Do Housing Rehabs Pay Their Way? A National Case Study

Authors   Robert A. Simons, A. J. Magner and
                  Esmail Baku

Abstract   This research focuses on if housing rehabilitation by community
                  development corporations pays its own way. The recent
                  experience of ten local housing organizations in the
                  Neighborhood Reinvestment Corporation network is examined.
                  These organizations assist homeowners in rehabbing existing
                  units and acquire, rehab and transfer units to new occupants. The
                  findings indicate that rehabbed housing units provide substantial
                  benefits to the local economy. The rehabbed units return $0.55,
                  on average, for every local government dollar invested. In
                  addition, economic benefits such as increased property values
                  and tax base, and construction jobs and permanent jobs were
                  created and sustained.

Introduction

Many private sector market participants and not-for-profit groups participate in the rehabilitation of housing. In some inner-city markets, these groups are the only developers active in producing housing. Community Development Corporations (CDCs) have become one of the main producers of affordable housing and community development. Recycling housing through rehabilitation (rehab) is important for many reasons. In addition to providing safe, decent and affordable housing to persons of modest means, rehabs allow many first-time homebuyers the opportunity to get on the equity ladder of homeownership. Homeownership is in turn related to higher levels of personal, residential and life satisfaction, improved self-esteem, and psychological and physical health. Other desirable outcomes benefiting society are greater neighborhood stability attributable to longer tenure in the house; more social involvement such as voting participation; higher levels of house maintenance activities; and other socially desirable behaviors (Rohe, McCarthy and Van Zandt, 2000). The benefits of homeownership from housing rehabs may also lead to greater utilization of city infrastructure and retail services. Newly revitalized housing makes a much higher financial contribution in the form of taxes than a dilapidated or boarded up unit, which may instead be a burden on the local economy and property markets by contributing to blight and lower property values.

The role of CDCs in revitalizing urban areas is considerable. According to the Fourth National Community Development Census, conducted by the Urban Institute in 1998, there were 3,600 CDCs nationwide involved in affordable housing and/or community economic and commercial development. During the last four years, CDCs produced 245,000 affordable housing units. By the end of 1997, they had cumulatively developed 71 million feet of commercial and industrial space, and their total outstanding business loans amounted to $1.9 billion involving 59,000 businesses (Urban Institute, 1999:5–7).

