SAVI REPORT

Using SAVI Home Mortgage Data to Understand the Indianapolis Housing Market

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Introduction

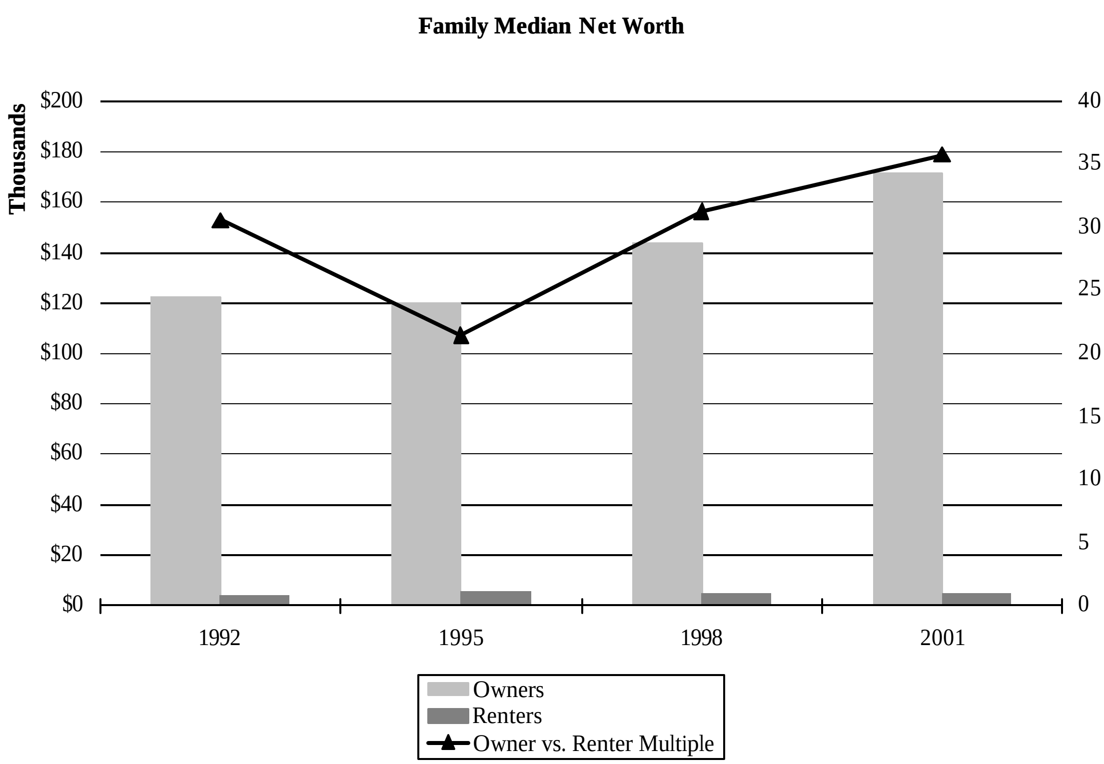
Affordable housing is an issue that concerns everyone. Central Indiana has not experienced the housing boom that affects other regions, especially in coastal areas, but costs are rising here as well. How affordable is housing for residents of the Indianapolis MSA?

SAVI can help answer this question through data provided by the Home Mortgage Disclosure Act, a law that requires reporting of federally-guaranteed loans. HMDA data are available for 1990-2004.

Mortgage data are important for two reasons: at a micro-level, access to mortgage credit is a critical component of household economic well being; at a macro-level, mortgage debt is a significant part of overall economic activity.

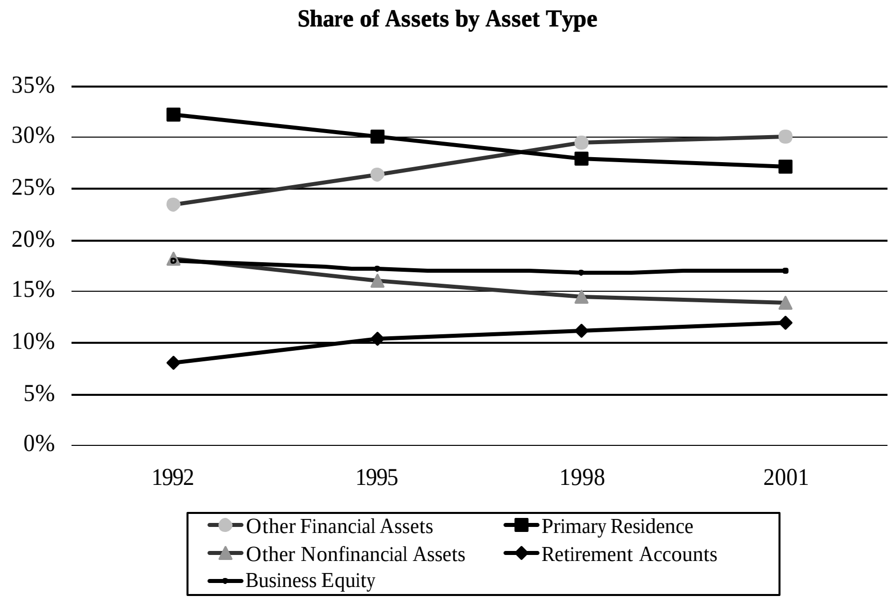
At the micro-level, the Survey of Consumer Finances (SCF) provides an overview of household economic well being and indications of needs that may exist among the community (Aizcorbe, Kennickell, and Moore 2003). Figure 1 shows the national median net worth of owners and renters. As shown in this chart, the reported median net worth of owner households was approximately 35 times greater than renter households.

