoods, although this may be furthering the movement of households out of the inner city toward the suburbs. Alternatively, if these very low-income borrowers tend to locate within the underserved neighborhoods, then it would suggest that the efforts to direct credit to the poor are also serving the mortgage credit needs of the inner city.

To make this determination it is necessary to quantify the characteristics of the housing markets where GSEs' very low-income borrowers are locating and compare these characteristics to those of the non-GSEs' very low-income borrowers. Exhibit 9 makes these comparisons for the year 1996.

Generally, the GSEs are purchasing loans made to very low-income borrowers who locate in neighborhoods that have more desirable demographic, housing, and employment characteristics than is true for the non-GSEs. This was found for all 4 years studied (1993 through 1996), but there appears to be a trend over the years. The trend is for the differences between the tract characteristics of the GSEs' low-income borrowers to be less different from those of the non-GSEs' over time. This narrowing of the gap seems to be due to the GSEs' purchasing loans that are less and less selective over time rather than due to any significant change in the performance of the non-GSEs. Even with this gap between the GSEs and the non-GSEs, it is important to recognize that the differences between them are not large in all areas. Many of the comparisons generate mixed results either across the various comparison groups or over the years examined.

Specifically, in all 4 years across all non-GSE comparison groups, the GSEs' loans to very low-income borrowers were located in tracts with higher median incomes and lower levels of poverty. There were mixed results in the comparisons of the concentrations of minorities as well as the incidence of elderly and female-headed households. Similarly, the GSEs' very low-income borrowers were located in tracts with higher median value homes and higher percentages of owner-occupied housing. There were mixed results in the comparisons of the percentages of new and pre-1940 housing as well as the appreciation rates, the presence of public transit, and the percentage of single-family housing. The GSEs' very low-income borrowers were located in tracts with generally lower levels of unemployment and greater rates of job growth within the tracts. There were mixed results in the comparisons of numbers of jobs with the GSEs' very low-income borrowers locating in tracts with greater numbers of jobs in the years 1993 through 1995, but in 1996, the GSEs' and non-GSEs' very low-income borrowers located in tracts with similar numbers of jobs.

Exhibit 9

Characteristics of Tracts Where Very Low-Income Borrowers Purchased Homes, 1996

Average Tract Characteristics	GSEs			Non-GSEs		
	All	Fannie Mae	Freddie Mac	All	FHA Eligible	Conforming Market
Average population descriptors						
Median income (\$)	36,437	35,657	37,688	34,444	34,397	35,590
Below poverty (%)	9.51	10.52	7.89	10.51	10.54	10.24
Minority (%)	17.05	19.93	12.42	16.66	16.73	15.40
Elderly (%)	10.10	10.51	9.44	9.92	9.94	9.41
Female-headed households (%)	11.66	12.35	0.55	12.31	12.33	12.07
Average neighborhood descriptors						
Owners (%)	57.13	56.39	58.33	55.01	55.00	53.10
Median value (\$)	60,731	58,580	64,184	56,601	56,478	60,080
Appreciation median value (%)	47.35	49.21	44.14	45.72	45.76	45.16
Structures built, 1989–90 (%)	1.68	1.49	1.97	1.73	1.72	1.87
Structures built, pre-1940 (%)	16.75	19.57	12.22	16.73	16.78	17.72
Single-family structures (%)	72.93	73.02	72.78	71.30	71.27	69.92
Number of buses, all routes	225.24	255.71	176.32	225.89	227.21	182.82
Average job market descriptors						
Workforce unemployed (%)	5.94	6.27	5.42	6.21	6.23	6.06
Total jobs, 1990	1,889	1,879	1,904	1,946	1,947	2,034
Growth in jobs, 1980-90 (%)	51.52	41.99	66.81	45.81	45.68	56.37
Number of agriculture, mining, construction, and utility jobs, 1990	333	330	337	366	367	402
Number of manufacturing jobs, 1990	219	223	213	256	256	267
Number of FIRE/ ^a government jobs, 1990 ^a	936	951	913	939	938	983
Number of retail jobs, 1990	400	376	441	385	385	382
Average market penetration by lenders						
Loans as a percentage of owner units	12.93	12.19	14.12	14.52	14.44	17.83
Percentage of borrowers in						
Underserved tracts	44.19	47.66	38.59	51.97	52.14	47.46
Tracts with low-lending levels	9.22	12.71	3.63	8.29	8.38	8.09
Number of borrowers	1,024	628	396	2,050	2,039	931

^a FIRE = finance, insurance, and real estate

In terms of the level of mortgage lender activity in the tracts where the very low-income borrowers located, the results were mixed. The GSEs' borrowers located in tracts with higher to comparable levels of loans as a percentage of owner-occupied units. Similarly, the percentages of GSEs' borrowers found in underserved and low lending areas were generally below or on a par with that of the non-GSEs' borrowers.