CDCs' affordable housing programs include a broad spectrum of activities that include one or a combination of the following services: housing finance, rehabilitation, new construction, purchase-rehabilitation-sale, emergency home repair, acquisition, homeownership promotion, development of rental units and management. Sixty-nine percent of CDCs are involved in housing rehabilitation. In addition to their affordable housing and community economic development programs, most CDCs are involved in providing a selected number of community services such as youth programs, community organizing, community safety, job training, child care and emergency food assistance. The main sources of support for CDCs' operating expenses and programmatic investment include federal, state and local governments, national intermediaries, foundations, private lending institutions, corporations and religious institutions (Urban Institute, 1999:15).
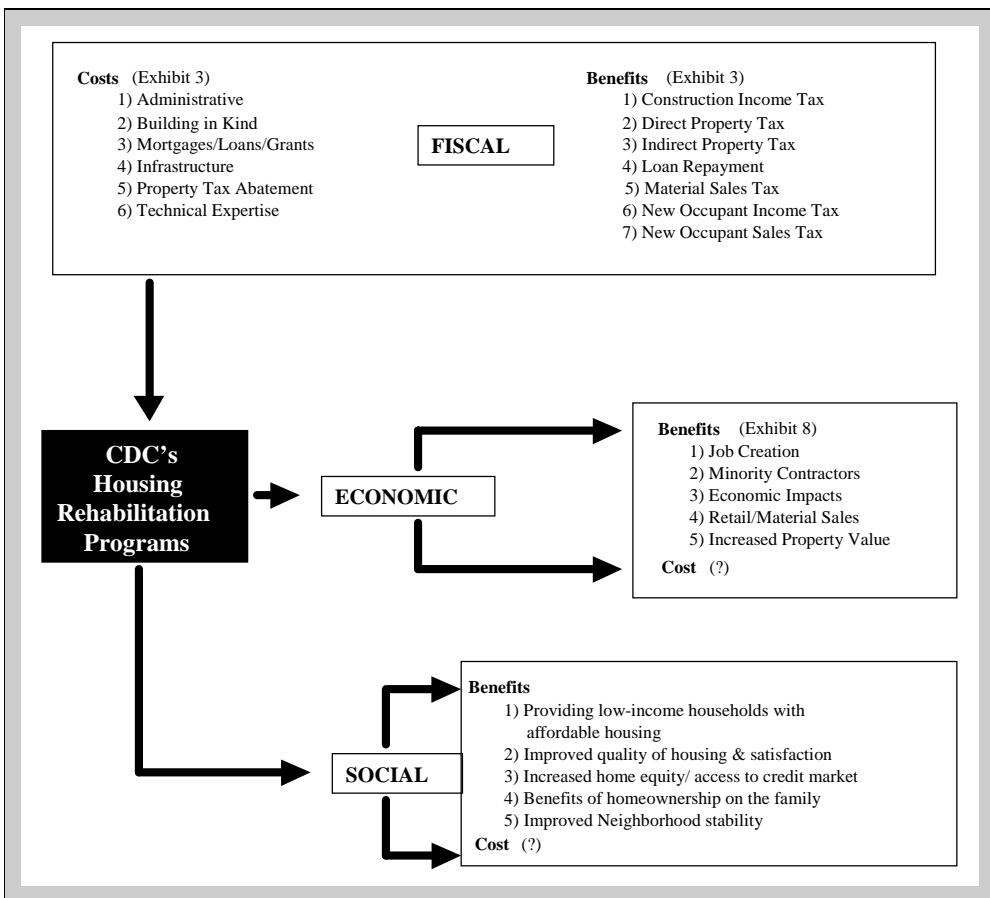
Despite their significant and increasing role in providing affordable housing and community revitalization services, very few published studies quantify the impact of CDCs in the local arena. One important question is to what extent the positive effects of housing on the local economy offset any subsidy costs. In other words, does rehab housing pay its own way? In this study, data from a national sample of ten NeighborWorks® Organizations (NWOs), chartered members of the Washington, DC-based Neighborhood Reinvestment Corporation, were used to examine the fiscal and economic benefits-costs associated with their single-family rehabilitation programs. Collectively, these ten CDCs rehabilitated 334 single-family housing units in conjunction with homeownership promotion programs during 1996–97.

The focus of the fiscal (on-budget costs and benefits) and economic impact analysis is the rehabilitation (rehabs) of single-family detached units, specifically excluding multi-family (more than two units) and mutual housing organizations. Fiscal, as used here, means on-budget costs and revenues at the local government level, including all federal pass-through funds. Thus, any private financing (*e.g.*, first mortgages and their repayment stream) that may play an important role in housing rehabilitation is not considered. All organizations studied were NWOs. This study addresses only moderate and substantial rehabs (over 10% of the post-rehab value of the house), to the exclusion of minor housing rehabilitations. The organizations studied have two primary activities, to assist homeowners in rehabbing their existing units, and to acquire, rehab and transfer units to new occupants, usually new homeowners.

Exhibit 1 diagrams the relationship between CDC housing rehab activities and their fiscal, economic, and social benefits and costs. CDC programs receive subsidies from local governments (which are fiscal costs in this analysis). The CDCs use these local government funds, combined with funds from other sources including national organizations and sale of completed housing products, to rehabilitate housing. This activity generates social and economic impacts. These economic impacts in turn generate fiscal (on-budget) benefits, which are used to offset fiscal costs. The relationship of fiscal benefits and costs, expressed in a ratio, is a primary indicator of fiscal efficiency.