Figure 1: Median Net Worth of Owners and Renters



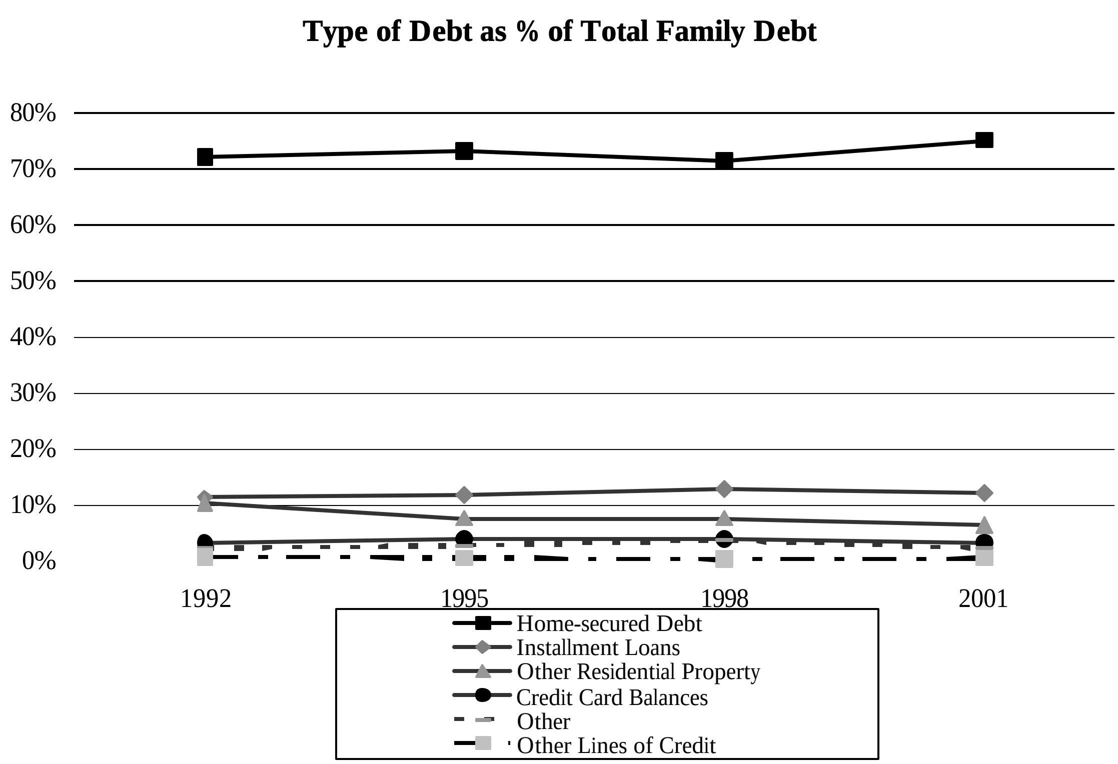
Primary residences provided approximately 27 percent of assets for households in 2001, even though this percentage is declining as a proportion of overall assets relative to retirement accounts and other financial assets. However, the declining share of assets provided by primary residences may reverse itself in the 2004 SCF survey based on two factors: consistently rising home prices and a neutral stock market since 2001. Offsetting these two market factors is an aging population in their primary retirement savings stage. (See Figure 2.)

