Joint Center for Housing Studies

Harvard University

Estimating Economic Impacts of Community Lending

J. Michael Collins, Eric S. Belsky, Micky Tripathi

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J. Michael Collins is a Performance Analyst, Campaign for Home Ownership 2002, at the Neighborhood Reinvestment Corporation; Eric S. Belsky is Executive Director of the Joint Center for Housing Studies of Harvard University; and Micky Tripathi is a doctoral student at Massachusetts Institute of Technology (MIT).

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Abstract

This paper provides a step-by-step approach to understanding and estimating the economic benefits of helping lower-income households buy and own their first home. The economic benefits of services provided by community-based nonprofit organizations, such as pre-purchase education, affordable home financing, and post-purchase assistance, are explained. A reproducible methodology is described that organizations can use to estimate the approximate value of the economic benefits associated with their activities. Although not a measure of net benefits that account for offsetting costs, the methodology described here gives nonprofit organizations an important tool that helps demonstrate their value to their business partners, government, and the public.

Estimating Economic Impacts of Community Lending

by

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Executive Summary

This paper provides a step-by-step approach to understanding and estimating the economic benefits of helping lower-income households buy and own their first home. The economic benefits of services provided by community-based nonprofit organizations, such as pre-purchase education, affordable home financing, and post-purchase assistance, are explained. A reproducible methodology is described that organizations can use to estimate the approximate value of the economic benefits associated with their activities. The term "economic benefit" used in this analysis is a **gross measure**—offsetting costs incurred by homeowners, businesses or government are not included. Although not a measure of net benefits, the methodology described here gives nonprofit organizations an important tool that helps demonstrate their value to their business partners, government, and the public. The economic benefits listed below are described and estimated in this paper.

Helping families buy their first home creates:

- Benefits for buyers who are successful in building home equity: Buyers potentially gain economic benefits by building equity through house price appreciation and paying off their mortgage principal, assuming they do not default on their mortgage.
- Benefits for lenders from originating mortgages: Lenders receive revenues from loan interest and origination fees.
- Benefits for home improvement and furnishing-related businesses due to changes in household spending: First-time home buyers consume more home and housing-related goods and services than other households.
- Benefits for real estate firms and local governments from home sales: Local governments, real estate and other firms receive fees or collect taxes each time a home sale takes place.

Financing the construction and rehabilitation of homes creates:

- Benefits for builders, contractors and other businesses from construction revenues: Building or renovating homes in distressed neighborhoods provides additional revenues for building contractors and suppliers, who in turn purchase additional goods and services and support jobs in the local economy.
- Benefits for the local economy when net additional households move in: New homes, renovated vacant units, and multiple units created from single units may result in net additions to the number of families in a community. As these families spend part of their income in the local economy, benefits accrue to local businesses and those that work for them.

Helping financially troubled households maintain homeownership creates:

- Benefits for owners, who are spared default through counseling: By helping families avert foreclosure and remain in their homes, homeowners avoid substantial losses of home equity.
- Benefits for lenders, who avoid foreclosure-related costs: By keeping mortgage loans from foreclosing, lenders avoid the high legal and other costs associated with taking and selling off a mortgaged home.

Although the gross economic benefits of community lending programs will vary from case to case, a simple illustration suggests that these benefits can be substantial. Assume that a community-based organization invests $1 million to rehabilitate 100 homes (at an average of $10,000 per home) and sells these to 100 first-time home buyers, all of whom would have remained renters without the intercession of the organization. The buyers have average household incomes of $25,000 and purchase homes with average home prices of $50,000 with a $48,500, 30-year, fixed-rate mortgage at 7 percent interest. Assume further that the rehabilitation of the 100 units, ten of which were vacant, creates a net addition of ten households in the local area. Under these assumptions, which are typical of many neighborhood homeownership and revitalization efforts, the effort would produce an estimated $120,774 in government revenues from taxes and fees on construction spending and on home sales. In addition, the effort would generate an estimated $1,339,387 million in

revenues for local business from construction spending, fees and commissions associated with the home sales, and a first-year surge in spending by the new homeowners on furnishing and sprucing up their homes. On top of these initial gross benefits, the homeownership program would create about $850,000 in home equity for the 100 owners and $1.6 million in revenues for their lenders if annual house price appreciation averages 3 percent and the owners remain an average of ten years before moving. Also, the addition of ten new households would support about five full-time jobs (50 full-time equivalents over 10 years) and about $260,000 in additional government revenues.[1]

Summary of Economic Benefits	
One-Time Benefits	
Lender Revenues from Loan Fees (1.5 points/fees):	$48,500
Fees and Commissions for Real Estate Brokers (6% fees):	$300,000
Title Insurance Premiums (0.25% sale price)	$12,500
Transfer and Title Fees for Local Governments (1.25% sale price):	$62,500
Other Fees Related to Home Sales (fixed legal fees, etc):	$60,000
Added "Move-In" Spending by Households (based on $25,000 income):	$232,200
Local Economic Income from $1 million in Construction:	$686,387
Local Jobs Supported through Construction (FTE):	17
Government Taxes/fees from Construction:	$58,274
Total Costs Saved by Helping Families Avoid Foreclosure:	$147,560
Ongoing Benefits *	
Wealth Stored as Home Equity in 10 years (3% appreciation):	$855,200
Lender Revenues from Mortgage Interest over 10.5 years:	$1,590,400
Local Jobs Supported by Additional Households over 10 years (FTE):	50
Government Taxes/fees from Additional Households over 10 years:	$258,210
Grand Total: Dollars:	**$4,311,731**
Grand Total: Jobs:	**67**

* non-discounted

[1] All estimates are in current dollars and are not discounted back to present value.

Introduction

Lower-income households, those with incomes less than the area median income, are a significant segment of the home buying market. In 1992, only 28 percent of mortgage loans were made to lower-income households, but by 1996, the share of all mortgages made to these buyers rose to almost 40 percent.[2] A recent U.S. Housing and Urban Development (HUD) study finds that community-based, nonprofit organizations play an important role in helping guide lower-income home buyers through the home-buying process.[3]

One example of community-based nonprofit organizations that are aiding first-time home buyers is the Neighborhood Reinvestment Corporation's network of NeighborWorks® organizations. Using Full-Cycle Lending℠ these community-based organizations provide a portfolio of services to first-time, lower-income home buyers, including pre-purchase education, affordable financing, and post-purchase assistance for current homeowners struggling to meet their mortgage payments.

Economic Benefits Defined

This analysis is designed to explain the gross economic benefits of this work and provide a reproducible methodology that community-based organizations, like those in the NeighborWorks® Network, can use to estimate the approximate value of the economic benefits associated with their activities. The term "economic benefit" used in this analysis is a gross measure, not a net measure accounting for offsetting costs incurred by businesses, government, or individuals. For example, lenders that generate interest income from mortgage loans also incur credit losses and administrative expenses to underwrite, originate, and service loans. This measure of gross benefits does not subtract these costs from revenues. Similarly, homeowners' maintenance costs are not considered, nor are the relative costs of renting a comparable property. Costs may also be incurred by businesses that do not stand to gain from consumption shifts from owning to renting. For example, as families move from rental units to owner-occupied units, for instance, landlords may lose revenue.

This analysis is therefore not intended to be a formal evaluation of the costs, benefits, risks, and returns of homeownership. Instead, it is designed to demonstrate that the services

[2] Freddie Mac analysis of HMDA data; *SMM* October 1997, 14(3).
[3] Successful Lending Industry Strategies: Volumes I and II, US Dept. Housing and Urban Development, 1998

provided by community-based organizations bring value to communities, generate revenues for businesses and governments, and can help families build assets. Depending on the costs of serving low-income home buyers, relative to others, businesses may still find serving this market is more or less profitable than other segments. However, this analysis provides a framework to begin to make that assessment.

The use of the methodology described in this paper presumes that organizations know how many home buyers they have assisted, how many homes they have built or rehabilitated, and how many borrowers have benefited from their post-purchase counseling. It is up to individual organizations to measure their own outcomes. Three areas of economic benefits are described in this report:

1. **The Economic Benefits of Helping Families Buy Their First Home**
   These benefits accrue to businesses that finance housing and are involved in home sales, businesses that sell housing-related products and services, and to homeowners themselves.
2. **The Economic Benefits of Financing the Construction and Rehabilitation of Homes**
   These are direct, indirect, and induced benefits generated by construction activity as well as by adding additional households to the local economy and tax base.
3. **The Economic Benefits of Helping Financially-Troubled Households Maintain Homeownership**
   These are the benefits to homeowners of avoiding default and curing delinquencies, as well as to lenders in terms of avoided costs.

The Economic Benefits of Helping Families Buy Their First Home

By partnering with lenders and providing assistance to potential home buyers, nonprofit organizations help to move families from rental housing to owner-occupied housing. Helping these families become home buyers spawns substantial economic benefits for families, lenders, real estate and home supply businesses, and local governments.