Moving from the fiscal dimension on top of Exhibit 1 through the economic and toward the social dimension on the bottom, quantification of the benefit-cost factors becomes increasingly more difficult. Question marks next to the economic

Exhibit 1 | CDC Housing Rehabilitation Programs and Social, Economic and Fiscal Flows

Costs (Exhibit 3)
    1) Administrative
    2) Building in Kind
    3) Mortgages/Loans/Grants
    4) Infrastructure
    5) Property Tax Abatement
    6) Technical Expertise

FISCAL

Benefits (Exhibit 3)
    1) Construction Income Tax
    2) Direct Property Tax
    3) Indirect Property Tax
    4) Loan Repayment
    5) Material Sales Tax
    6) New Occupant Income Tax
    7) New Occupant Sales Tax

CDC's Housing Rehabilitation Programs

ECONOMIC

Benefits (Exhibit 8)
    1) Job Creation
    2) Minority Contractors
    3) Economic Impacts
    4) Retail/Material Sales
    5) Increased Property Value
Cost (?)

SOCIAL

Benefits
    1) Providing low-income households with
       affordable housing
    2) Improved quality of housing & satisfaction
    3) Increased home equity/ access to credit market
    4) Benefits of homeownership on the family
    5) Improved Neighborhood stability
Cost (?)

and social costs indicate that specification of these factors is sketchy: others may develop the model further by delineating them.

The research approach has its limitations. First, all the feedback effects among the three dimensions have not been studied. The main economic impacts such as increased property values, retail sales and income from jobs have been translated into the corresponding fiscal benefits. However, no attempt was made to generate impacts beyond the initial turn (*e.g.*, no multiplier effect has been calculated). This probably serves to understate the benefits from rehabs. On the other hand, many marginal fiscal costs for services (police, fire, etc.) have been assumed to be zero because infill housing uses existing carrying capacity. This would tend to understate the costs from new residents in rehab units. For the purpose of the study, it is assumed that these omissions generally offset each other. Also, not all economic effects (*e.g.*, minority contractors) have direct fiscal impacts, and some impacts, such as jobs, may have political or social benefits that are not calculated here. Second, although social benefits may be as important as the fiscal or economic benefits, the availability and quantification of pertinent data are much more challenging. Thus, their evaluation has been excluded from this study. This study employs a straightforward fiscal impact approach, instead of sophisticated input-output models.

The main findings are that rehabbed units do indeed provide substantial benefits to the local economy. From a fiscal impact standpoint, units returned about $0.55 for every local government dollar invested. In addition, economic benefits such as increased property values and tax base and construction and permanent jobs were created and sustained by the programs.

Prior Studies of CDCs Non-housing Community Services

Some studies have attempted to quantify the benefits and costs of the community services offered by CDCs other than those pertaining to housing investment. Typically, CDCs also address human needs, such as drug addiction counseling, substance abuse and crime prevention. Three of these studies are described below.

Concerning health services, there are several methodologically sound cost-benefit studies on drug-addiction treatments. Using data from three outpatient drug-free programs in Philadelphia during 1996–1997, French, Salome, Sindelar and McLellan (2002) conclude that total economic benefit was greater than total economic cost at the three outpatient not-for profit programs. Their study, using per-client benefit and cost estimates over a seven-month follow-up period, concludes that the net benefit estimates ranged from $1,939 (lower bound) to $14,307 (upper bound), with a benefit-cost ratio ranging from $9 to $56. The major factor contributing to the benefit side of the equation turned out to be reduction in the number of days the individual was engaged in illegal activities ($1,576), followed by money spent on drugs ($1,020) and days of inpatient

medical care ($891). These results, however interesting, are not directly comparable to the findings in this study because they address fiscal as well as economic impacts, while this study is restricted to fiscal impacts only.

In an attempt to estimate the net benefit resulting from five different substance abuse treatments, Daley et al. (2000) focus on addicted pregnant women. Using data from 439 pregnant women who entered publicly funded treatment programs in Massachusetts between 1992 and 1997, the study concludes that, depending on the treatment strategy, the net benefit ranged from $3,972 (detoxification modality) to $32,772 (residential treatment). Thus, the benefit:cost ratio is greater than one. Again, this study provides economic rather than purely fiscal impact analysis.