GSE Performance With the Borrower-Based Approach: Where Do Minority Borrowers Locate?

Exhibit 10 repeats the analysis of the borrower-based approach for minority borrowers. In general, the GSEs' minority borrowers are found to reside in more desirable neighborhoods than do minority borrowers from the non-GSE lenders. This is assessed in terms of the demographic characteristics of the residents, the value of the housing, the employment opportunities, and the level of other lending activity.

The comparisons of population factors show that the GSEs' minority borrowers are located in tracts with higher median household income levels, lower levels of poverty, and fewer female-headed households. Interestingly, the minority borrowers do not seem to be located in tracts where minorities dominate the population. In 1996 the GSEs' borrowers were located in tracts with an average of 23 percent of the population comprised of minorities. The non-GSE borrowers were also located in tracts with 23-percent minority population, well below a level of dominance. This comparison finds the minority borrowers locating in tracts that are on a par with the metropolitan area's average of about 23-percent minority population.

The comparisons of housing factors show that the GSEs' minority borrowers are located in neighborhoods with significantly higher median home values than for non-GSE minority borrowers. The GSEs' minority borrowers' tracts also have higher rates of growth of the housing stock with more recently built units, but the tracts have about the same incidence of older, pre-1940 units. The GSEs' minority borrowers also were located in tracts with lower levels of public transit service.

The comparisons of employment factors generally find the GSEs' minority borrowers to have located in neighborhoods with greater employment opportunities. The numbers of jobs are typically greater in the tracts where the GSEs' minority borrowers located. The rate of growth of jobs is also much higher in the GSEs' minority borrower tracts than in the non-GSEs' tracts.

The GSEs' minority borrowers located in tracts with higher levels of lender activity, with an average of 20 percent of the owner-occupied homes having loans originated. This is above the 17-percent average for the non-GSE borrowers. The GSEs' minority borrowers generally had smaller proportions of their loans in the underserved tracts and tracts with low levels of lending. Here the differences were dramatic. The spread between the GSEs and the non-GSEs was 9 percentage points for the underserved areas. Only in 1996 did the GSEs outperform the non-GSEs in the low lending tracts. In that year, the GSEs had 13.6 percent of loans from minority borrowers located in the low-lending tracts compared to 11.1 percent for the non-GSEs.

Multivariate Models: Which Factors Explain the Variation Between the GSEs and the Industry?

The various comparisons examine only single factors independent of the influence of the other factors. The comparisons suggest which factors are important, but taken together, it is unclear which factors seem to explain the differences between the performance of the

Exhibit 10

Characteristics of Tracts Where Minority Borrowers Purchased Homes, 1996

Average Tract Characteristics	GSEs			Non-GSEs		
	All	Fannie Mae	Freddie Mac	All	FHA Eligible	Conforming Market
Average population descriptors						
Median income (\$)	41,840	40,226	44,527	38,515	35,495	40,234
Below poverty (%)	9.19	10.42	7.15	9.73	10.78	10.30
Minority (%)	22.77	26.58	16.43	23.08	25.91	23.65
Elderly (%)	8.91	9.08	8.62	8.96	9.16	8.86
Female-headed households (%)	11.84	12.93	10.03	12.48	13.54	12.57
Average neighborhood descriptors						
Owners (%)	59.25	58.76	60.07	58.72	57.94	56.98
Median value (\$)	74,754	70,802	81,334	65,895	58,080	71,286
Appreciation median value (%)	751.23	53.48	47.50	45.58	45.32	48.1
Structures built, 1989–90 (%)	2.87	2.66	3.23	2.26	1.48	2.80
Structures built, pre-1940 (%)	13.97	16.45	9.83	13.59	15.09	15.74
Single-family structures (%)	72.20	72.76	71.26	72.10	72.50	69.89
Number of buses, all routes	233.68	262.77	185.25	258.19	292.00	248.77
Average job market descriptors						
Workforce unemployed (%)	5.81	6.31	4.97	6.16	6.52	6.19
Total jobs, 1990	1,867	1,834	1,921	1,701	1,645	1,844
Growth in jobs, 1980–90 (%)	111.39	95.81	137.31	72.67	48.36	98.82
Number of agriculture, mining, construction, and utility jobs, 1990	358	355	363	320	303	368
Number of manufacturing jobs, 1990	207	188	240	227	226	234
Number of FIRE/government jobs, 1990 ^a	961	959	963	820	780	916
Number of retail jobs, 1990	341	332	355	334	336	327
Average market penetration by lenders						
Loans as a percentage of owner units	20.18	18.46	23.03	16.76	12.50	21.15
Percentage of borrowers in						
Underserved tracts	34.39	39.50	25.88	43.46	49.40	42.26
Tracts with low-lending levels	13.63	16.77	8.43	11.06	12.93	12.78
Number of borrowers	1,325	827	498	2,361	2,007	945