The economic benefits of helping lower-income families buy homes include the following:

- Benefits for buyers from building home equity: Buyers stand to benefit by building equity through house price appreciation and paying off their mortgage principal.

- Benefits for lenders from originating mortgages: Lenders receive revenues from loan interest and origination fees.
- Benefits for businesses that sell home improvement and other housing related goods and services due to changes in household spending: First-time home buyers consume more home and housing-related goods and services than other households.
- Benefits for real estate firms and local governments from home sales: Local governments, real estate and other firms receive fees or collect taxes each time a home sale takes place.

It is likely that some clients who receive counseling would have bought anyway. For these families, the home buyer services may accelerate their purchase by equipping them with knowledge about how to qualify for a loan. It is difficult to judge how decisive a part community-based organizations play in a family's decision to buy a home. A conservative assumption is that only those borrowers who received an interest rate subsidy or down payment and closing cost assistance would otherwise have remained renters. Other renters could and would qualify for a mortgage and buy a home in the absence of home buyer services. Community-based organizations wishing to use the tools described below will have to decide whether to adopt a similar assumption or also to count some share of aided buyers who did not receive financial subsidies among those who would not have otherwise bought a home.

Estimating the Value of the Home Equity Accrued by First-Time Buyers

Housing is the primary store of personal wealth for American families. According to the Census, 44 percent of the nation's wealth is held in the form of home equity.[4] The median wealth of a low-income homeowner under age 65 is 12 times that of a similar renter. Moreover, 66 percent of the total net worth of low-income homeowners is stored as home equity.[5] Over time, purchasing a home has proven to be an effective wealth-building strategy for millions of Americans. By paying a portion of mortgage principal each month, homeowners accumulate home equity as long as property values do not decline by a fully

[4] Cited in *Buying a New Home: A Solid Investment*, National Association of Home Builders and *Builder*
[5] 1995 *Consumer Finance Survey*.

offsetting amount. Most low-income households spend a third or more of their income on rent, none of which adds to their savings. By shifting spending to a home, these buyers take on the risk of default, a decline in house prices and sharply increase the costs of moving to another residential location. However, they also begin to save, simply because part of their mortgage payment pays down principal over time, accruing as home equity. Moreover, because homebuying is a highly leveraged investment, potential increases in the values of homes can bring rich returns on the money invested in a home in the form of a down payment. If a family purchases a home for $30,000 with a $1,000 down payment, and after one year the home appreciates 1 percent in value, it is then worth $30,300—a gain of $300. However, due to leverage, the buyer's original investment of $1,000 is translated into $1,300—a 30 percent return.[6] A home must appreciate by more than the transaction costs of buying and selling before they benefit from the power of leverage.

It is important to note, however, that home buyers also take on risk by investing in a home. They could default on their mortgage or home equity loans, losing their equity (and their primary source of savings). The value of the home could also increase slower than the rate of inflation or decline in value. Also, as described, the costs of selling a home entail expenses that reduce the amount of accrued home equity when it is realized upon sale. Even if a home sells for as much as 5 percent more than its original cost, selling a typical home in less than three years can entail more expenses than is gained in home equity and price appreciation.[7]

The wealth that owners build can be estimated by creating a table of all mortgage payments over the life of the loan. The amount of wealth that is accrued depends on three factors: (1) changes in the value of the home, (2) the length of time the owner remains in the home, and (3) the terms of the loan.

Predicting future home prices is inherently speculative. As with any investment, past performance does not assure future returns, but it does provide an indicator that informs expectations. Historically, regional home prices, as tracked by the U.S. Office of Federal Housing Enterprise Oversite (OFHEO), have risen since 1980, ranging from 2 percent for states in the mid-South to over 6 percent for states in New England.[8] But rates of house price

[6] Joint Center for Housing Studies, *The State of the Nation's Housing 1998.*
[7] Joint Center for Housing Studies, T*he State of the Nation's Housing 1998.*
[8] For recent house price data see: <http://www.ofheo.gov/house/usmap.html>

changes are variable. For example, home prices appreciated rapidly during the 1980s in New England so that someone who purchased a home in 1980 and sold it in 1998 would have experienced a 6.5 percent average annual rate of appreciation. But as a result of price declines in the late 1980s and early 1990s, someone who purchased a home in New England in 1990 and sold it in 1998 would have experienced less than a 1 percent average annual rate of appreciation (Table 1). In general, a 3 percent annual estimate is a conservative estimate, based on historical house price appreciation.

Table 1

Average Annual House Price Appreciation by Region			
	1980-1998 Average	1980-1989 Average	1990-1998 Average
VT, NH, ME, MA, RI, CT	6.5%	11.7%	0.7%
NY, PA, NJ	5.6%	9.2%	3.7%
WA, OR, CA, AK, HI	5.1%	8.1%	2.0%
WI, MI, IL, IN, OH	4.4%	4.0%	4.5%
MD, DE, DC, WV, VA, NC, SC, GA, FL	4.2%	5.4%	3.4%
MT, ID, WY, NV, UT, CO, AZ, NM	4.1%	2.4%	3.1%
KY, TN, AL, MS	4.0%	3.7%	2.7%
ND, MN, NE, IA, MO, KS, SD	3.5%	3.1%	3.7%
TX, OK, AR, LA	2.2%	1.3%	3.1%
United States	4.3%	5.6%	2.8%
Office of Federal Housing Enterprise Oversight, 1998			

The second component needed to calculate the equity homeowners accrue is the length of time they actually remain in their home. According to the 1993 and 1995 American Housing Surveys, one-third of all first-time home buyers move by the time they have lived in their home for 5 years. Another one-third of families will own their homes for more than 17 years. The median first-time home buyer, however, owns their home for 9 to 10 years (Table 2).[9] An analysis of buyers of lower-priced homes shows the same results. However, there is variation between the length of homeowning for lower-income and higher-income

[9] The AHS asks the year the buyer originally moved into the home. Based on this variable, a survival table estimated the probability of moving based on the previous and current move-in date of 1993 and 1995 owner-occupied units.

homeowners. According to the 1985 to 1995 American Housing Surveys, 47 percent of first-time, lower-income[10] home buyers who bought a home in 1985 sold it within 10 years. Meanwhile, 56 percent of higher-income buyers sold their homes within 10 years.[11] In general, 10 years is a reasonable estimate of the length of time a typical lower-income, first-time home buyer will own their first home.

Table 2

Length of Stay for First-Time Home Buyers

Years In Home	Percent Remaining in Home	Years In Home	Percent Remaining in Home
0	100%	11	46%
1	93%	12	44%
2	86%	13	43%
3	79%	14	40%
4	73%	15	38%
5	68%	16	37%
6	61%	17	36%
7	57%	18	35%
8	54%	19	33%
9	51%	20	32%
10	48%	21	32%

Joint Center tabulations of 1993-1995 American Housing Surveys using conditional probability survivor tables.

The final factors necessary to estimate the value of home equity that accrues to home buyers are the terms and interest rates used in a typical mortgage. According to the 1998 Chicago Title and Trust Company's *National Census of Recent Home Buyers*, 66 percent of home buyers use fixed rate mortgages, most with a term of 30 years. While using shorter terms and adjustable rate mortgages will lead to different levels of accrued wealth over time, using a 30-year fixed rate mortgage provides a reasonable estimate. Since most community lending uses 30-year mortgages in an effort to lower monthly carrying costs and fixed rate loans to avoid interest-rate driven payment shocks, this is a reasonable assumption.

[10] Lower-income home buyers are defined as those with less than the area median income, adjusted for family size; higher-income are greater than or equal to the adjusted median.

[11] Using the 1985, 1987, 1989, 1991, 1993 and 1995 American Housing Surveys, linked by unit control number, individual units and their owners were tracked over 10 years.

Based on assumptions about length of stay, house price appreciation, interest rates, and loan terms, the value of the home equity that accrues to home buyers over time can be estimated. For example, a $48,500 loan, at a 7 percent mortgage interest rate, held for 10 years, will generate $8,552 in home equity, assuming no house price appreciation. If house prices rise 3 percent annually, that equity grows to $25,748, as shown in Table 3. These figures include the initial down payment and do not subtract sales costs, which are generally 6 percent or more of the sales price of the home. Sales costs can wipe out home equity gains if house price appreciation is low and the home is sold within the first few years. To the degree that helping families buy their first home puts them on a lifelong homeownership path, the ultimate long-run benefits may be much higher.

Table 3

Build Up of Home Equity, Based on $50,000 House Price Including $1,500 Downpayment

7% Interest Rates

	Annual Rate of House Price Appreciation			
Years	0%	3%	6%	10%
3	$3,109	$7,746	$12,660	$19,659
5	$4,411	$12,375	$21,322	$34,937
10	$8,552	$25,748	$48,095	$88,240
15	$14,361	$42,259	$84,189	$173,223
20	$22,507	$62,813	$132,864	$308,882

How to Estimate the Value of Accrued Wealth for Home Buyers:

1. Estimate the total number of former renter families that became homeowners: _____
2. Estimate the appropriate interest rate for typical loans assisted and the average value of a typical mortgage. Find these value in the Appendix tables (page 27-29). Choose an expected house price appreciation rate and holding period; (3 percent and 10 years are reasonable estimates for most areas). Find the corresponding cell in the table:

   Result $_____
3. Multiply the total number of buyers your organization helped to become first-time home buyers (#1) by the typical equity accrued (#2).