Figure 2



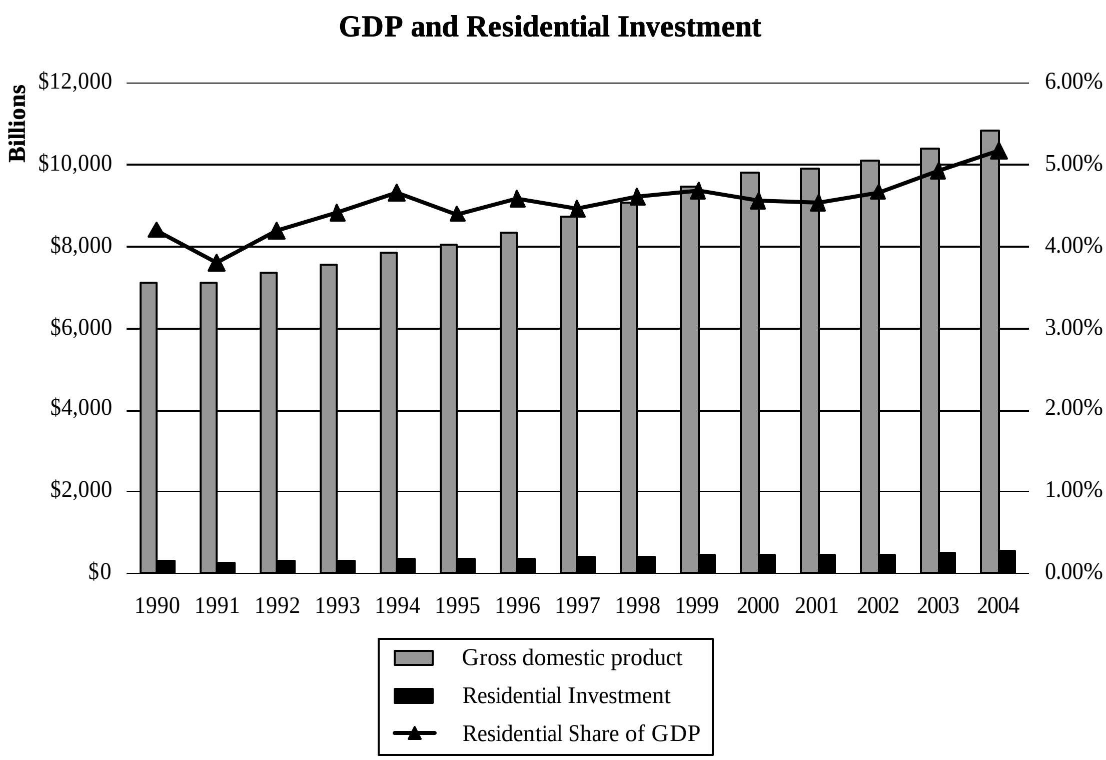
So how do households fund these assets? Mortgage debt is overwhelmingly the primary source of leverage for households. Further, mortgage debt grew as a percentage of all household debt between the 1992 and 2001 SCF surveys from 72 to 75 percent. (See Figure 3)

Figure 3



At the macroeconomic level, residential investment (i.e., the purchase of homes as residences) as a percentage of gross domestic product (GDP) expanded through the 1990s (Bureau of Economic Analysis 2004).[1] Mortgage debt as a percentage of all debt stood at a fairly high rate in the early 1990s, declined during the mid 1990s, and has climbed consistently since the late 1990s to nearly 20 percent (Board of Governors of the Federal Reserve System 2004). The 2003 level is one of the highest levels on record (i.e., 1965 and 1980's levels were slightly higher). (See Figure 4) Consequently, mortgage debt is important at both the micro- and macro-levels for policy makers, analysts, and the general public.

Figure 4

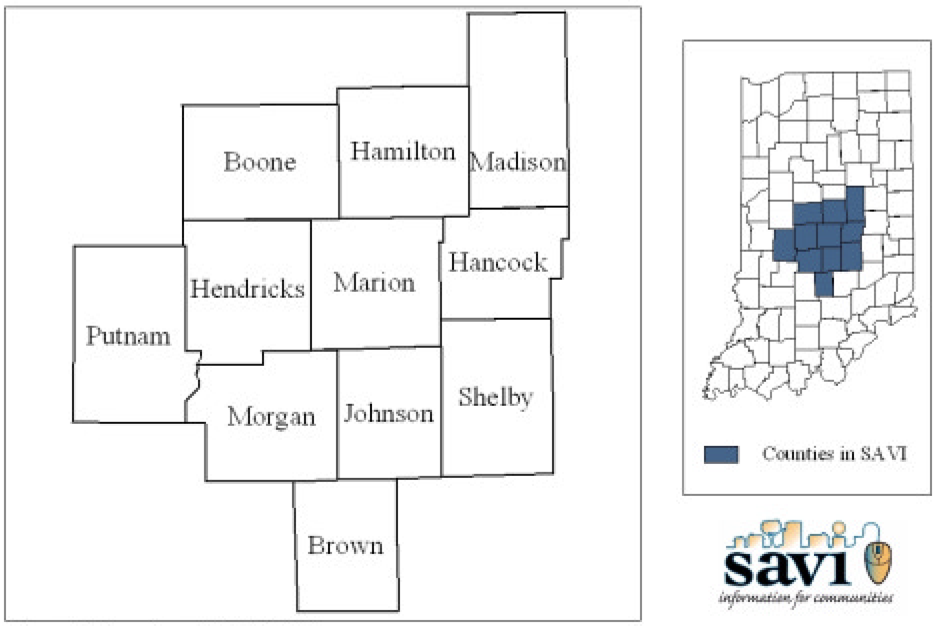


Data Analysis

Home Mortgage Disclosure Act (HMDA) data is one of the most useful sources for demonstrating general trends, clarifying preconceived notions of borrower and lender behavior, and pointing to areas of future research for mortgage markets, even though it can only point to possible cause and effect relationships rather than providing definitive evidence. This report reviews twelve years of HMDA data by census tract for the expanded Indianapolis metropolitan area. The expanded metropolitan area includes all the counties in the previous metropolitan area definition (Marion, Madison, Hamilton, Boone, Hendricks, Morgan, Johnson, Shelby, and Hancock) plus two recent additions (Putnam and Brown). Map 1 shows the location of these counties in Indiana. This report uses the following descriptions to categorize the metropolitan area: "urban core" meaning the area within the I-465 beltway, "suburban" meaning the areas immediately outside I-465 in Marion County and surrounding counties, and "exurban" meaning the areas outside the suburban areas and closer to the outer edges of the metropolitan area.