^a FIRE = finance, insurance, and real estate

GSEs relative to the industry. To address this issue, a set of multivariate models have been prepared to explain the variation in the GSE performance relative to the performance of the lending industry as a whole.

Exhibits 11 through 14 describe a set of models that have been estimated using various samples. In each case, the dependent variable calibrates the GSE loans as a percent of all loans for the census tract. This dependent variable ranges widely. When this variable has a low value, it indicates that the GSEs have not played a strong role in purchasing loans for the sample in question. In effect, the non-GSEs have disproportionately provided the credit to this segment of the market. When this variable has a high value, it indicates that the GSEs perform strongly relative to the non-GSE lenders. The variation in the dependent variable has been explained by a set of variables that correspond to the population, housing, employment, and lending activity variables used in the earlier comparisons. The models have been estimated for four different samples: for all tracts to proxy the place-based approach; for all borrowers to proxy the borrower-based approach; for all very low-income borrowers; and for all minority borrowers. Models have been estimated separately for the years 1993 through 1996 for each sample.

Of primary concern with the estimation of these models is the identification of which independent variables are significant and appear to explain the greatest share of the variation in the GSEs' share of total lending.

It has been well established in prior research that the GSEs have lagged behind the primary lending industry in their underwriting of home mortgage loans to targeted areas and to targeted populations. The analysis reported here suggests that the performance of the GSEs in the Kansas City metropolitan housing market corresponds to the national findings, with the GSEs favoring loans in neighborhood markets where the housing stock has high value and enjoys strong growth. Thus, it is expected that the housing market descriptors will be significant and directly associated with a higher level of GSE entry into the market. Better housing is expected to explain greater GSE lending as a share of total lending, as good underwriting would predict.

While not a part of the underwriting process, the demographic makeup of each tract may influence the level of GSE participation in a market. If the GSEs are responding to the place-based programs by directing credit into traditionally underserved areas, there should be a direct relationship between the presence of low-income households and GSE share of lending. Similarly, there should be a direct relationship between the presence of minority households and the GSE share of lending.

However, this research focuses on evaluating alternative public policy approaches, the place-based and the borrower-based methods of directing credit flows. One of the central concerns of this evaluation is to distinguish whether or not such matters as employment opportunities play a strong role in guiding a borrower's home purchase decision. If employment opportunities are found to be inversely associated with GSE activity in the tract-level analysis, then the place-based approach would appear to be directing credit to areas where the long-term interests of the homebuyers are diminished. Alternatively, if employment opportunities are directly associated with the GSE activity with the borrower-level analysis, then the borrower-based approach would appear to be helping borrowers locate where they not only can have good homes but good chances for finding permanent employment.

Analysis for All Tracts. Generally, these models, summarized in Exhibit 11, are not strong (R^2 scores range from .47 for the 1993 model to .23 for the 1995 model), but they

Exhibit 11

Multivariate Analysis of GSE Loans as a Percentage of Total Loans— Tract Level Analysis: All Tracts