   Total $_____

Estimating Lenders' Interest and Fee Revenues

Home buyer assistance programs bring low-income buyers into the mortgage market. Banks and mortgage companies benefit from lending to these new customers by earning interest on loans and collecting origination points and other fees.

In order to calculate the value of lenders' interest revenues, the speed of loan prepayments and defaults must be estimated. The life of a loan, accounting for these factors, is called its "weighted average life." Although low value, high loan-to-value ratio, "Community Reinvestment Act" (CRA) loans to low-income borrowers are a relatively new mortgage product, most analysts agree that these loans are slower to prepay than other mortgages since borrowers are less interest-rate sensitive and are often unable to afford the fees associated with refinancing. According to financial analysts who sell CRA mortgages to investors, a reasonable weighted-average life of these loans is approximately 10.5 years. [12] This is consistent with data from the American Housing Survey used to calculate the median length of stay.

Home buyer assistance programs run by community-based organizations primarily use two lending strategies. One strategy is to match buyers up with private lenders who provide

[12] Brown & Westhoff, 1997. Based on mortgage backed security experiences of Goldman Sachs

low-down payment mortgages—usually using a 97 percent loan-to-value ratio. The other strategy often used by home buyer programs is to offer second mortgages or grants that lower the value of the first mortgage to 80 percent or less of the house price—the level at which mortgage insurance is no longer needed. Both scenarios, can be easily modeled in order to estimate the value of the interest revenue that a first mortgage generates for lenders.

An 80 percent loan-to-value ratio (LTV) mortgage for a $50,000 home, at a 7 percent fixed-interest rate will generate $26,546 in 10.5 years; a 97 percent LTV loan will generate $32,188 in interest revenue, as shown in Table 4.

Table 4

Interest Revenue for Lenders

10.5 Year Weighted Average Life of Loan for $50,000 House

	Not Discounted		Discounted Present Value 5% COFI		Discounted Present Value 7% COFI	
Interest Rate	80% LTV	97% LTV	80% LTV	97% LTV	80% LTV	97% LTV
6%	$22,589	$27,389	$13,533	$16,409	$11,101	$13,460
7%	$26,546	$32,188	$15,904	$19,284	$13,046	$15,818
8%	$30,517	$37,001	$18,283	$22,168	$14,997	$18,184
9%	$34,488	$41,816	$20,662	$25,053	$16,949	$20,550
10%	$38,450	$46,620	$23,036	$27,931	$18,896	$22,911
11%	$42,394	$51,403	$25,399	$30,797	$20,834	$25,262

COFI is the 11th District FHLB Cost of Funds Index

Of course, most bankers will recognize that this value is not worth that amount to them today, since it is actually a flow of payments over more than a decade. However, this stream of payments can be calculated as a present value. The 11th District Federal Home Loan Bank's Cost of Funds Index (COFI) rate is often assumed to be one measure of lender discount rates. Assuming a 5 percent COFI rate, which is appropriate in the current market, almost $16,000 in interest revenue is generated per home buyer, using an 80 percent LTV mortgage. A 97 percent LTV results in over $19,000 in interest revenue on a net present value basis.

In addition to interest, lenders often charge origination fees in the year the loan is made. Points and fees vary by region and lender, but a typical borrower, according to a U.S. Federal Housing Finance Board analysis of existing home buyers in 1997, pays approximately one percent of the mortgage in loan-related fees. Applied to a $50,000 mortgage and an 80 percent LTV, lenders would receive $400 in initial fees per mortgage loan, or $485 using a 97 percent LTV. Table 5 shows lender fees based on a $50,000 house.

Table 5

Estimated Mortgage Origination Fees if Fees Average 1 Percent

$50,000 House		
	Mortgage	Origination Fees
80% LTV	$40,000	$400
97% LTV	$48,500	$485

Estimated Mortgage Origination Fees if Fees Average 1.5 Percent

$50,000 House		
	Mortgage	Origination Fees
80% LTV	$40,000	$600
97% LTV	$48,500	$728

Estimated Mortgage Origination Fees if Fees Average 2 Percent

$50,000 House		
	Mortgage	Origination Fees
80% LTV	$40,000	$800
97% LTV	$48,500	$970

Lenders receive other economic benefits from lending to lower-income buyers that are not quantified in this example. First, many buyers will hold their mortgages longer than the period used in this analysis. Second, of those that refinance their loans, it can be expected many will do so with their current lender. Finally, buyers may become interested in other financial products offered by the lender, such as home equity loans, lines of credit, money market or mutual funds, and new mortgages for their next home. Nearly half (47 percent) of those responding to a recent survey rated a prior or existing relationship with a lending firm as a very important factor in choosing a lender.[13] Equally important, however, is that these estimates are net of costs. While the COFI rate is one measure of a lender's opportunity cost of funds, lenders incur many operating and servicing expenses, as well as the bearing loan default risk. The estimates shown in these tables are the interest and fee revenues generated from borrowers, not the lender's net profit.

[13] "Americans Talk About Home Mortgage Providers," cited in *Secondary Mortgage Markets*, April 1997, Vol. 14, No. 1

How to Estimate the Interest and Fee Revenues for Lenders:

1. Estimate the appropriate interest rate for typical loans assisted and the average value of a house sold to a first-time buyer. Choose a loan-to-value ratio (80 or 97 percent LTV) and find the value of non-discounted interest revenue in the Appendix table (page 31): $_____
2. Find the present (discounted) value of that interest, using a COFI rate:[14] $_____
3. Find the value of loan fees of points in the Appendix table (page 31): $_____
4. Multiply the total number of buyers your organization helped to become first-time home buyers by the non-discounted interest revenue (#1), the discounted interest revenue (#2), and lender fees (#3).

   Total Non-Discounted: $_____

   Total Discounted (present value): $_____

   Total Lender Fees: $_____

Estimating Sales Revenue for Home Repair, Appliance and Furniture Businesses

Once renters become owners, their spending patterns change. By helping renters buy homes, new business is generated for retailers of home and building material products. New home buyers purchase more housing-related goods and services in the year they move into a home.[15] This change in household spending can be estimated using the 1995 Consumer Expenditure Survey. By comparing the quarterly expenditures of lower-income homeowners who moved in the last year to those that did not, this surge in spending can be quantified, as shown Table 6.

[14] The 11th District Cost Of Funds Index (COFI) rate is issued by the Federal Home Loan Bank of San Francisco at <http://www.fhlbsea.com/cd_dar.asp>, and published in "Federal Home Loan ARM Indexes" in the *Wall Street Journal*.

Table 6

"Move In" Effect on Household Spending for Lower-Income Families Buying a Home in the Last 12 Months: Shown as Increase in Spending Over a Non-Moving Family				
Type of Expenditure:	Additional Spending as a Percentage of Income	If Income $15,000	If Income $25,000	If Income $40,000
Home Maintenance & Insurance	3.7%	$555	$925	$1,481
Furniture	3.4%	$507	$844	$1,351
Appliances	1.4%	$210	$350	$560
Floor Coverings	0.5%	$82	$137	$218
Textiles	0.3%	$40	$66	$106
Total	**9.3%**	**$1,393**	**$2,322**	**$3,716**
Source: Joint Center tabulations Consumer Expenditure Survey quarterly data (1995)				

Overall, a household with $25,000 in income could be expected to spend over $2,300 more on home maintenance and insurance, appliances and furnishings than a similar owner who did not move.[16] If these families did not buy a home, they would have not made these expenditures at this same level. By helping families that would otherwise remain renters become homeowners, community-based programs support economic benefits for the businesses that provide these goods and services.

[15] This finding has been shown in several studies. Price Waterhouse (1992) found new home buyers spend more on household furnishings and home fix-up than other homeowners in the first year of ownership. Apgar (1987) found new owners spend more on maintenance, landscaping and remodeling than those who owned a home longer than 3 years. National Association of Home Builders found mover households spend more of their income than non-movers on housing items (Emrath, 1994).

[16] An analysis of the American Housing Survey finds that new buyers are likely to spend more on home improvements and additions. Recent lower-income movers are 5 percent more likely to remodel a kitchen or bath, for example. The net effect of this spending compared to non-movers is small (less than 0.3 percent). Moreover, the economic benefits of this construction activity are captured in other components of this analysis.