Robertson, Grimes and Rogers (2001) undertook a cost-benefit analysis of various community-based services aimed at reducing crime and delinquency, and compared the results with more traditional intervention techniques. The study uses data from two intervention strategies: intensive supervision and monitoring, and intensive outpatient counseling with cognitive behavioral therapy. Although the first intervention technique does not yield a significant net benefit, the result of the regression model indicates that the second intervention technique produced a net benefit of $1,435 in justice system expenditure per youth offender served for the sample period. Thus, the benefit:cost ratio is greater than one. Again, this study provides economic rather than purely fiscal impact analysis.

While three of the four analyses provided in these studies of social services show a positive benefit:cost ratio (benefits exceed costs), they cannot be directly compared to this study because they address economic and fiscal ratios, whereas the analysis in this study is purely focused on fiscal impacts. Further, even though expenditures in areas other than housing may generate larger returns to society than housing rehabilitation, CDC organizations exist to develop their geographically defined service area. Housing is a basic need and a large part of their constituents' household budget. Since most CDCs operate in inner-city neighborhoods with limited income profiles, typically a great need exists there. Also, housing development shows tangible evidence of improvement of the service area. CDCs are motivated to engage in housing related activities, and rehab housing has the smallest equity requirements for these often cash-starved organizations. While the theoretical value of the equimarginal principle is recognized, CDCs really have little choice but to engage in rehab housing activity.

Literature Review: CDC Housing Investment

A prior examination of the fiscal impacts of rehab housing does not exist in the urban affairs or urban economics literature. However, several articles have explored housing subsidy programs offered by cities. For instance, Koven and Koven (1993) found tax abatement strategies in Des Moines, Iowa to be successful in attracting middle and upper income residents to the city. However, this article

does not address the extent to which this policy expands the tax base compared to the cost of the subsidies.

Simons and Sharkey (1997) performed a similar fiscal impact analysis measuring the fiscal impacts of subsidized new housing. They measured subsidies (costs) and benefits of ten new construction projects in Cleveland, Ohio. Their research considered both supply-side on-budget subsidies, such as cheap city land from the City of Cleveland's Land Bank, environmental remediation grants and infrastructure improvements. These items do not directly apply to this research because rehabs, having already passed beyond this part of the housing production process, do not generally require these inputs. The demand-side costs, however, such as property tax abatement and low-interest first and second mortgages, were considered as costs in this study. Fiscal benefits evaluated in the Simons and Sharkey study included new resident income tax, unabated property tax for the new units, increased property taxes from nearby homes positively affected by new housing construction and construction employee income tax (a one-time benefit). The authors found a benefit:cost ratio less than one, indicating that costs exceeded benefits. It should be noted that Cleveland's local municipal sales tax is allocated by state formula and is not counted as a fiscal benefit.

Goetz, et al. (1997) reported on the fiscal impacts of the *Houses to Homes* program[1] in St. Paul, Minnesota. The unpublished report chronicles the activities of the program since its inception in 1991, and performs a fiscal benefit:cost analysis of the program. While Goetz's report falls short in some respects (*i.e*., assuming linear marginal costs for police services), it does consider an important phenomenon that was not included in the Simons and Sharkey (1997) article. Goetz measures the impact of rehab houses in the *Houses to Homes* program on nearby property investment. The study used proximity to rehabbed units and building permits to measure the impact of rehabbed units on the neighbor's decision to invest in his or her home. Investment amount was translated into increased assessment, and then into increased property taxes for the city.

In addition to a void on the fiscal impacts of housing rehabilitation, articles directly addressing their economic impact are also absent from the literature. Johnson and Harter (1998) addressed the impacts on the local economy of a hypothetical family leaving public housing and moving into Section 8 housing. Although this scenario does not directly relate to the impact of rehabilitated housing, some of their methodologies for measuring economic impacts have been utilized for this analysis.

The National Association of Home Builders (NAHB) publishes indices that indicate the economic impact of new construction at the local, state and national level. However, the national organization does not do the same for rehabilitated housing investment. Some NAHB definitions are adapted here, for example the threshold for a substantial rehabilitation in dollar and percentage terms, in performing the analysis.