Independent Variables	1993	1994	1995	1996
Population descriptors				
Median income (\$)	-0.0002	-0.00001	-0.00032*	-0.00024
Below poverty (%)	0.109	0.24	-0.02487	-0.196
Minority (%)	0.072	-0.04385	0.116*	0.222**
Elderly (%)	-0.09959	-0.186	0.0159	0.001133
Female-headed households (%)	-0.429*	-0.206	-0.108	-0.258
Neighborhood descriptors				
Owners (%)	0.237*	0.126	-0.297**	-0.323**
Median value (\$)	0.0003**	0.000135*	0.000227**	0.000227**
Appreciation median value (%)	-0.011	-0.007216	-0.00061	-0.00371
Structures built, 1989–90 (%)	-0.199	-0.41	-0.196	-0.07729
Structures built, pre-1940 (%)	0.059	0.09944*	0.08136*	-0.0354
Single-family structures (%)	-0.197**	-0.144*	0.247**	0.2332**
Number of buses, all routes	0.003*	-0.00098	-0.00097	0.000814
Job market descriptors				
Workforce unemployed (%)	-0.111	0.311	-0.739**	-0.264
Total jobs, 1990	0.0002	0.0003	0.00042	-0.0001377
Growth in jobs, 1980–90 (%)	0.004	0.0077*	0.004092	0.00345
Market penetration by lenders				
Loans as a percentage of owner units	0.112*	-0.0453	-0.03005	-0.035
Underserved tracts	-9.43**	-7.537**	-3.327*	-6.994**
Tracts with low-lending levels	2.403	2.618	1.892	4.702
Constant	53.191**	44.823**	32.877**	39.358**
Number of tracts	343	347	342	363
R²	0.467	0.241	0.227	0.271

*Indicates significant at better than the .05 level.

**Indicates significant at better than the .01 level.

are adequate for cross-sectional analysis such as this. As expected, the housing and neighborhood descriptors tend to be the dominant independent variables in each model because they generate statistically significant coefficients. However, the signs of these coefficients are not always as expected, possibly due to the high level of multicollinearity among the various variables. For example, the variables measuring the percentage of owner-occupied housing within the tract and the variables measuring the percentage of the stock in single-family structures seem to pair in each model with sign reversal. Collectively they explain

some variation in the share of GSE loans among total loans, but the values of the individual coefficients are suspect given the strong correlation between these two independent variables.

Very few of the variables describing the demographic characteristics of populations in the tracts passed the significance test, and none passed consistently over the 4 years tested.

The employment variables did not prove to be significant in either direction in any consistent manner. The variable measuring public transit service—a proxy for access to employment—did not prove to be significant in any consistent manner either. This suggests that the character of the housing market, in terms of the value of the housing and the presence of single-family, owner-occupied housing, dominates the tract-level models. It further suggests that the issues of employment and access to employment are not strong factors in evaluating the GSEs' performance in directing credit.

However, the pattern of the coefficients for the dummy variables for underserved tracts is of interest. In all 4 years, the coefficient for this variable is negative and significant at better than the .01 level. This suggests an inverse relationship between the level of GSE lending and the underserved area. Typically, the GSEs' share of loan ranges from 3.3 to 9.4 percent lower than the non-GSEs, controlling for the characteristics of the population, the housing stock, and employment opportunities in the tract. This suggests that the GSEs are not lending based solely upon underwriting concerns. Rather, they are avoiding the underserved tracts of the metropolitan area.

Analysis for All Borrowers. This particular set of models, summarized in exhibit 12, generates some difficulty. Given the sample sizes, almost all variables prove to be statistically significant. However, the independent variables that contribute most to the explanatory power of the models (as measured by the values of the standardized coefficients) indicate the factors that best describe the GSEs' tendencies in terms of where they purchase loans. The five variables that have the highest explanatory power in the models across all 4 years are the variables that describe the housing stock of the tracts. These variables are median value of owner-occupied housing, percent of the housing that is owner-occupied, percent of the stock that is single family, percent of the stock built in 1989 to 1990, and location within the underserved area.

The coefficients for these variables suggest that standard loan underwriting concerns drive the GSE loan process. The GSEs have a tendency to purchase loans only in "safe" areas where the housing stock is of high value and the stock is growing. However, the coefficient for the variable indicating whether or not the home is located in the underserved area is significant and negative in all models. This suggests that, controlling for the other factors describing the tracts, the GSEs tend to purchase loans located outside of the underserved area.

Analysis for Very Low-Income Borrowers. This set of models, summarized in exhibit 13, uses only the low-income borrowers in the analysis. Here again, the housing variables seem to dominate as the important factors describing the level of GSE activity in the tracts where the low-income borrowers have purchased homes. Noticeably absent from these models is the contribution of the variables describing the employment characteristics of the tracts. This suggests that the GSEs tend to purchase loans made to very low-income borrowers whose homes are located in areas with strong housing values but that the GSEs are not influenced by whether these homes are in underserved areas or are located in close proximity to employment.