How to Estimate the Value of the "Move In" Effect for Home Repair, Appliance and Furniture Businesses:

1. Find the total spending for the estimated average income of your home buyers in the Appendix table (page 31)

	Per Household		For All Buyers
Maintenance and Insurance:	$_____	Total:	$_____
Furniture:	$_____	Total:	$_____
Appliance:	$_____	Total:	$_____
Floor Covering:	$_____	Total:	$_____
Textiles:	$_____	Total:	$_____

2. Multiply the total number of households buying homes by the left side column.

Estimating Fees and Taxes for Real Estate Businesses and Local Governments

Every home sale incurs transaction costs—real estate brokers' commissions, transfer taxes, and other fees, paid for by both the buyer and seller. As additional renters become home buyers, businesses and government receive additional revenues from these costs associated with a home sale.[17] To the extent community-based organizations help more families buy homes, these entities receive additional revenue. In a typical home sale, a real estate broker receives a fee of approximately 6 percent of the home sale price. Another fee associated with a home sale is title insurance, typically 0.25 of the home price. Local governments often charge deed recording fees and transfer taxes, which vary significantly by location, but on average they amount to 1.25 percent of the sale price.[18] For example, a $50,000 house may incur a $3,000 broker fee, a $125 title insurance premium, and $625 in transfer taxes. Other fees and charges that are also incurred while buying a home, such as attorney's fees, credit reports, and property inspections, are generally not related to the price of the home but rather are a fixed fee. These include $300 for legal fees, $50 for credit

[17] This can be compared to placing more buyers in the pipeline, accelerating the stock-flow relationship of buyers and sellers.

[18] U.S. Census of Governments, 1996

reports, $150 for inspections, and $100 in other miscellaneous costs. In total, average transactions costs on a $50,000 home amount to $4,350 (or 8.7 percent) of the sales price.

How to Estimate the Value of Fees and Taxes for Real Estate Businesses and Local Governments

1. Estimate the average price of assisted homes:	$_____	$_____
2. Multiply that sales price by **(see note)**:		
0.0600 for realtor fees	$_____	$_____
0.0025 for title insurance premiums	$_____	$_____
0.0125 for local government fees and taxes	$_____	$_____
3. Then add **(see note)**:		
$300 for attorney's fees	$_____	$_____
$50 for credit reports	$_____	$_____
$150 for inspections	$_____	$_____
Totals:	**$_____**	**$_____**

4. Multiply the left side column by the number of buyers assisted.

Note: These values are estimates based on the experiences of selected organizations. Each analysis should attempt to use values that are locally relevant.

The Economic Benefits of Financing the Construction and Rehabilitation of Homes

Community-based organizations, such as those in the Neighborhood Reinvestment Corporation's NeighborWorks® Network, stimulate benefits for the local economy by promoting and financing construction activity. The economic benefits of simulating residential construction include:

- Direct benefits of residential construction for builders, contractors and other businesses: Construction or rehabilitation of homes in distressed neighborhoods provides additional revenues for building contractors and suppliers, who in turn purchase additional goods and services and support jobs.

- Benefits for the local economy of having additional households move in: New homes, renovated vacant units, and multiple units created from single units may result in a net gain in local households. As these families spend part of their income in the local economy, benefits accrue to local businesses and those that work for them.

Community-based organizations often act as a catalyst for neighborhood redevelopment. In most cases, redevelopment would not otherwise have taken place because owners of property in distressed neighborhoods often have little incentive to invest in improvements. Lower-income homeowners are also less likely to qualify for other forms of financing for these projects. As a result, in most cases, these organizations can count the benefits of redevelopment as ones that they helped bring about.

Estimating the Economic Benefits of Residential Construction

Residential construction produces revenue for local construction firms. The business income, wages, salaries, and taxes paid on them by these firms and their workers are the direct effects of construction spending. Since construction is a locally-oriented industry, much of the value of these direct effects are captured locally and do not flow to businesses located outside the metropolitan area. In addition to these direct effects, purchases of goods and services by local construction firms from other firms generates indirect benefits. Most of these indirect benefits are realized by firms outside the local economy, such as building materials manufacturers and lumber companies. However, some are realized locally, such as retail or wholesale sales by local building material distributors. Those who receive business and personal income either directly from construction firms or indirectly from firms that supply goods and services to construction, in turn, spend some fraction of their income on general consumption. This produces “induced” or “ripple” effects by supporting additional spending.

The direct, indirect, and induced effects of construction spending for a typical local economy are shown in the table below as a share of each dollar spent. This is based on a study by the National Association of Home Builders that considered 61 industries that have a large local content. Their estimates are based on an industry input-output analysis of the direct, indirect, and induced effects of construction spending.

Economic Impact of Construction Spending for a Prototypical City			
	Direct + Indirect	Induced	Total Multiplier
Local Income	0.480450	0.205937	0.686387
Local Tax/Fee Revenue	0.044695	0.013579	0.058274
Local Jobs (FTE)	0.000011	0.000006	0.000017

Source: Emrath, Housing Economics March 1997

A community-based organization stimulating $1 million of construction activity, not including the cost of land, can be estimated to generate $686,387 in local income, $58,274 in local government revenue and taxes, and the annual equivalent of 17 full-time local jobs. These impacts are derived for a typical local economy. Since economic impacts will vary as a function of local industrial composition and local consumer behavior in each region, each community may require unique multipliers. However, these estimates are generally conservative.

How to Estimate the Local Economic Benefits of Construction Spending

1. Estimate the total amount of spending for construction, net of land costs.

   $_____

2. Multiply the total dollar value of construction by:

   0.686387 for total local income $_____

   0.000017 for total local jobs (annual full-time equivalent) _____ FTE

   0.058274 for total local government taxes and other revenue $_____

Estimating the Value of Benefits for the Local Economy of Creating Homes for Additional Households

New construction and substantial renovation can result in a net increase in the number of households in a local area. This occurs when new units are built, or existing vacant units are converted into occupied housing, assuming there are no offsetting increases in vacancy rates or losses from the housing stock. Community-based organizations can not always assume that the addition of units through new construction, rehabilitation, or splitting up of larger units into smaller units will always result in additional households in the community. Any net increase in households that does result from these activities, however, stimulates spending in the local economy.

By tracking the number of new households added to the community and multiplying it by the income of the average new household, the total amount of added spending can be estimated.

Economic Impact of Household Spending for a Prototypical City			
	Direct + Indirect	Induced	Total Multiplier
Local Income	0.450460	0.180026	0.63049
Local Tax/Fee Revenue	0.090933	0.012352	0.10329
Local Jobs (FTE)	0.000014	0.000006	0.00002

Source: Emrath, Housing Economics *March 1997*

For example, if 10 new housing units add 10 more households to a local economy that each have an income of $25,000 annually, then $250,000 in income is added and much of it is spent in the local economy. That spending produces ripple effects in the economy. Estimates of these induced benefits per dollar of added local income are shown in the table which follows. In total, the introduction of ten additional households earning a total of $250,000 supports 5 full-time local jobs, generates $157,622 in local income, and generates $25,821 in government taxes and fees.

Like in the construction estimates, these economic estimates are for a typical local economy. Although each community will have different experiences, it provides a conservative estimate for most local economies. Also, as in the construction multiplier, the number of jobs estimated may not signify new jobs for the area unless those employed were previously unemployed or underemployed.

How to Estimate the Local Economic Benefits of Spending by New Households

1. Estimate the total number of new or previously vacant housing units that have become occupied as a result of the work supported by the organization. $_____
2. Estimate the average income of the occupants of those units. $_____
3. Multiply the total dollar value of these households' income by:
   - 0.63049 for total local income: $_____
   - 0.00002 for total local jobs (annual full-time equivalent): $_____
   - 0.10329 for total local government taxes and other revenue: $_____

The Economic Benefits of Helping Financially-Troubled Households Maintain Homeownership

By providing assistance to homeowners struggling to keep current on their mortgages, community-based organizations, such as those in the Neighborhood Reinvestment Corporation's NeighborWorks® Network, help lenders and homeowners save the costs of defaults and foreclosures, including:

- Benefits to owners of preserving their home equity: By helping families avert foreclosure and remain in their homes, homeowners avoid substantial losses of home equity.
- Benefits to lenders of avoiding the costs of foreclosure: By keeping mortgage loans from foreclosing, lenders avoid the high costs associated with taking and selling off a mortgaged home.

Analysis of Federal Home Administration (FHA) loans shows that almost 60 percent of loans in default (defined by most lenders as a loan that is delinquent for 90 days) are reinstated and become current without any intervention.[19] It may be difficult for community-based organizations to separate those troubled loans that will reinstate without assistance (or "self-cure") from those that will not. In some cases, it may be clear that without the interventions of community-based organizations, the homeowner in default would have been

[19] Ambrose, 1998.

foreclosed on in a few days or weeks. In other cases, it can be assumed that those homeowners that receive grants or emergency loans would have likely foreclosed without that assistance.[20] Each organization will have to create its own criteria to determine when their intervention caused a borrower not to lose their home.