The Goetz et al. (1997) report also looks at the effect that rehabilitated homes had on neighboring property values. The hedonic regression model constructed by Goetz and associates found a negative impact on neighboring property values of those homes that were demolished or reoccupied in the *Houses to Homes* program. However, these results were not statistically significant. Additionally, the results of the analysis may be the product of a weak spatial variable. The study used a city block as the proxy for a spatial relationship, which may not be a consistent or accurate measure of the spatial relationship. For instance, blocks vary in distance, and the location of each observed property is unpredictable in relation to the other homes on the block.

The 1997 Goetz et al. report also covered research by others concerning the negative effect of abandoned houses on property values. For example, Emrath (1995:8) cited a one-city case study by the National Association of Home Builders, which found that the value of homes located within 30 feet of an abandoned building was reduced by 30%. Another work cited was Goetz et al. (1996:55). Using Minneapolis as a case study, they found that an abandoned housing building in a census tract reduced a property's value by $860. Finally, Moreno (1995:16), based on anecdotal statements from realtors, reported that an abandoned vacant property reduced the value of houses on the same block by $2,500. Moreover, the value of homes located next to, and across the street from, an abandoned vacant unit was reduced by $10,000. All three studies support the notion that the presence of an abandoned vacant house in a neighborhood is a negative situation that should be addressed by rehabilitation activities because allowing it to fester would further discourage investment in the neighborhood.

Using a combination of qualitative and quantitative data from a case study, Tuminaro and Solis (1997) investigated the effects of a highly concentrated neighborhood program in the City of Savannah, Georgia. To reverse the downward trend in property values and social problems within their service area, in 1994 Neighborhood Housing Services (NHS) of Savannah implemented a model-block program focusing on the rehabilitation and homeownership promotion of the most dilapidated block in the city. In 1996, the authors conducted site visits and extensive interviews with the neighborhood residents, first-time homebuyers, city and county officials, local bankers, real estate agents, insurance agents and CDC staff members. The authors documented the effects of NHS' model-block program in terms of increased real estate tax-base, neighborhood economic and business development, and the asset accumulation of the first-time homebuyers. One pertinent conclusion is that the investments made by the city, including Community Development Block Grants (CDBG) and HOME funds amounting to $128,110, (an average investment of $12,811 per rehabilitated housing unit), resulted in an annual increase of $96,960 in the real estate property tax base.

No other reports or articles were found in the literature that deals specifically with the measure of indirect property value benefits of rehabilitated housing. However,

Simons, Quercia and Maric (1998) investigated the indirect property value increases in homes located near new construction in Cleveland, Ohio. Simons and associates found that for every new unit built, the neighboring units experienced an increased value of approximately $670. They also found that rehabilitated housing was associated with a negative and significant effect on nearby property. However, this study used a spatial variable of 2-3 blocks, which may not be sufficiently accurate to detect close-in effects.

In a more refined version of the last article, using superior spatial variables of 150 foot concentric rings, Ding, Simons and Baku (2000) evaluated the effect of neighborhood investment on nearby residential property values. The authors found that proximity to rehab housing significantly increased neighboring property values by about 13 cents for each rehab dollar of investment, (equivalent to an increase in sales price of about 4% of house price) but only within 150 feet. Large scale rehabs (in dollar and/or number of rehabs) had a larger proportional effect than smaller ones. The authors concluded that the optimum scale of rehabs was to stagger investment to every other house or every third house (depending on housing density) to maximize increases to nearby property values. The average distance between houses in the Cleveland market was 40 feet side to side and 120 feet front to rear, implying that the rehab investment affected the house in front, in the rear and as far as three houses side to side. This study also found a significant positive effect of new residential construction on nearby housing, and that the effect extended further away. A statistically significant increase of six cents per dollar of new housing investment was evident within 150 feet, dwindling down to a two-cent increase between 150-300 feet from the new house.

In the context of housing rehabilitation, a positive relationship between rehabbed units and surrounding homes may not reflect the full potential impact of these rehab programs because it compares the beneficial property value effect with other homes not in close proximity to rehabs in the same general time period. Because neighborhoods with substantial rehabs are most often those in economic decline, the opportunity cost of inaction, over time, may be greater than the apparent observed positive effect.