[1] The chart for GDP reflects real GDP using chained (2000) dollars obtained from www.freelunch.com.

Map 1: Indianapolis Metropolitan Area (SAVI Area)



Source: U.S. Census Bureau, TIGER Files, 2000.

Data

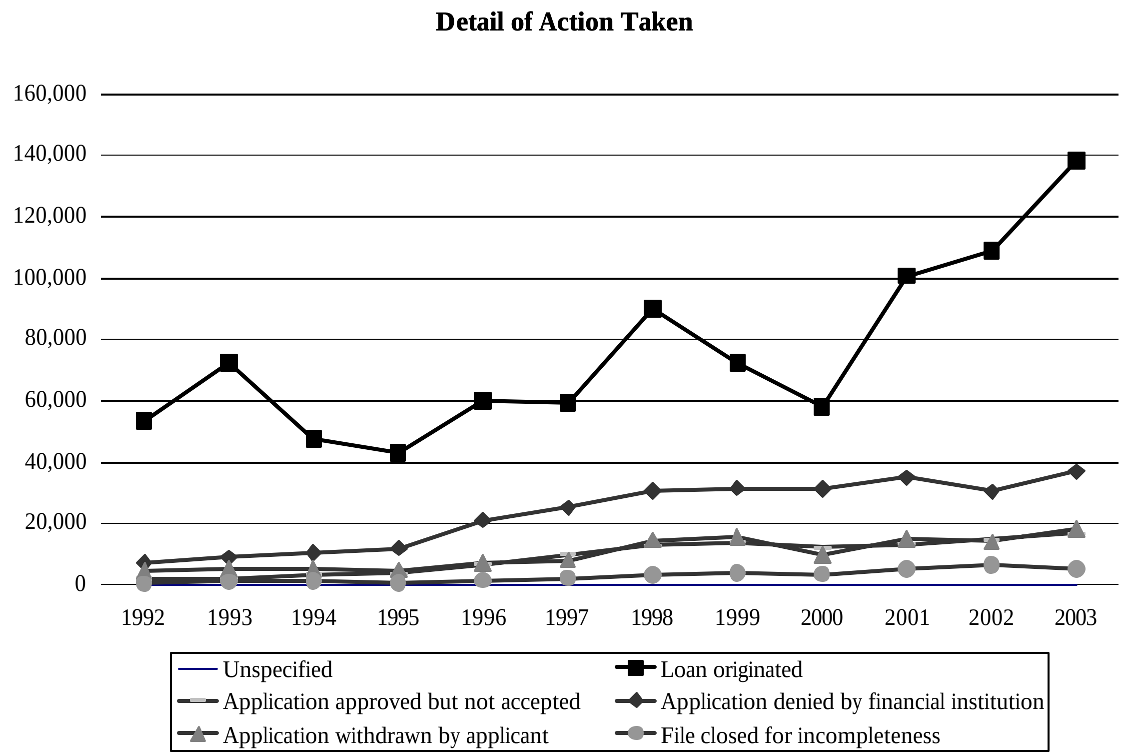
The mortgage data used in this report was obtained from the Federal Financial Institutions Examination Council and is similar to data contained in SAVI. There are several significant modifications needed to simplify the existing dataset and narrow the focus to traditional lending situations. Consequently, the dataset used in this report eliminates all observations where:

- applicant income was in excess of $1 million
- the loan amount was in excess of $1 million
- the ratio of loan amount to applicant income exceeds 5x
- the application was coded for non-owner occupancy or occupancy information was not available
- the loan purpose was for something other than purchase, refinance, or home improvement (e.g. multi-family)
- loans were purchased by one institution from another (these observations are not included in SAVI's datasets and are not included in the data used for this report either)

Mortgage Loan Application Originations

There are two broad categories of mortgage applications: applications that are eventually originated (i.e., applications that ultimately become loans) and those that are not. The top line of the chart in Figure 5 shows the number of originations per year, a number that more than doubled between 1992 and 2003. Part of this increase is likely because of better data gathering, changes in reporting requirements, etc., but part of this increase likely reflects a more active mortgage market as illustrated previously with the macroeconomic charts. There have been several significant fluctuations during this time period that are counter to the overall trend. Specifically, the 1993 to 1995 time period and the 1998 to 2000 time period showed declines in origination activity. The other lines in the chart show the detail behind applications that are not originated (i.e., not originated due to denial by the lender, an incomplete application, an application approved by the lender but not accepted by the applicant, an application withdrawn by the applicant, and unspecified causes).