Estimating Benefits for Borrowers and Lenders of Avoiding Foreclosure

There are several components to foreclosure costs, including the interest payments lenders lose, and the costs they must incur when they take legal action to take a property. These costs include maintenance expenses that are deferred while the foreclosure proceedings take place, property taxes, legal fees, and, as the property is finally sold, broker fees and closing costs. The value of these expenses can be estimated based on a few simplifying assumptions.

In similar studies, the U.S. Department of Housing and Urban Development and the U.S. General Accounting Office assumed a typical mortgage default would occur in the 36th month of a mortgage.[21] That same assumption is used in this analysis. A second assumption is that a loan will be delinquent three months before the lender initiates foreclosure proceedings, as is typical in the mortgage industry, and that it will take the lender four months to move through foreclosure to the final disposition and sale of the property. The Federal Home Administration (FHA) averages four to twelve months to sell a home after taking control by foreclosure.[22] The longer it takes to "dispose" of the property the more costs are incurred. Four months disposition time is a conservative assumption.

It can also be assumed the value of the house has fallen since it was purchased, since buyers would likely transfer the deed in lieu of foreclosure, or simply sell their home to pay off their mortgage, if it has substantially increased in value.

Table 7 shows the costs incurred by lenders and homeowners when a typical property forecloses. While lenders may recoup some of their costs by holding the home until prices rise, this entails risk, involves carrying costs, and defers revenue until later periods. It can

[20] Moreno, 1995, reporting analysis by Wilder Research, found defaulted borrowers are much more likely to reinstate their loan when a grant or loan is used.
[21] This value will vary depending on interest rates, changes in house prices and the terms of the mortgage.
[22] GAO, 1995; Ambrose, 1998

generally be assumed lenders will dispose of the property rather than hold it until they can sell at a profit.

Table 7

Benefits of Foreclosures Prevention	
Costs Saved By Avoiding Typical Foreclosure	
Average House Price	$50,000
Months Since Mortgage Origination	36
Outstanding Mortgage at Default (80% LTV)	$39,344
Months from Default to Disposition	4
Total Equity Saved	**$10,629**
Downpayment	$10,000
Accrued Equity	$629
Total Lender Costs Saved	**$11,233**
Attorney, Title, Transfer Fees in Disposition	$1,600
Broker Commission (6%) and Disposition Costs	$3,000
Deferred Maintenance Required Before Sale	$4,000
Lost Interest (7% rate)	$1,373
Property Taxes, Hazard Insurance	$1,260
Total Costs Saved	**$21,862**

Table 8 shows the costs saved for lenders and homeowners for 80 and 97 percent loan-to-value ratios, at various interest rates. For example, the total costs saved by preventing a homeowner in default from foreclosing on a house that originally sold for $50,000, financed with a 97 percent LTV, 7 percent interest rate mortgage, is $14,756. Of this total, $3,050 of home equity is preserved and $10,918 in lender costs are avoided.

Table 8

Costs Saved by Preventing Foreclosure

Per $50,000 Loan Default in 36th month, 4 months from default to disposal

	Owner Equity Preserved		Lender Costs Avoided	
Interest Rate	80% LTV	97% LTV	80% LTV	97% LTV
6%	$11,514	$3,335	$10,606	$10,765
7%	$11,278	$3,050	$10,732	$10,918
8%	$11,075	$2,804	$10,859	$11,071
9%	$10,902	$2,593	$10,984	$11,223
10%	$10,754	$2,414	$11,109	$11,374
11%	$10,629	$2,262	$11,233	$11,525

How to Estimate the Value of Helping Families Avoid Foreclosure

1. Estimate the total number of borrowers assisted who otherwise would have foreclosed: _____
2. Find the appropriate loan-to-value ratio and interest rate in the Appendix table (page 32)

Owner Equity Saved:	$_____
Lender Cost Savings:	$_____
Total:	$_____

3. Multiply the number of loans by the each:

Total Owner Equity Saved:	$_____
Total Lender Cost Savings:	$_____
Total:	$_____

Summary Worksheet for Estimating Economic Benefits

Use this worksheet to keep track of your estimates.

Summary of Economic Benefits	
One-Time Benefits	
Lender Revenues from Loan Fees:	
Fees and Commissions for Real Estate Brokers:	
Title Insurance Premiums	
Transfer and Title Fees for Local Governments:	
Other Fees Related to Home Sales:	
Added "Move-In" Spending by Households:	
Local Economic Income from Construction:	
Local Jobs Supported through Construction (FTE):	
Government Taxes/fees from Construction:	
Total Costs Saved by Helping Families Avoid Foreclosure:	
Ongoing Benefits *	
Wealth Stored as Home Equity in 10 years (3% appreciation):	
Lender Revenues from Mortgage Interest over 10.5 years:	
Local Income from Additional Households over 10 years:	
Local Jobs Supported by Additional Households over 10 years (FTE):	
Government Taxes/fees from Additional Households over 10 years:	
Grand Total: Dollars:	
Grand Total: Jobs:	

* non-discounted

Build Up of Home Equity, Based on $30,000 House Price Including $900 Downpayment

6% Interest Rates

	Annual Rate of House Price Appreciation			
Years	0%	3%	6%	10%
3	$2,042	$4,824	$7,772	$11,972
5	$2,945	$7,723	$13,092	$21,260
10	$5,722	$16,039	$29,447	$53,534
15	$9,438	$26,177	$51,334	$104,755
20	$14,410	$38,594	$80,624	$186,235

7% Interest Rates

	Annual Rate of House Price Appreciation			
Years	0%	3%	6%	10%
3	$1,866	$4,647	$7,596	$11,796
5	$2,647	$7,425	$12,793	$20,962
10	$5,131	$15,449	$28,857	$52,944
15	$8,616	$25,355	$50,513	$103,934
20	$13,504	$37,688	$79,718	$185,329

8% Interest Rates

	Annual Rate of House Price Appreciation			
Years	0%	3%	6%	10%
3	$1,713	$4,495	$7,444	$11,643
5	$2,386	$7,165	$12,533	$20,702
10	$4,601	$14,918	$28,326	$52,413
15	$7,854	$24,593	$49,751	$103,172
20	$12,635	$36,818	$78,849	$184,460

9% Interest Rates

	Annual Rate of House Price Appreciation			
Years	0%	3%	6%	10%
3	$1,583	$4,365	$7,313	$11,513
5	$2,161	$6,939	$12,307	$20,476
10	$4,126	$14,444	$27,852	$51,939
15	$7,151	$23,890	$49,048	$102,469
20	$11,805	$35,988	$78,019	$183,630

10% Interest Rates

	Annual Rate of House Price Appreciation			
Years	0%	3%	6%	10%
3	$1,471	$4,253	$7,202	$11,401
5	$1,966	$6,744	$12,113	$20,281
10	$3,705	$14,023	$27,431	$51,518
15	$6,507	$23,246	$48,403	$101,824
20	$11,018	$35,202	$77,232	$182,843

11% Interest Rates

	Annual Rate of House Price Appreciation			
Years	0%	3%	6%	10%
3	$1,377	$4,159	$7,108	$11,307
5	$1,799	$6,577	$11,946	$20,114
10	$3,333	$13,651	$27,059	$51,146
15	$5,919	$22,658	$47,816	$101,236
20	$10,276	$34,459	$76,490	$182,101

Build Up of Home Equity, Based on $50,000 House Price Including $1,500 Downpayment

6% Interest Rates

	Annual Rate of House Price Appreciation			
Years	0%	3%	6%	10%
3	$3,403	$8,040	$12,954	$19,953
5	$4,908	$12,872	$21,820	$35,434
10	$9,536	$26,732	$49,079	$89,223
15	$15,729	$43,628	$85,557	$174,592
20	$24,017	$64,323	$134,374	$310,392

7% Interest Rates

	Annual Rate of House Price Appreciation			
Years	0%	3%	6%	10%
3	$3,109	$7,746	$12,660	$19,659
5	$4,411	$12,375	$21,322	$34,937
10	$8,552	$25,748	$48,095	$88,240
15	$14,361	$42,259	$84,189	$173,223
20	$22,507	$62,813	$132,864	$308,882

8% Interest Rates

	Annual Rate of House Price Appreciation			
Years	0%	3%	6%	10%
3	$2,855	$7,492	$12,406	$19,405
5	$3,977	$11,941	$20,889	$34,503
10	$7,668	$24,864	$47,210	$87,355
15	$13,090	$40,989	$82,918	$171,953
20	$21,058	$61,363	$131,414	$307,433

9% Interest Rates

	Annual Rate of House Price Appreciation			
Years	0%	3%	6%	10%
3	$2,638	$7,274	$12,189	$19,188
5	$3,601	$11,565	$20,512	$34,126
10	$6,877	$24,073	$46,420	$86,564
15	$11,919	$39,817	$81,746	$170,781
20	$19,675	$59,981	$130,032	$306,050

10% Interest Rates

	Annual Rate of House Price Appreciation			
Years	0%	3%	6%	10%
3	$2,452	$7,089	$12,003	$19,002
5	$3,277	$11,240	$20,188	$33,802
10	$6,176	$23,371	$45,718	$85,863
15	$10,844	$38,743	$80,672	$169,707
20	$18,364	$58,669	$128,720	$304,739