Exhibit 12

Multivariate Analysis of GSE Loans as a Percentage of Total Loans— Borrower Level Analysis: All Borrowers

Independent Variables	1993	1994	1995	1996
Population descriptors				
Median income (\$)	-0.00012**	-2E-08**	-0.00013**	-6.4E-06
Below poverty (%)	0.346**	0.25**	-0.07913**	-0.07946**
Minority (%)	-0.126**	-0.167**	0.0753**	0.07028**
Elderly (%)	-0.03135**	-0.154**	-0.09943**	-0.06258**
Female-headed households (%)	-0.682**	-0.492**	-0.491**	-0.47**
Neighborhood descriptors				
Owners (%)	0.347**	0.235**	-0.219**	-0.222**
Median value	0.000162**	0.000075**	0.00013**	0.000111**
Appreciation median value	-0.008**	-0.00579**	0.000452**	-0.0053**
Structures built, 1989–90 (%)	-0.629**	-0.608**	-0.507**	-0.178**
Structures built, pre-1940 (%)	0.0528**	0.09243**	0.0673**	0.03966**
Single-family structures (%)	-0.246**	-0.201**	0.148**	0.137**
Number of buses, all routes	-0.00103**	-0.001852**	-0.00219**	-0.00196**
Job market descriptors				
Workforce unemployed (%)	-0.309**	0.527**	-0.309*	-0.216**
Total jobs, 1990	0.000216**	0.000147**	0.000128**	0.00004**
Growth in jobs, 1980–90	0.00358**	0.00645**	-0.00291**	0.00177**
Market penetration by lenders				
Loans as a percentage of owner units	0.104**	-0.00053**	-0.00302	-0.0175**
Underserved tracts	-6.754**	-6.346**	-2.649**	-4.375**
Tracts with low-lending levels	3.113**	10.263**	6.963**	12.393**
Constant	60.961**	48.529**	39.772**	43.109**
Number of borrowers	57,298	42,918	35,771	45,207
R²	0.542	0.317	0.256	0.303

*Indicates significant at better than the .05 level.

**Indicates significant at better than the .01 level.

Analysis for Minority Borrowers. This set of models, summarized in exhibit 14, uses only the minority borrowers in the analysis. As above, the housing value and single-family structure variables consistently dominate the model. However, there are some differences with this set of models. The coefficients for underserved tracts are negative and significant consistently across all years. This suggests that the GSEs play a larger role with minority loans outside of the underserved area. It appears that the GSEs purchase more loans with minority borrowers where there is a strong housing market and where there is movement away from the areas of the city traditionally underserved by the lending industry.

Exhibit 13

Multivariate Analysis of GSE Loans as a Percentage of Total Loans—
Borrower Level Analysis: Very Low-Income Borrowers

Independent Variables	1993	1994	1995	1996
Population descriptors				
Median income (\$)	-0.0007**	-0.00069**	0.000265*	-0.00009
Below poverty (%)	0.175	-0.132	-0.192*	-0.534**
Minority (%)	-0.6374	-0.171**	0.0607*	0.101**
Elderly (%)	-0.04702	0.08319	0.506**	0.124
Female-headed households (%)	-0.461**	0.13	0.719**	-0.155
Neighborhood descriptors				
Owners (%)	0.721**	-0.06756	-0.397**	0.01834
Median value (\$)	0.0001423*	0.0004395**	0.00034**	0.00324**
Appreciation median value (%)	-0.00537	-0.03805	0.00138	0.145**
Structures built, 1989–90 (%)	-0.167	-0.179	-0.423**	-0.582**
Structures built, pre-1940 (%)	-0.069*	0.05173*	0.0955**	0.106**
Single-family structures (%)	-0.547**	0.108*	0.286**	-0.0618
Number of buses, all routes	0.00836**	0.001143	-0.00753**	-0.001456
Job market descriptors				
Workforce unemployed (%)	-1.313**	0.453*	-0.625**	0.323*
Total jobs, 1990	0.00003778	0.0001	0.000263	-0.000564**
Growth in jobs, 1980–90	0.002339	0.00437	0.01055**	0.00069
Market penetration by lenders				
Loans as a percent of owner units	0.06104	-0.193**	-0.236**	-0.126**
Underserved tracts	-7.507**	-8.653**	2.646**	-1.52
Tracts with low-lending levels	6.475**	-3.929*	5.449**	9.29**
Constant	62.78**	35.802**	28.132*	19.06**
Number of borrowers	2,287	2,814	2,792	3,063
R²	0.207	0.18	0.184	0.155

*Indicates significant at better than the .05 level.
**Indicates significant at better than the .01 level.