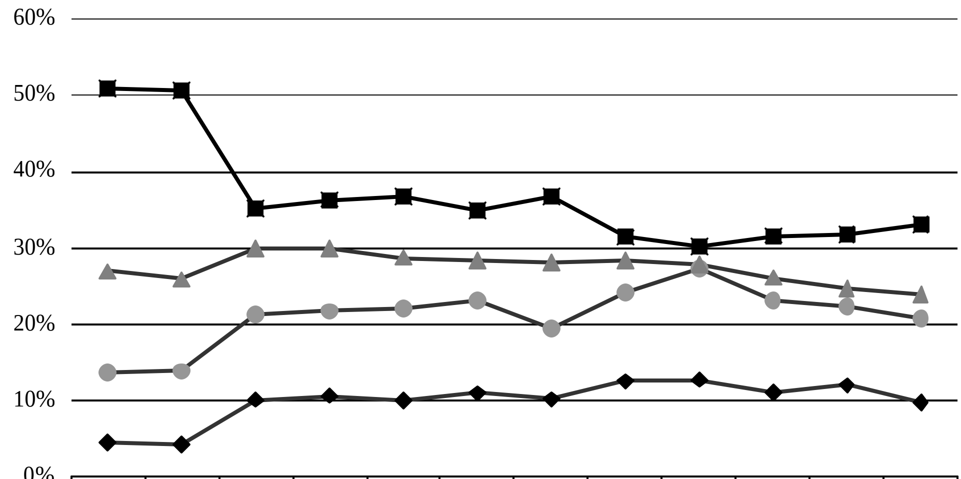
Figure 5



The "Percent of Originations by Income" chart in Figure 6 provides the subsets of origination activity by income category based on HUD's median family income estimate for each county for each year. For example, the "Low" category represents mortgage application originations for applicants with incomes less than 50 percent of the area median income, the "Moderate" category represents 50 to 80 percent, the "Middle" category represents 80 to 120 percent, and the "Upper" category represents applicant incomes over 120 percent of the area median income.

Figure 6

% of Originations by Income



	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
Low Income	4%	4%	10%	11%	10%	11%	10%	12%	13%	11%	12%	10%
Moderate Income	14%	14%	21%	22%	22%	23%	19%	24%	27%	23%	22%	21%
Middle Income	27%	26%	30%	30%	29%	28%	28%	28%	28%	26%	25%	24%
Upper Income	51%	51%	35%	36%	37%	35%	37%	31%	30%	32%	32%	33%

The shares of originations by income category changed dramatically between 1993 and 1994. This trend partially reversed in 2000 as the Upper Income category gained shares and the Low, Moderate, and Middle Income categories lost shares. These two time periods are accompanied by significant decreases in overall originations followed by significant subsequent growth (shown in Figure 5). As noted in Figure 7, these two time periods also experienced noticeable changes in mortgage interest rates.[2]

[2] Interest rate chart reflects 30-year fixed rate conventional conforming mortgages as reported by Freddie Mac's weekly interest rate survey.

Figure 7

Mortgage Loan Applications "Not Originated"

The map (See Appendix, Exhibit 1: "Not-Originated Rate by Income) shows the "not originated" rate for a given income category in a given year, which is calculated as the applications "not originated" for a given income category and year divided by the number of all applications within that income category and year.

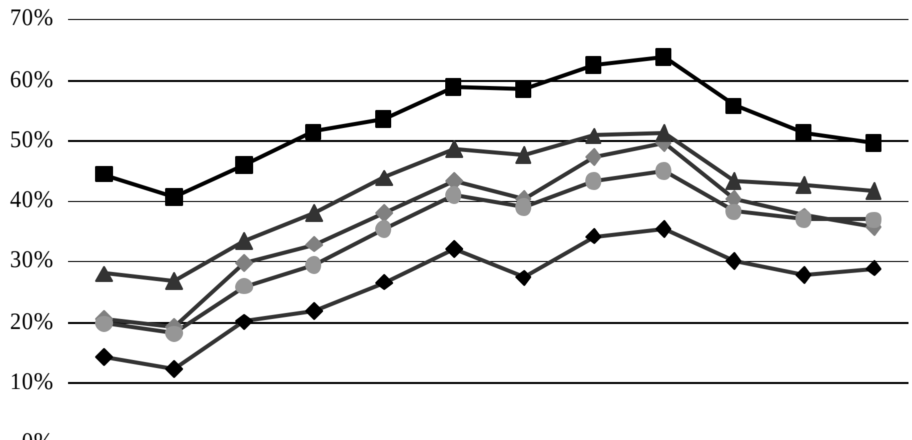
This ratio is comparable to a "denial" rate, except that there are additional reasons a loan may not be originated in addition to a typical denial: the application was approved but not accepted by the applicant; the application was closed for incompleteness; or the application was withdrawn by the applicant. Consequently, the "not originated" rate is broader than a denial rate because the not originated rate reflects mortgage loan applications that were not successfully completed by the borrower or lender for a variety of reasons in addition to denials.