11% Interest Rates

	Annual Rate of House Price Appreciation			
Years	0%	3%	6%	10%
3	$2,295	$6,931	$11,846	$18,845
5	$2,998	$10,962	$19,910	$33,524
10	$5,556	$22,752	$45,098	$85,243
15	$9,865	$37,763	$79,693	$168,727
20	$17,126	$57,432	$127,483	$303,501

Build Up of Home Equity, Based on $75,000 House Price Including $3,000 Downpayment

6% Interest Rates

	Annual Rate of House Price Appreciation			
Years	0%	3%	6%	10%
3	$5,105	$12,059	$19,431	$29,930
5	$7,363	$19,308	$32,730	$53,151
10	$14,304	$40,098	$73,618	$133,835
15	$23,594	$65,442	$128,336	$261,888
20	$36,026	$96,484	$201,561	$465,588

7% Interest Rates

	Annual Rate of House Price Appreciation			
Years	0%	3%	6%	10%
3	$4,664	$11,618	$18,990	$29,489
5	$6,617	$18,562	$31,984	$52,405
10	$12,829	$38,622	$72,142	$132,359
15	$21,541	$63,389	$126,283	$259,835
20	$33,761	$94,219	$199,296	$463,323

8% Interest Rates

	Annual Rate of House Price Appreciation			
Years	0%	3%	6%	10%
3	$4,283	$11,238	$18,609	$29,108
5	$5,966	$17,911	$31,333	$51,754
10	$11,502	$37,295	$70,815	$131,032
15	$19,635	$61,483	$124,377	$257,929
20	$31,586	$92,045	$197,122	$461,149

9% Interest Rates

	Annual Rate of House Price Appreciation			
Years	0%	3%	6%	10%
3	$3,957	$10,911	$18,283	$28,782
5	$5,401	$17,347	$30,768	$51,190
10	$10,316	$36,110	$69,630	$129,847
15	$17,878	$59,725	$122,620	$256,171
20	$29,512	$89,971	$195,048	$459,075

10% Interest Rates

	Annual Rate of House Price Appreciation			
Years	0%	3%	6%	10%
3	$3,679	$10,633	$18,005	$28,504
5	$4,915	$16,860	$30,282	$50,703
10	$9,263	$35,057	$68,577	$128,794
15	$16,267	$58,114	$121,008	$254,560
20	$27,545	$88,004	$193,081	$457,108

11% Interest Rates

	Annual Rate of House Price Appreciation			
Years	0%	3%	6%	10%
3	$3,443	$10,397	$17,769	$28,268
5	$4,497	$16,443	$29,864	$50,286
10	$8,334	$34,127	$67,647	$127,864
15	$14,797	$56,645	$119,539	$253,091
20	$25,690	$86,148	$191,225	$455,252

Build Up of Home Equity, Based on $100,000 House Price Including $3,000 Downpayment

6% Interest Rates

	Annual Rate of House Price Appreciation			
Years	0%	3%	6%	10%
3	$6,807	$16,079	$25,908	$39,907
5	$9,817	$25,744	$43,639	$70,868
10	$19,073	$53,464	$98,157	$178,447
15	$31,459	$87,256	$171,115	$349,184
20	$48,034	$128,645	$268,748	$620,784

7% Interest Rates

	Annual Rate of House Price Appreciation			
Years	0%	3%	6%	10%
3	$6,218	$15,491	$25,320	$39,318
5	$8,822	$24,750	$42,645	$69,873
10	$17,105	$51,497	$96,190	$176,479
15	$28,722	$84,518	$168,377	$346,446
20	$45,015	$125,626	$265,728	$617,765

8% Interest Rates

	Annual Rate of House Price Appreciation			
Years	0%	3%	6%	10%
3	$5,711	$14,984	$24,813	$38,811
5	$7,954	$23,882	$41,777	$69,005
10	$15,335	$49,727	$94,420	$174,710
15	$26,180	$81,977	$165,836	$343,905
20	$42,115	$122,726	$262,829	$614,865

9% Interest Rates

	Annual Rate of House Price Appreciation			
Years	0%	3%	6%	10%
3	$5,276	$14,548	$24,377	$38,376
5	$7,202	$23,129	$41,024	$68,253
10	$13,755	$48,146	$92,839	$173,129
15	$23,837	$79,634	$163,493	$341,562
20	$39,350	$119,961	$260,063	$612,100

10% Interest Rates

	Annual Rate of House Price Appreciation			
Years	0%	3%	6%	10%
3	$4,905	$14,178	$24,006	$38,005
5	$6,553	$22,480	$40,376	$67,604
10	$12,351	$46,743	$91,436	$171,725
15	$21,689	$77,486	$161,345	$339,414
20	$36,727	$117,338	$257,441	$609,477

11% Interest Rates

	Annual Rate of House Price Appreciation			
Years	0%	3%	6%	10%
3	$4,590	$13,863	$23,692	$37,690
5	$5,997	$21,924	$39,819	$67,048
10	$11,111	$45,503	$90,196	$170,486
15	$19,730	$75,527	$159,386	$337,455
20	$34,253	$114,864	$254,966	$607,003

Build Up of Home Equity, Based on $150,000 House Price Including $4,500 Downpayment

6% Interest Rates

	Annual Rate of House Price Appreciation			
Years	0%	3%	6%	10%
3	$10,210	$24,119	$38,862	$59,860
5	$14,725	$38,616	$65,459	$106,302
10	$28,609	$80,196	$147,236	$267,670
15	$47,188	$130,883	$256,672	$523,775
20	$72,052	$192,968	$403,122	$931,177

7% Interest Rates

	Annual Rate of House Price Appreciation			
Years	0%	3%	6%	10%
3	$9,328	$23,237	$37,980	$58,978
5	$13,234	$37,125	$63,967	$104,810
10	$25,657	$77,245	$144,285	$264,719
15	$43,082	$126,777	$252,566	$519,670
20	$67,522	$188,439	$398,592	$926,647

8% Interest Rates

	Annual Rate of House Price Appreciation			
Years	0%	3%	6%	10%
3	$8,566	$22,475	$37,219	$58,216
5	$11,932	$35,823	$62,666	$103,508
10	$23,003	$74,591	$141,630	$262,064
15	$39,271	$122,966	$248,754	$515,858
20	$63,173	$184,090	$394,243	$922,298

9% Interest Rates

	Annual Rate of House Price Appreciation			
Years	0%	3%	6%	10%
3	$7,914	$21,823	$36,566	$57,564
5	$10,803	$34,694	$61,537	$102,379
10	$20,632	$72,220	$139,259	$259,693
15	$35,756	$119,451	$245,239	$512,343
20	$59,025	$179,942	$390,095	$918,150

10% Interest Rates

	Annual Rate of House Price Appreciation			
Years	0%	3%	6%	10%
3	$7,357	$21,266	$36,010	$57,007
5	$9,830	$33,721	$60,563	$101,406
10	$18,527	$70,114	$137,154	$257,588
15	$32,533	$116,228	$242,017	$509,120
20	$55,091	$176,008	$386,161	$914,216

11% Interest Rates

	Annual Rate of House Price Appreciation			
Years	0%	3%	6%	10%
3	$6,885	$20,794	$35,538	$56,535
5	$8,995	$32,886	$59,729	$100,571
10	$16,667	$68,255	$135,294	$255,728
15	$29,595	$113,290	$239,079	$506,182
20	$51,379	$172,296	$382,450	$910,504

Interest Revenue for Lenders

10.5 Year Weighted Average Life of Loan for $30,000 House

Interest Rate	Not Discounted		Discounted Present Value 5% COFI		Discounted Present Value 7% COFI	
	80% LTV	97% LTV	80% LTV	97% LTV	80% LTV	97% LTV
6%	$13,553	$16,433	$8,120	$9,846	$6,661	$8,076
7%	$15,928	$19,313	$9,543	$11,571	$7,828	$9,491
8%	$18,310	$22,201	$10,970	$13,301	$8,998	$10,910
9%	$20,693	$25,090	$12,397	$15,032	$10,169	$12,330
10%	$23,070	$27,972	$13,821	$16,759	$11,337	$13,747
11%	$25,437	$30,842	$15,240	$18,478	$12,501	$15,157

COFI is the 11th District FHLB Cost of Funds Index

Interest Revenue for Lenders

10.5 Year Weighted Average Life of Loan for $50,000 House

Interest Rate	Not Discounted		Discounted Present Value 5% COFI		Discounted Present Value 7% COFI	
	80% LTV	97% LTV	80% LTV	97% LTV	80% LTV	97% LTV
6%	$22,589	$27,389	$13,533	$16,409	$11,101	$13,460
7%	$26,546	$32,188	$15,904	$19,284	$13,046	$15,818
8%	$30,517	$37,001	$18,283	$22,168	$14,997	$18,184
9%	$34,488	$41,816	$20,662	$25,053	$16,949	$20,550
10%	$38,450	$46,620	$23,036	$27,931	$18,896	$22,911
11%	$42,394	$51,403	$25,399	$30,797	$20,834	$25,262