Little information is evident on the economic or social impacts of CDC housing activities. However, some work has been done to examine the economic effects of some types of rehabilitation activities on the economy. For example, Rypkema (1994) looked at the economics of historic preservation. Another study by the University of Rhode Island (1993) examined the economic effects of state expenditures on historical preservation programs over a 20-year period. Both these studies used sophisticated versions of input-output analysis that generally include both direct and induced effects on the local economy. These models are beyond the level of detail addressed in this study.

Other effects of CDC rehab activities are less tangible. Because CDCs that rehab are often targeting lower income areas, new households brought in or existing

households retained in an area can be useful measures of neighborhood revitalization. Minority participation, especially the development of minority contractors and the building of a local trade base, can be important qualitative products of CDC housing rehab programs. Effects of the homeownership-related impacts of rehabs on social conditions such as homeownership rates, voter participation, etc. as discussed by Rohe, McCarthy and Van Zandt (2000) are also important, but left for another research project at a later date.

To summarize, the literature on the subject of rehabs' effect on the local economy is fairly limited. Guidance is available regarding many (but not all) fiscal benefits and costs, which have previously been applied to new construction and can readily be adapted for housing rehabs. These on-budget items are driven by economic factors, such as property value increases and new employment. Other on-budget subsidies are property tax abatement and low-interest first and second mortgages. Fiscal benefits should include new resident income tax, unabated property tax for the new units, increased property taxes from nearby homes positively affected by new housing investment from rehabs, and construction employee income tax, a one-time item (Simons and Sharkey 1997). Retail sales tax from residents should also be evaluated. The benefit:cost ratio should be calculated and compared with new construction. A defensible quantification of the net benefits of housing rehabs on the local economy would allow a better understanding of housing subsidy decisions at the local government level.

Research Design

The sample frame for this study came from the 150 NWOs in the Neighborhood Reinvestment Corporation network that focus on single-family rehabs. From this group, twenty-one organizations were asked to participate. Fiscal data was collected concurrently (from city governments) for all of these cities. Complete and useable information was obtained from ten organizations before the data collection cut-off date. While it is an interesting cross-section of large and small neighborhood groups from throughout the United States, the sample is non-random. Hence, the results of this study cannot readily be generalized to CDCs in general. Exhibit 2 shows the name of each CDC that participated in the study, along with the number of substantial housing rehabilitations and other output during 1996–1997, average staff size and city population.

The NeighborWorks® network, a group of 223 CDCs chartered by Neighborhood Reinvestment, serves a diverse urban and rural population. CDC members have access to substantial training, comprehensive technical assistance, capital funding and a specialized secondary market from the parent organization. For example, in the organization's Revolving Loan Fund (2001 portfolio value $231million), 38% of the borrowers were African American, and 23% were Hispanic. Seventy percent of the loans were made to low- or very low-income households, and 43% of the borrowers were female-headed households. A main feature of the NeighborWorks

Exhibit 2 | Sample Cities and Organizations

NeighborWorks® Organization	Substantial Rehabs	Owner-Occupied Rehabs	New Occupant Rehabs	Staff	City Population
Aberdeen NHS, Inc. (WA)	28	30	4	7	16,565
Neighborhood Conser. Serv. of Barberton, Inc. (OH)	46	77	36	5	27,623
Neighborhoods Inc. of Battle Creek (MI)	105	70	152	25	53,540
Kansas City, Kansas, NHS, Inc. (KS)	25	55	2	3	149,767
NHS of LaGrange, Inc. (GA)	15	25	4	5	25,597
Manchester NHS, Inc. (NH)	28	35	25	7	99,567
NHS of New Orleans, Inc. (LA)	37	16	50	9	496,938
NHS of Phoenix, Inc. (AZ)	13	0	29	6	983,403
NHS of San Antonio, Inc. (TX)	15	22	3	9	935,933
San Diego NHS, Inc. (CA)	22	17	15	5	1,110,549
Total		347	320		
Sample Mean	33.4	35	32	8	389,948

Revolving Loan Fund® is that it leverages investment from private and public sources. In 2001, the network's affordable housing and community revitalization activities resulted in $1.4 billion in investment in their service areas, of which the Revolving Loan Fund constituted $90 million. During the year the research was undertaken (1997), the Neighborhood Reinvestment Network members' single-family home rehab program produced 4,764 units, of which 1,425 units (30%) were in conjunction with their new homeownership program.