Conclusions and Policy Implications

This analysis of the Kansas City metropolitan area suggests that efforts to encourage the GSEs to direct credit to areas traditionally underserved by the mortgage lending industry and to direct credit to low-income and minority borrowers is meeting with mixed success. In general, the GSEs are, at best, indifferent to whether loans originate within the under-

Exhibit 14

Multivariate Analysis of GSE Loans as a Percentage of Total Loans—Borrower Level Analysis: Minority Borrowers

Independent Variables	1993	1994	1995	1996
Population descriptors				
Median income (\$)	-0.000389**	-0.000134	-6.6E-05	-0.00022*
Below poverty (%)	0.78**	-0.14	-0.213**	-0.253**
Minority (%)	-0.01767	-0.238**	0.06766*	0.172**
Elderly (%)	-0.659**	-0.142*	-0.113*	0.05639
Female-headed households (%)	-0.245	0.0962	-0.145	0.06568
Neighborhood descriptors				
Owners (%)	0.119	0.063	-0.389**	-0.297**
Median value (\$)	0.000116**	0.00022**	0.00014**	0.00027**
Appreciation median value (%)	-0.0323**	0.0145**	0.0214**	0.0306**
Structures built, 1989–90 (%)	-1.094**	-0.253*	0.04825	-0.248**
Structures built, pre-1940 (%)	-0.12**	-0.101**	0.166**	0.173**
Single-family structures (%)	-0.22*	-0.156**	0.183**	0.227**
Number of buses, all routes	0.004**	0.0007	-0.00165	-0.004575**
Job market descriptors				
Workforce unemployed (%)	-0.828**	1.227**	-0.474**	-0.377**
Total jobs, 1990	0.0006437**	0.0006**	-0.00011	0.005706**
Growth in jobs, 1980–90	0.0056**	0.00328*	0.0001	0.01138**
Market penetration by lenders				
Loans as a percentage of owner units	0.0693**	-0.09745**	-0.0633*	-0.004887
Underserved tracts	-15.674**	-5.17**	-5.429**	-9.795**
Tracts with low-lending levels	7.846**	6.717**	4.377**	11.016**
Constant	48.418**	39.218**	39.456**	24.985**
Number of borrowers	2,879	3,037	3,211	3,670
R²	0.488	0.219	0.116	0.242

*Indicates significant at better than the .05 level.

**Indicates significant at better than the .01 level.

served areas. However, the GSEs are helping very low-income and minority borrowers to purchase homes in neighborhoods that enjoy strong housing and employment opportunities. These housing and employment opportunities are better than those found in the underserved areas. In broad brushstrokes, this suggests that the place-based approach (sending mortgage credit to specific neighborhoods) is not working well, but the borrower-based approach (sending mortgage credit to targeted populations) is working well.

This does not mean that the place-based approach of attempting to bring credit to traditionally underserved areas is without merit. The analysis of the Kansas City housing and employment markets makes it clear that there are areas that have not received their full share of mortgage credit. These tracts tend to have poorer populations, lower value housing, and fewer employment opportunities. The underserved area is, however, quite broad, encompassing about one-half of the tracts within the metropolitan area. Such a broad definition of underserved tends to dilute the effectiveness of the efforts to direct credit where it would not otherwise go. A more narrow approach to identifying the neighborhoods of the metropolitan area that suffer from insufficient mortgage lending suggests that about one-sixth of the neighborhoods in the metropolitan area have very low levels of lending within their boundaries. The tracts with low levels of lending are, however, markets that can be characterized as having low housing value, as having low or declining employment, and as having populations with high concentrations of poverty and minorities. This then seems to be the crux of the problem with identifying areas in need of additional mortgage credit. If the definition is broad, many areas that have strong housing and employment markets will be included. But this very inclusive definition results in designating areas as underserved that experience normal levels of mortgage lending activity. If the definition is narrow, including only those areas that truly receive very little mortgage lending, then these areas often contain poor housing and few employment opportunities. The execution of the GSE Act of 1992 has opted for the broader approach, but as this research has shown, the GSEs have had mixed success at meeting the act's goals.

The alternative approach to directing mortgage credit—the borrower-based approach—has shown some promise. With this approach, mortgage credit is directed to the two targeted populations of very low-income households and minority households. It appears that these very low-income and minority borrowers are using the available mortgage credit to purchase homes in neighborhoods with strong housing and employment markets. It is true that these target populations locate in neighborhoods with lower housing values, greater poverty, higher unemployment, and fewer jobs than is true for the market as a whole. However, these target populations do locate in neighborhoods with generally stronger demographic, housing, and employment characteristics than are found in the areas that are designated as underserved.