COFI is the 11th District FHLB Cost of Funds Index

Interest Revenue for Lenders

10.5 Year Weighted Average Life of Loan for $75,000 House

Interest Rate	Not Discounted		Discounted Present Value 5% COFI		Discounted Present Value 7% COFI	
	80% LTV	97% LTV	80% LTV	97% LTV	80% LTV	97% LTV
6%	$33,883	$41,084	$20,300	$24,614	$16,652	$20,190
7%	$39,820	$48,281	$23,857	$28,926	$19,569	$23,727
8%	$45,775	$55,502	$27,425	$33,252	$22,496	$27,276
9%	$51,731	$62,724	$30,993	$37,579	$25,423	$30,825
10%	$57,674	$69,930	$34,554	$41,896	$28,343	$34,366
11%	$63,592	$77,105	$38,099	$46,195	$31,251	$37,892

COFI is the 11th District FHLB Cost of Funds Index

Interest Revenue for Lenders

10.5 Year Weighted Average Life of Loan for $100,000 House

Interest Rate	Not Discounted		Discounted Present Value 5% COFI		Discounted Present Value 7% COFI	
	80% LTV	97% LTV	80% LTV	97% LTV	80% LTV	97% LTV
6%	$45,178	$54,778	$27,067	$32,819	$22,202	$26,920
7%	$53,093	$64,375	$31,809	$38,568	$26,092	$31,637
8%	$61,033	$74,003	$36,566	$44,336	$29,994	$36,368
9%	$68,975	$83,633	$41,324	$50,106	$33,897	$41,100
10%	$76,899	$93,240	$46,072	$55,862	$37,791	$45,822
11%	$84,789	$102,807	$50,799	$61,593	$41,669	$50,523

COFI is the 11th District FHLB Cost of Funds Index

Interest Revenue for Lenders

10.5 Year Weighted Average Life of Loan for $150,000 House

Interest Rate	Not Discounted		Discounted Present Value 5% COFI		Discounted Present Value 7% COFI	
	80% LTV	97% LTV	80% LTV	97% LTV	80% LTV	97% LTV
6%	$67,767	$82,167	$40,600	$49,228	$33,303	$40,380
7%	$79,639	$96,563	$47,713	$57,853	$39,138	$47,455
8%	$91,550	$111,004	$54,849	$66,505	$44,991	$54,552
9%	$103,463	$125,449	$61,986	$75,159	$50,846	$61,651
10%	$115,349	$139,860	$69,107	$83,793	$56,687	$68,733
11%	$127,183	$154,210	$76,198	$92,390	$62,503	$75,785

COFI is the 11th District FHLB Cost of Funds Index

Estimated Additional Spending by Income Due to "Move In Effect"

	Type of Expenditure					
Income	Home Maintenance & Insurance	Furniture	Appliances	Floor Coverings	Textiles	Total
$10,000	$370	$338	$140	$55	$27	$929
$12,500	$463	$422	$175	$68	$33	$1,161
$15,000	$555	$507	$210	$82	$40	$1,393
$17,500	$648	$591	$245	$96	$46	$1,626
$20,000	$740	$675	$280	$109	$53	$1,858
$22,500	$833	$760	$315	$123	$60	$2,090
$25,000	$925	$844	$350	$137	$66	$2,322
$27,500	$1,018	$929	$385	$150	$73	$2,555
$30,000	$1,111	$1,013	$420	$164	$80	$2,787
$32,500	$1,203	$1,098	$455	$177	$86	$3,019
$35,000	$1,296	$1,182	$490	$191	$93	$3,251
$37,500	$1,388	$1,266	$525	$205	$100	$3,484
$40,000	$1,481	$1,351	$560	$218	$106	$3,716
$42,500	$1,573	$1,435	$595	$232	$113	$3,948

Source: Joint Center tabulations Consumer Expenditure Survey quarterly data (1995)

Estimated Mortgage Origination Fees if Fees Average 1 Percent

$50,000 House		
	Mortgage	Origination Fees
80% LTV	$40,000	$400
97% LTV	$48,500	$485

$75,000 House		
	Mortgage	Origination Fees
80% LTV	$60,000	$600
97% LTV	$72,750	$728

$100,000 House		
	Mortgage	Origination Fees
80% LTV	$80,000	$800
97% LTV	$97,000	$970

$150,000 House		
	Mortgage	Origination Fees
80% LTV	$120,000	$1,200
97% LTV	$145,500	$1,455

Estimated Mortgage Origination Fees if Fees Average 1.5 Percent

$50,000 House		
	Mortgage	Origination Fees
80% LTV	$40,000	$600
97% LTV	$48,500	$728

$75,000 House		
	Mortgage	Origination Fees
80% LTV	$60,000	$900
97% LTV	$72,750	$1,091

$100,000 House		
	Mortgage	Origination Fees
80% LTV	$80,000	$1,200
97% LTV	$97,000	$1,455

$150,000 House		
	Mortgage	Origination Fees
80% LTV	$120,000	$1,800
97% LTV	$145,500	$2,183

Estimated Mortgage Origination Fees if Fees Average 2 Percent

$50,000 House		
	Mortgage	Origination Fees
80% LTV	$40,000	$800
97% LTV	$48,500	$970

$75,000 House		
	Mortgage	Origination Fees
80% LTV	$60,000	$1,200
97% LTV	$72,750	$1,455

$100,000 House		
	Mortgage	Origination Fees
80% LTV	$80,000	$1,600
97% LTV	$97,000	$1,940

$150,000 House		
	Mortgage	Origination Fees
80% LTV	$120,000	$2,400
97% LTV	$145,500	$2,910

The National Average, as Estimated by the U.S. Federal Housing Finance Board (1997), is 1 Percent

Costs Saved by Preventing Foreclosure

Per $75,000 Loan Default in 36th month, 4 months from default to disposal

	Owner Equity Preserved		Lender Costs Avoided	
Interest Rate	80% LTV	97% LTV	80% LTV	97% LTV
6%	$17,271	$5,003	$15,909	$16,147
7%	$16,917	$4,575	$16,099	$16,377
8%	$16,613	$4,206	$16,288	$16,606
9%	$16,353	$3,890	$16,476	$16,834
10%	$16,131	$3,621	$16,663	$17,062
11%	$15,943	$3,393	$16,849	$17,287

Costs Saved by Preventing Foreclosure

Per $100,000 Loan Default in 36th month, 4 months from default to disposal

	Owner Equity Preserved		Lender Costs Avoided	
Interest Rate	80% LTV	97% LTV	80% LTV	97% LTV
6%	$23,027	$6,671	$21,212	$21,529
7%	$22,557	$6,100	$21,465	$21,836
8%	$22,151	$5,608	$21,717	$22,141
9%	$21,804	$5,187	$21,968	$22,446
10%	$21,508	$4,828	$22,218	$22,749
11%	$21,257	$4,524	$22,466	$23,049

Costs Saved by Preventing Foreclosure

Per $30,000 Loan Default in 36th month, 4 months from default to disposal

	Owner Equity Preserved		Lender Costs Avoided	
Interest Rate	80% LTV	97% LTV	80% LTV	97% LTV
6%	$6,908	$2,001	$6,364	$6,459
7%	$6,767	$1,830	$6,439	$6,551
8%	$6,645	$1,682	$6,515	$6,642
9%	$6,541	$1,556	$6,590	$6,734
10%	$6,452	$1,448	$6,665	$6,825
11%	$6,377	$1,357	$6,740	$6,915

Costs Saved by Preventing Foreclosure

Per $50,000 Loan Default in 36th month, 4 months from default to disposal

	Owner Equity Preserved		Lender Costs Avoided	
Interest Rate	80% LTV	97% LTV	80% LTV	97% LTV
6%	$11,514	$3,335	$10,606	$10,765
7%	$11,278	$3,050	$10,732	$10,918
8%	$11,075	$2,804	$10,859	$11,071
9%	$10,902	$2,593	$10,984	$11,223
10%	$10,754	$2,414	$11,109	$11,374
11%	$10,629	$2,262	$11,233	$11,525

Costs Saved by Preventing Foreclosure

Per $150,000 Loan Default in 36th month, 4 months from default to disposal

	Owner Equity Preserved		Lender Costs Avoided	
Interest Rate	80% LTV	97% LTV	80% LTV	97% LTV
6%	$34,541	$10,006	$31,818	$32,294
7%	$33,835	$9,150	$32,197	$32,754
8%	$33,226	$8,412	$32,576	$33,212
9%	$32,705	$7,780	$32,952	$33,669
10%	$32,262	$7,242	$33,327	$34,123
11%	$31,886	$6,787	$33,699	$34,574

Works Cited

Ambrose, Brent W. and Charles A. Capone Jr., "Cost-Benefit Analysis of Single-Family Foreclosure Alternatives, "*The Journal of Real Estate Finance and Economics*, September 1996, Vol. 13, pp. 105-20.