Data Gathering and Background Information

In collaboration with the Neighborhood Reinvestment home office, two survey instruments were created, the first a general one for NeighborWorks executive directors, the second more detailed for a project-by-project analysis. Site visits and instrument pre-tests were also made in Barberton, Ohio; Baltimore, Maryland; and Cleveland, Ohio.

Cities were also contacted directly to determine the local tax structure and subsidies offered to encourage housing rehabilitation in each community. The matrix of costs included administrative support for each NeighborWorks member, several types of loans, grants and others. Local benefits included direct property tax, indirect property tax (neighborhood effects, discussed below), loan repayment,

and sales and income tax. The inclusion of these costs and benefits were derived from the literature, primarily from Simons and Sharkey (1997), which focused exclusively on Cleveland, Ohio. Because other cities' tax structures were often quite different, local revenues, tax items and rates were closely evaluated in order to be able to model each one effectively.

Neighborhood Effects of Housing Rehab Activity

Housing market participants have been shown to price the positive effects of new residential investment in their neighborhoods. These increased sales prices are translated into increased property taxes over time. Housing rehabs have been shown to positively impact their immediate environment, therefore this positive externality justifies the additional support of rehab activities.

In order to determine the indirect property tax benefits of housing rehab activities on adjacent properties, in a related article some of the authors conducted a statistical analysis of the effect of rehabs on nearby sales prices of homes in Cleveland, Ohio (Ding, Simons and Baku, 2000). The authors evaluated about 7,600 residential sales in the City of Cleveland that took place during 1996–1997. In the six years prior to the sales, several hundred new houses and almost a thousand housing rehabs (some private, some by not-for-profit groups) took place in the city. Using hedonic regression analysis, the housing markets in the city were modeled. Variables in these models include unit characteristics such as lot size, number of rooms and square footage, as well as census tract demographic information. Geographic Information Systems (GIS) were utilized to accurately match housing sales with nearby new housing and rehabs. The statistical models explained just over 60% of the housing sales price, an acceptable level.

The results found that close proximity to housing rehabs had a significant and positive effect on nearby residential sales prices. More specifically, for each dollar of rehab investment, adjacent homes sold for $0.13 more, holding all else constant. The effect was not detectable more than 150 feet from the rehab. It is important to note that the Cleveland market has typical city lots that have frontage between 35 and 40 feet, with lot depths that approximate 120 feet.

Understandably, the Cleveland results are not directly generalizable to all markets. However, the notion that rehabs positively affect nearby property values is supported in theory, and the Cleveland experience provides the only known measurement of this effect. Therefore, in extending the Cleveland study to the current research, adjustments had to be made to application of the positive externality property appreciation factor. The 13 cents was applied for every rehab dollar invested factor in all ten markets. However, the economies of scale finding were not applied, which could be attributed solely to the Cleveland market. Further, the average housing density (lot width and depth) in each market was considered, and where necessary downward adjustments were made to the number

of units affected by the positive externality where density was lower. Also, Cleveland's population of approximately 500,000 during the study period would place it in the upper-middle portion of the sample's population range. Overall, with these adjustments, and because of the many commonalities in real estate market behavior (especially when measured in percentage or proportional form), the Cleveland results were applied to the ten communities with confidence.

Fiscal and Economic Modeling

Fiscal and economic models were constructed to calculate the impacts of the projects on the local municipality. The fiscal model was prepared from the perspective of the local government entity, using a benefit-in and cost-out approach where each cost and benefit was entered in the appropriate year and discounted by a municipal discount rate to present value. Rehab projects initiated in 1996–1997 were modeled, and benefits and costs were projected thirty years into the future. Fiscal costs and benefits were developed for each rehab project, then aggregated to form a case study for each CDC. Exhibit 3 shows some details of costs and benefits, how they were calculated and their underlying assumptions. The final measure is the present value of fiscal benefits received to fiscal costs incurred, from the governments' perspective. A detailed example of the methodology is provided in the Appendix. The community name has been changed to protect the confidentiality of the respondent.