How did the GSEs perform in the Kansas City area in serving the twin approaches to influencing the flow of mortgage credit? It would appear that the GSEs have experienced greater success in assisting the targeted populations than they have in assisting the underserved areas. Generally, the GSEs purchase loans in those tracts with higher levels of household income, higher median home values, and higher numbers of jobs than did the conventional lenders. Thus, the GSEs tend to purchase loans in tracts outside the underserved areas.

The GSEs tend to lag behind the industry in the proportion of loans made to very low-income and minority borrowers. Thus, the GSEs do not target poor and minority borrowers as well as the other primary mortgage lenders. However, this does not mean that the GSEs fail to purchase loans originated with very low-income and minority lenders; rather, they have not led the industry in this regard. When loans to very low-income and minority

borrowers are purchased, these loans tend to be located in strong neighborhoods. The GSE loans to very low-income households are located in tracts with better home values and larger numbers of jobs than are found with the non-GSE loans or are found in the underserved areas. The GSE loans to minority borrowers are located in tracts with much higher home values and household income levels. They have larger numbers of jobs and much stronger job growth. But with either target population, very low-income borrowers or minority borrowers, the proportions of GSE loans to the underserved areas are below those of the non-GSEs.

The multivariate models suggest that the GSEs' performance is driven by standard underwriting concerns, that is with making loans in areas with strong housing markets. At the tract level, the GSEs' level of participation in the lending within each neighborhood is influenced primarily by the underlying value of the housing involved, and not with the employment conditions that exist in these neighborhoods. At the borrower level, the GSEs' level of participation in lending can be described as a "flight to safety." Among all borrowers, the GSEs play the strongest role in the mortgage markets where the loans are located away from the underserved areas. Similarly, among the low-income borrowers, the GSEs are strongest where the housing is of sound value, and the GSEs seem to be neutral to the employment opportunities. Among the minority borrowers, the GSEs are also strongest where the housing is of sound value, but there are weak indications that the employment opportunities do guide the investment decisions.

What does this analysis suggest with regard to the future regulation of the GSEs? The research results are not so definitive that strong, clear implications can be derived. The message of this research is mixed at best. However, the general conclusions are that directing mortgage credit to specific borrowers seems to generate better housing and neighborhood outcomes than is true with directing mortgage credit to specific neighborhoods. This would suggest that attention should be focused on improving the flow of credit to the target populations. The benefit of this approach is that it seems to be succeeding in helping very low-income and minority households obtain housing in neighborhoods that provide both good housing investment and good access to employment. The difficulty with this approach is that it is very hard to argue against the place-based approach.

The ongoing concern with revitalization of urban areas requires that government policies support the various efforts that foster the redevelopment of deteriorated areas. Certainly, access to mortgage credit in areas where there is a need for revitalization is one among many necessities for revitalization to succeed. Access to mortgage credit will not, in and of itself, bring about the redevelopment. For any deteriorated area to revive, the resident population will need income to pay for housing debt and to support area businesses. This income must come from jobs, and if the jobs are not present in the deteriorated areas, or are not readily accessible from those areas, then no amount of mortgage credit will make the revitalization possible. However, if an economic development policy can succeed in bringing jobs to these deteriorated areas, then it is important that adequate amounts of mortgage credit be available in these areas so that the economic development can have the desired spillover effects of investment in area housing.

However, this research suggests that a borrower-based approach works better. It suggests that borrowers in general, and very low-income and minority borrowers in particular, use the mortgage credit to locate in neighborhoods with strong housing markets that have housing of good value, with good rates of investment in new housing. These neighborhoods also have strong employment markets with high numbers of jobs, strong rates of job growth, and relatively low rates of unemployment. This means that these borrowers use the mortgage credit to move out of the central city and move to the better housing and employment prospects in the outlying areas of the city.

Author

Kirk McClure is an associate professor with the graduate program in urban planning at the University of Kansas. His teaching and research interests focus on low-income housing policy and finance. McClure has reviewed manuscripts for the Fannie Mae Foundation and also received a grant from the foundation for a study related to the low-income housing tax credit.