The bottom row of Exhibit 1 shows the distribution of not-originated rates for All loan applications. The number in the lower right-hand corner of each thumbnail map shows the not-originated rate applicable to the specific category (i.e., row) for a given year. The numbers next to each thumbnail map match the not-originated rates in the chart in Figure 8. Consequently, the maps in "Exhibit 1: Not-Originated Rate by Income" reflects the same data as in Figure 8 but from a geographic perspective.

The maps are shaded based on how the not-originated rate in a particular census tract for a given category and year compares to the average not-originated rate for the "All Applicaitons" category over the 1992 to 2003 time period. The lightest shaded areas indicate that the not-originated rate for that census tract in that year in that income category exceeds one (1) standard deviation less than the mean (i.e., mean not-originated rate of 40.6 percent minus one standard deviation of 15.95 percent). The darkest shaded areas indicate that the not-originated rate for that census tract in that year in that category is more than one (1) standard deviation more than the mean (i.e., mean plus one standard deviation).

Figure 8

"Not-Originated" Rate by Income



	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
Overall Rate	21%	19%	30%	33%	38%	43%	40%	47%	50%	40%	38%	36%
Low Income Rate	44%	41%	46%	51%	53%	59%	59%	62%	64%	56%	51%	50%
Moderate Income Rate	28%	27%	33%	38%	44%	49%	48%	51%	51%	43%	43%	42%
Middle Income Rate	20%	18%	26%	29%	35%	41%	39%	43%	45%	38%	37%	37%
Upper Income Rate	14%	12%	20%	22%	27%	32%	27%	34%	35%	30%	28%	29%

Several general conclusions become apparent by reviewing the "All" category. First, not-originated rates increased dramatically in 1994, continued to rise through the 1990s, and then started to drop after 2000. These turning points are similar to the turning points we noted previously when discussing originations. Second, higher not-originated rates were somewhat concentrated in a few urban core areas in the first half of the 1990s (i.e., look for darkly shaded areas in Exhibit 1: Not-Originated Rate by Income) but were more heavily concentrated in urban areas by 2003. Third, the middle ranking (i.e. within -/+ one standard deviation of mean) is widely dispersed throughout urban, suburban, and exurban areas by 2003.

Not-Originated rates increased across all income categories from 1992 through 2003 (i.e., the maps generally shift from lightly shaded in 1992 to darkly shaded in 2003). However, this overall trend masks a general increase through the 1990s and significant declines since 2000 as shown in Figure 8 (or in the numbers in the lower right corner of each thumbnail of Exhibit 1). Also note that the changes in not-originated rates generally occur across all income categories. The previously discussed micro- and macro-level data suggested that mortgage debt was increasing in overall importance and further research could examine if this shift is due to how households use debt (e.g., higher loan-to-values), how lenders provide debt (e.g., more aggressive marketing), or some combination of the two.

Exhibit 1 also shows that each income category has high not-originated rates in urban areas regardless of year. "Low" income applicants also experience high concentrations of not-originated rates in various exurban areas. Though more difficult to notice, the reverse appears to happen in the north suburban area where not-originated rates are consistently low, regardless of Income category. In other words, there appears to be something consistently different about the mortgage market in specific geographic areas even after considering income. Consequently, policies related to non-originations that focus on geography (e.g. providing more flexible mortgage credit in urban areas) may be applicable to all income groups whereas policies related to non-originations that focus on low income households are applicable in both urban and exurban areas.

HMDA data also allow you to analyze mortgages by Race/Ethnicity, Loan Purpose, and Lender Type. Exploring these data with SAVI allow you to view their dispersion across the Indianapolis metropolitan area geographically, identifying spatial patterns and trends over time.

Conclusions

HMDA data reveal that the number of loan originations per year more than doubled between 1992 and 2003. The shares of originations by income category changed dramatically between 1993 and 1994, when the upper income category lost a significant share of the originations. Between 1994 and 2000, originated loans came in relatively stable percentages from all income classes, only to assume a bias toward higher income borrowers. In 2000, the upper income category gained shares and the other income categories lost shares. The geography of mortgage debt also is clear, with suburban and exurban areas assuming an increasingly large percentage of this activity.

HMDA data provide a significant amount of detail regarding mortgage loan applications. This detail includes the length of time the data have been available, the variables contained in the data, and how these variables are interpreted. However, HMDA allows an analyst to see the outcomes of the lending process but does not provide the information necessary to explicitly replicate the borrower/lender decision making process. There are multiple ways to interpret the trends noted and further research is required on many topics prior to drawing specific conclusions.

General conclusions and areas for future research include:

- Much insight can be gained into the mortgage market by analyzing the data in categories such as income, race/ethnicity, loan purpose, and lender type as there are often opposing trends by category compared to the overall data.
- The ability to map these data through the SAVI Community Information System is relevant to this type of analysis because there are significant and recurring geographic patterns (e.g., urban areas experience concentrations of not-originated rates across multiple subcategories of analysis).
- Not-Originated rates continue to be concentrated in the urban core and some exurban areas. This result cuts across Income, Race/Ethnicity, Loan Purpose, and Lender Type categories, suggesting that there is a significant underlying dynamic that may be geographically oriented.
- Not-Originated rates vary widely by category.
- Significant turning points appear in the data around 1994 and again around 2000. Both time periods experienced significant declines in overall origination activity and increases in interest rates.