Ambrose, Brent W., "Embedded Options in the Mortgage Contract," University of Wisconsin-Milwuakee Working Paper, September 1998.

Apgar, William C. Jr, Julie Shannon and Jennifer Olson, "Determinates of Renovation and Repair Activity," Joint Center For Housing Studies Working Paper W87-7, 1987.

Avery, Robert B., Raphael Bostic, Paul Calem, Glenn Canner, "Credit Risk, Credit Scoring and the Performance of Home Mortgages," *Federal Reserve Bulletin*, July 1996, pp. 621-648.

Brown, Ned and Dale Westoff, "Packaging CRA Loans into Securities," *Mortgage Banking*, 8(58), May 1998.

Deng, Yongheng, John M. Quigley and Robert Van Order, "Mortgage Default and Low Down Payment Loans: The Costs of Public Subsidy," *Regional Science and Urban Economics*, Vol. 26, 1996, pp. 263-285.

Dubin, Elliot, "The Direct Fiscal Impacts of Residential Construction," *Housing Economics*, May 1994, pp. 11-13.

Emrath, Paul, "Consumption Spending of New Home Buyers," *Housing Economics*, Vol. 25(7), July 1994, pp. 10-15.

_____, "Local Economic Impact of Home Building," *Housing Economics*, Vol. 45(3), March 1997.

Galster, George C., *Homeownership and Neighborhood Reinvestment*, Durham NC: Duke Univ. Press, 1987.

Haurin, Donald R., Patrick H. Hendershott, Susan M Wachter, "Wealth Accumulation and Housing Choices of Young Households," *Journal of Housing Research*, 7(1), 1997.

Hefner, Frank L., "Using Input-Output Models to Measure Local Economic Impacts, " *International Journal of Public Administration*, Vol. 20, Aug/Sep 1997, p. 1471.

Joint Center for Housing Studies, *The State of the Nation's Housing 1997*, Harvard University.

Leontief, Wassily W., *Input Output Economics*, 2nd Edition, Oxford University Press, New York, 1986.

McArdle, Nancy, "The Move In Effect on Home Improvement Activity: Longitudinal Analysis Utilizing the 1991 and 1993 American Housing Surveys," Joint Center Working Paper RF96-3, 1996.

Mills, Edwin, *Performance Analysis of Community Reinvestment Lending Programs,* The Woodstock Institute, 1993.

Moreno, Ana, "Cost Effectiveness of Mortgage Foreclosure Prevention," Family Housing Fund of Minneapolis and Saint Paul, November 1995.

Newburger, Harriet, Henry Pollakowski, Michael Stegman, and William Rohe, "Appreciation Rates in Neighborhoods with Modestly Priced Housing," Joint Center For Housing Studies Working Paper W92-10, 1992.

Oliver, Geoffrey, Laura McDonald and Neil Kennedy, "Rosy Results in Servicing," *Mortgage Banking,*, June 1996, pp. 46-52.

Price Waterhouse, (for the National Association of Realtors) *Contribution of Single-Family Home Resales to the US Economy,* April 6, 1992.

Quercia, Roberto and Susan Wachter, "Homeownership Counseling Performance: Can it be Measured?," *Housing Policy Debate,* Vol. 7, Issue 1, 1996, p. 175.

_____, AUREA Conference paper, Summer 1998.

Savage, Howard, *Who Can Afford to Buy a House in 1993?,* US Census Bureau, 1997.

Stamper, Michael K., *SMM: Secondary Mortgage Markets,* Freddie Mac, 14(3), October 1997.

_____, *Secondary Mortgage Markets*, Vol. 14(1), April 1997.

U.S. Bureau of the Census and Department of Housing and Urban Development, A*merican Housing Survey,* 1995, revised.

U.S. Department of Commerce, *Consumer Expenditure Survey,* 1995.

U.S. Department of Housing and Urban Development, *Interim Evaluation of the Single Family Property Disposition Demonstration,* A report by ICF Incorporated, June 1993.

U.S. Department of Housing and Urban Development, *Providing Alternatives to Mortgage Foreclosure: A Report to Congress*, March 1996.

U.S. Federal Reserve Board of Governors, *Survey of Consumer Finance,* 1995.

U.S. General Accounting Office, *Property Disposition: Information on HUD's Acquisition and Disposition of Single-Family Properties,* July 1995.

Werwath, Peter, *Helping Families Build Assets: Nonprofit Homeownership Programs*, The Enterprise Foundation, 1996.

Zerger, Suzanne, Richard Chase and Marilyn Conrad, *Preserving Homeownership: A Progress Report on Mortgage Foreclosure Prevention,* A report by Wilder Research Center for The Mortgage Foreclosure Prevention Program Collaborative, Minneapolis, Minnesota, February 1995.

STEP BY STEP WORKSHEET

How to Estimate the Value of Accrued Wealth for Home Buyers:

1. Estimate the total number of former renter families that became homeowners: _____
2. Estimate the appropriate interest rate for typical loans assisted and the average value of a typical mortgage. Find these value in the Appendix tables (page 27-29). Choose an expected house price appreciation rate and holding period; (3 percent and 10 years are reasonable estimates for most areas). Find the corresponding cell in the table:

   Result $_____

3. Multiply the total number of buyers your organization helped to become first-time home buyers (#1) by the typical equity accrued (#2).

   Total $_____

How to Estimate the Interest and Fee Revenues for Lenders:

1. Estimate the appropriate interest rate for typical loans assisted and the average value of a house sold to a first-time buyer. Choose a loan-to-value ratio (80 or 97 percent LTV) and find the value of non-discounted interest revenue in the Appendix table (page 31): $_____
2. Find the present (discounted) value of that interest, using a COFI rate:[23] $_____
3. Find the value of loan fees of points in the Appendix table (page 31): $_____
4. Multiply the total number of buyers your organization helped to become first-time home buyers by the non-discounted interest revenue (#1), the discounted interest revenue (#2), and lender fees (#3).

   Total Non-Discounted: $_____

   Total Discounted (present value): $_____

   Total Lender Fees: $_____

How to Estimate the Value of Fees and Taxes for Real Estate Businesses and Local Governments

1. Estimate the average price of assisted homes:	$_____	$_____
2. Multiply that sales price by (see note):		
0.0600 for realtor fees	$_____	$_____
0.0025 for title insurance premiums	$_____	$_____
0.0125 for local government fees and taxes	$_____	$_____

[23] The 11th District Cost Of Funds Index (COFI) rate is issued by the Federal Home Loan Bank of San Francisco at <http://www.fhlbsea.com/cd_dar.asp>, and published in "Federal Home Loan ARM Indexes" in the *Wall Street Journal*.

3. Then add (see note):

$300 for attorney's fees	$_____	$_____
$50 for credit reports	$_____	$_____
$150 for inspections	$_____	$_____
Totals:	**$_____**	**$_____**

4. Multiply the left side column by the number of buyers assisted.

Note: These values are estimates based on the experiences of selected organizations. Each analysis should attempt to use values that are locally relevant.

How to Estimate the Value of the "Move In" Effect for Home Repair, Appliance and Furniture Businesses:

1. Find the total spending for the estimated average income of your home buyers in the Appendix table (page 31)

	Per Household		For All Buyers
Maintenance and Insurance:	$_____	Total:	$_____
Furniture:	$_____	Total:	$_____
Appliance:	$_____	Total:	$_____
Floor Covering:	$_____	Total:	$_____
Textiles:	$_____	Total:	$_____

2. Multiply the total number of households buying homes by the left side column.

How to Estimate the Local Economic Benefits of Construction Spending

1. Estimate the total amount of spending for construction, net of land costs: $_____
2. Multiply the total dollar value of construction by:
   - 0.686387 for total local income $_____
   - 0.000017 for total local jobs (annual full-time equivalent) $ _____ FTE
   - 0.058274 for total local government taxes and other revenue $_____

How to Estimate the Local Economic Benefits of Spending by New Households

1. Estimate the total number of new or previously vacant housing units that have been occupied: _____
2. Estimate the average income of the occupants of those units. $_____
3. Multiply the total dollar value of these household's income by:
   - 0.63049 for total local income: $_____
   - 0.00002 for total local jobs (annual full-time equivalent): $_____
   - 0.10329 for total local government taxes and other revenue: $_____

How to Estimate the Value of Helping Families Avoid Foreclosure

1. Estimate the total number of loans assisted that otherwise would have foreclosed: _____

2. Find the appropriate loan-to-value ratio and interest rate in the Appendix table (page 32)

Owner Equity Saved:	$_____
Lender Cost Savings:	$_____
Total:	$_____

3. Multiply the number of loans by the each:

Total Owner Equity Saved:	$_____
Total Lender Cost Savings:	$_____
Total:	$_____