Notes

1. Quigley (1994), p. 103.
2. Very low-income is defined as income below 50 percent of the area median family income (AMFI), and low-income is defined as income below 80 percent of AMFI.
3. Minority households are defined as those households who are either non-White or Hispanic.
4. U.S. Department of Commerce (1994), table 1209, p. 733.
5. U.S. Department of Commerce (1994), table 749, p. 491.
6. This base analysis combining the GSE and non-GSE borrowers was performed only for 1996, rather than for 1993 through 1996, as little variation over time has been found.
7. The “jumbo” loan limits eliminate only the largest loans, generally those over \$200,000.

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Appendix

Data Description

The test site for this research is the Kansas City metropolitan area. Tract level and borrower data have been used to assess which of the two approaches better serves the public interest. The data include the GSE Public Use Database, the HMDA database, census data, Mid-America Regional Council data, and Kansas City Area Transit Authority data.

GSE Public Use Database. The GSE Public Use Census Tract Database has been acquired for the Kansas City metropolitan area. The data have been assembled for years 1993, 1994, 1995, and 1996. The GSE data are at the level of individual loans. For each year, the GSE data describe borrower's income, race, and the census tract where the home is located. The data have been aggregated to the census-tract level. By merging the borrower-level data with the census-tract data, it is possible to assess the demographic, housing, and employment characteristics of neighborhoods where the borrowers locate.

1980 and 1990 Census of Population and Housing. Data from the United States Bureau of the Census (STF3) have been assembled, providing descriptions of the housing stock and the populations that reside in each of the tracts in the Kansas City metropolitan area. These include:

- Population descriptors.
 - Median family income.
 - Percentage of the population that is below poverty.
 - Percentage of the population that is a member of a racial or ethnic minority.
 - Percentage of the population that is elderly.
 - Percentage of the households that is female-headed.
 - Percentage of the workforce that is unemployed.

- Neighborhood and Housing Stock descriptors.
 - Percentage of the housing stock that is owner-occupied.
 - Median value of the owner-occupied stock.
 - Percentage appreciation of the median value of owner-occupied housing, 1980 to 1990.
 - Percentage of the 1990 housing stock built in 1989 or 1990.
 - Percentage of the housing stock built before 1940.
 - Percentage of housing units in single-family structures.

Mid-America Regional Council. Employment data from the Mid-America Regional Council (MARC) have been assembled. This database counts the number of jobs in each census tract. These data are broken down by major employment sector. The database also provides information on the growth or decline in the number of jobs in each tract from 1980 to 1990. The MARC data include:

- Total employment in each tract in 1990.
- Percent change in employment from 1980 to 1990.
- Employment in 1990 in agriculture, construction, transportation, communications, and utilities.
- Employment in 1990 in manufacturing.
- Employment in 1990 in finance, insurance, real estate, and government.
- Employment in 1990 in retailing.

The coverage of the MARC data is not the same as the coverage of the GSE database. The GSE database includes some census tracts in outlying, essentially rural counties. As such, the analysis has been limited to those tracts where both GSE and MARC data are available. This includes 432 tracts in 8 counties. The tracts dropped from the analysis were located in outlying counties with very few housing transactions.

Home Mortgage Disclosure Act Data. HMDA data were obtained for the years 1993 through 1996 for the Kansas City metropolitan area. The data were extracted separately for each year from the national database published by the Federal Financial Institutions Examination Council. These data were Loan Application Records (LAR) for the Kansas City Missouri-Kansas metropolitan statistical area covering the eight counties in Kansas and Missouri covered by the MARC and GSE data. The LAR data cover many types of loan transactions for many purposes. The research reported here is interested only in homes purchased for owner occupancy. As a result, the LAR data were filtered, selecting only those records that describe:

- A loan for a home purchase (excluding loans for home improvements, refinancing, and multifamily structures).
- A loan for owner occupancy (excluding all purchases for rental purposes).
- A loan that was originated by the lender or purchased by the lender (excluding all loan applications that were denied, withdrawn, or otherwise did not close).

In addition, the LAR data records include many records for which some of the fields include errors. These errors include quality errors and/or validity errors. Records with either type of error have been discarded from this analysis.

The selected LAR data records were aggregated to the level of census tracts. For each tract, summary fields have been created describing:

- The total number of loans closed in the tract.
- The count of borrowers with income less than 50 percent of AMFI.
- The count of borrowers who are members of racial or ethnic minorities.

Kansas City Area Transit Authority. The Kansas City Area Transit Authority operates the area's primary public transit system, which is a series of bus lines. Data on the location and frequency of these lines have been made available. Each census tract has been rated in terms of the bus access by evaluating the number of lines and the frequency of the bus service. The rating describes the buses serving each census tract from all routes within the tract during a normal working day.