Additional analysis could incorporate multifactor econometric studies that consider outcomes based on applicant characteristics (e.g., income, race, gender, etc.) and neighborhood characteristics (e.g., median income, market activity, etc.). Also, a more detailed geographic study that considers each county individually may be relevant and would likely show identifiable patterns within a given county. Such types of analysis may be particularly useful in understanding the turning points in 1994 and 2000, making more accurate predictions, and developing effective policies to mitigate potential undesirable outcomes.

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AUTHOR PROFILE

Todd Sears is Director of Finance at Herman & Kittle Properties, Inc. Previously, Todd served as Executive Vice President of the Indiana Neighborhood Housing Partnership, where he oversaw the single-family lending, multi-family lending, and research departments. His work at INHP led to: completion of approximately $25 million of mortgage sales/securitizations; creation of two bank-financed loan pools, each over $20 million; and, reinstituting research as a formal component of INHP's activities.

Prior to joining INHP, Todd served in two different areas of state government: first in various positions at the Indiana Housing Finance Authority (IHFA), including Deputy Director, Tax Credit Administrator, and Director of Finance and Development, and second as the Executive Secretary of the Indiana State Board of Tax Commissioners. While at the Tax Board, Todd focused on policy issues related to residential property and reassessment.

Todd received a Bachelor of Science in Finance from the Honors Program of the Business School at Indiana University and graduated with Distinction. In 2002, he received a Masters in Economics from Indiana University. He is currently pursuing the Chartered Financial Analyst designation through the CFA Institute as a candidate.

APPENDIX

Glossary[3]

Application: An oral or written request for a home purchase loan, a home improvement loan, or a refinancing that is made in accordance with procedures used by the financial institution for that particular type of credit. The following are excluded: loans made or purchased in a fiduciary capacity; loans on unimproved land; construction loans and other temporary financing; purchase of an interest in a pool of mortgages; purchases solely of servicing rights; loans that, although secured by real estate, are made for purposes other than home purchase or home improvement, or refinancing; the acquisition of only a partial interest in a home purchase or a home improvement loan by the institution; and, prequalification requests for mortgage loans.

Census Tract: A census tract is a small geographic area. The 2000 census assigned census tract numbers to all areas of the U.S. and some U.S. territories and possessions. Census tract numbers are unique within a county. The census tract numbers reported in HMDA were verified against a list of valid census tracts provided by The Polis Center.

Depository Institution: A bank, savings association, or credit union.

Dwelling: Any residential structure (whether or not it is attached to real property) including an individual condominium unit, cooperative unit, or mobile or manufactured home. This excludes recreational vehicles and transitory residences (e.g. dormitories, hotels, and hospitals).

Exurban: A geographic area that is part of a larger metropolitan area but outside the boundaries considered normal for a suburb. Generally, these areas are 10 or more miles from the city center, have a combination of new and long-term residences, and include agricultural land uses that have become transitory because of residential and commercial development.

Home Improvement: Any loan to be used, at least in part, for repairing, rehabilitating, remodeling, or improving a dwelling (or the real property on which the dwelling is located) and that is classified by the reporting institution as a home improvement loan. The term applies to both secured and unsecured loans and includes refinancings of home improvement loans. However, home equity credit lines are reported at the reporting institution's option.

Mortgage: A document that creates a lien upon real estate as security for payment of a specified debt (Friedman, Harris, and Lindeman 2004).

Not-Originated: An application for a loan whose outcome is other than "originated". This may include an application withdrawn by the borrower, approved by the lender but not accepted by the borrower, denied by the lender, or closed for incompleteness by the lender.

Origination: An application for a loan that is closed or settled.

Pre-approval: A request for credit by a loan applicant that includes the following behavior by an institution under an established pre-approval program: comprehensive analysis of the creditworthiness of the applicant; a written commitment to the applicant, valid for a designated period of time, offering to extend a home purchase loan up to a specified amount; and a written commitment that contains standard contingencies (see HMDA regulations for more detailed explanation of contingencies).

[3] Definitions were generally taken verbatim from the Federal Financial Institutions Examination Council (2003).

Prequalification Request: A request by a prospective loan applicant (other than a request for pre-approval) for a preliminary determination of whether the prospective applicant would likely qualify for credit under an institution's standards, or on the amount of credit for which the prospective applicant would likely qualify.

Purchase: Any loan secured by and made for the purpose of purchasing a dwelling. This includes a loan secured by one dwelling that is used to purchase another dwelling. Sometimes referred to as "home purchase".

Refinancing: A new obligation that satisfies and replaces an existing obligation. If the existing obligation is not satisfied and replaced, but is only renewed, modified, extended, or consolidated, the transaction is not a refinancing for HMDA.

Standard Deviation: A parameter or statistic that provides an indication of the dispersion of data. For normally distributed data, one (1) standard deviation plus and minus the mean should contain 68.3 percent of the observations (Webster 1998).

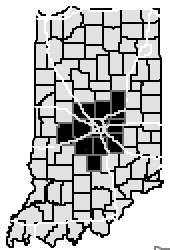
Subprime and Manufactured Housing Lender: Definitions vary widely depending on source. This report uses the definition provided by the Department of Housing and Urban Development (HUD) when creating the list of subprime and manufactured housing lenders. HUD's list is compiled annually from trade publications and HMDA data analyses. Factors considered include higher denial rates, lower origination rates, and high shares of home refinance loans. Then, lenders are called or their websites reviewed to determine if they specialize in subprime or manufactured housing lending. In cases where lenders reported both prime and "not prime" (i.e. subprime and manufactured housing) lending activities, lenders were identified as subprime and manufactured housing lenders if the lender reported that subprime and manufactured housing comprised at least 50 percent of their conventional business.

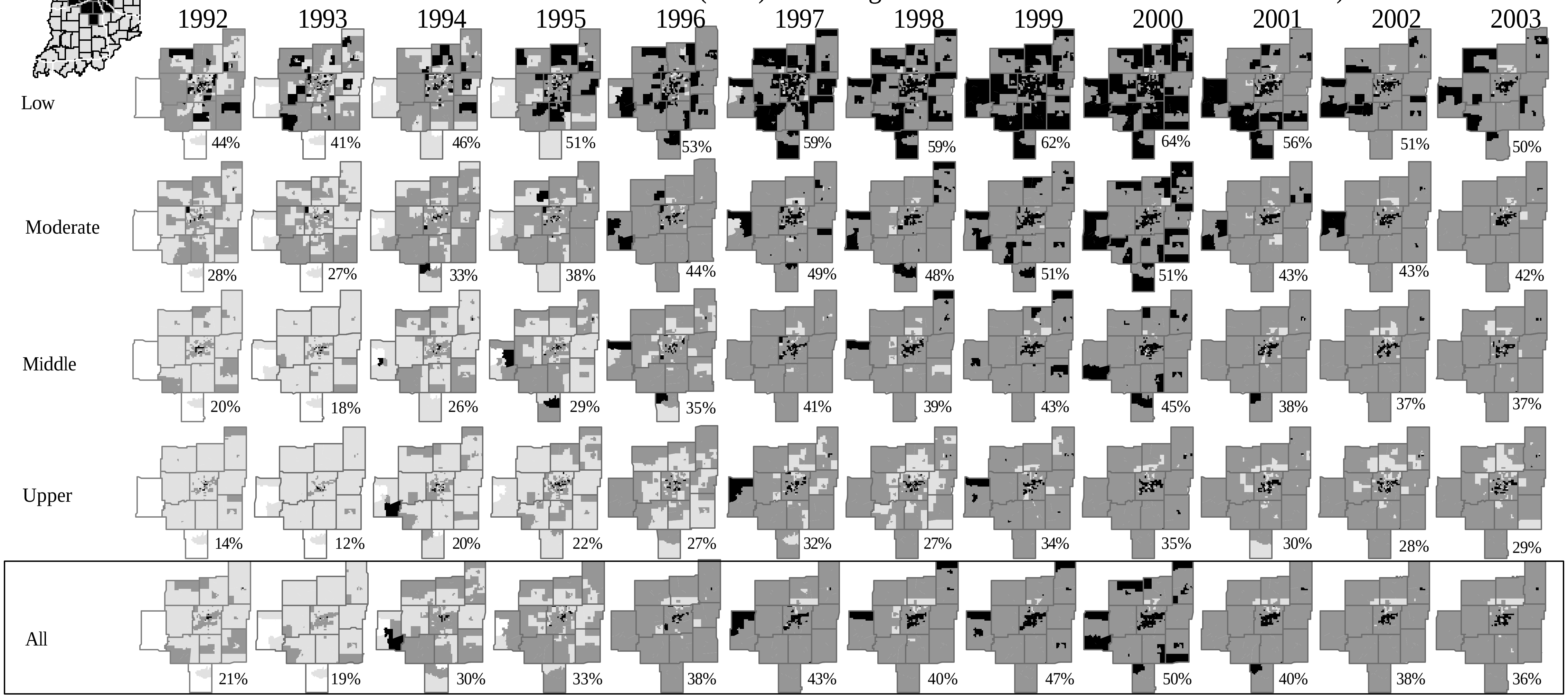
Suburban: A geographic area beyond the traditional city center, typically integrated into the existing interstate network, that provides both residential and commercial land uses. Generally, these areas cross county boundaries, have relatively short commuting distances (i.e. approximately 20 to 25 minutes), and older but well maintained housing.

Urban: A geographic area that serves as the traditional city center for commercial and residential activities. Typically contained within a single county.

Exhibit 1: "Not-Originated" Rate by Income

(shading based on more than -1 std. dev. of mean (light), within -/+ 1 std. dev. of mean (medium), or more than +1 std. dev. of mean (dark) "not-originated" rate for "All" from 1992 - 2003)





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