Modeling Costs

In general, most costs were incurred the year the housing unit was rehabilitated, while the benefits accrued over time. On the cost side, many costs to the city (subsidies to the CDC) were one-time grants or in-kind items (administrative support, donated buildings, grants, infrastructure, technical expertise), that were applied in the year the rehab unit was built (that is, undiscounted in year zero in the present value model). Other items, mostly loans (first mortgage, deferred mortgages), were considered costs the year that the principal and/or interest was provided to the CDC. Tax abatement was considered an ongoing item for the duration of the subsidy period.

Modeling Benefits

On the benefit side (expense to the CDC or future occupant of the unit), most of the payments are of the on-going variety. Only construction income tax and material sales tax, both related to unit construction, were modeled as first year items. It was assumed that material sales took place in the city in which the rehabilitations were performed.

Exhibit 3 | Calculation Methods for Fiscal Costs and Benefits

	Method of Calculation	Term	Time Applied
Panel A: Costs			
Administrative	Percentage of administrative costs from city net of all costs except substantial and moderate rehabs	One time	Year zero
Buildings in kind	Value of buildings donated to the NWO from the city	One time	Year zero
Deferred mortgages	Amount of the mortgage	One time	Year zero
First mortgages	Amount of the mortgage	One time	Year zero
Grants	Amount of the grant	One time	Year zero
Infrastructure	Cost of the infrastructure improvement	One time	Year zero
Other loans	Amount of the loan	One time	Year zero
Property tax abatement	(City share of tax rate)*(Abatement amount)	Abatement period	Years 1-term
Technical expertise	Costs of technical expertise to the city	One time	Year zero
Panel B: Benefits			
Construction income tax	(City income tax rate)*(Rehab labor costs)	One time	Year zero
Direct property tax	(City share of tax rate)*(Increased unabated tax value after rehab)	Annual	30 years
Indirect property tax	(City share of tax rate)*(Indirect increased tax value)	Annual	30 years
Loan repayment	Loan repayments for each year	Term of loan	Years 1-term
Material sales tax	(Costs of building for rehab)*(City sales tax rate)	One time	Year zero
New occupant income tax	(New occupant income)*(City income tax rate)	Annual	30 years
New occupant sales tax	(New occupant retail sales)*(City sales tax rate)	Annual	30 years

Ongoing benefit items can be divided into three groups. First is the property tax, modeled out thirty years into the future. For direct property tax from the rehabbed units, the assessed value after the rehab was estimated and multiplied by the city share of the property tax rate. Interestingly enough, not all rehab expenses were translated into value (due to the investment instead into maintenance activities), so only about half of the rehab amount translated into an increased assessment. Calculating indirect property taxes from nearby units that were expected to experience an increase in value was more straightforward: the results of the Ding, Simons and Baku study (2000) were applied as stated above.

The next item, also straightforward, was the calculation of loan repayments. Any principal and interest payments, according to the loan agreement, were modeled and assumed to be paid back. For default rates, an assumption was made that the loan would be paid back, unless there was information from the CDC or city administrator to the contrary. For deferred mortgages, local experience was relied upon as to forgiveness rates, which were generally quite high.

The third type of benefit item features ongoing taxes to be paid over time by new occupants to the city who reside in newly refurbished homes. These taxes include local income tax and local sales tax, if charged by the municipality. Because some occupants of units were already city residents, each CDC was asked about the proportion of new residents and only the fiscal benefits were applied to newcomers, on the basis of "increasing the size of the (fiscal) pie." Another assumption made was that households would not have moved to the city if not for the housing rehabilitation program, due to either to a lack of funding or a lack of supply of quality affordable housing.

Economic (rather than fiscal) factors included non-budget items in the general economy outside the city budget. Economic benefits were tracked as one-time or ongoing effects. There are two broad groups. The first group is linked to fiscal benefits, including jobs created, retail sales and property value increases (which generate income tax, sales tax and property tax, respectively). The second group includes economic benefits such as abandoned units refurbished, new homeownership (and its associated benefits discussed earlier) and minority contractor participation. These items are identified but not linked directly to budgetary matters.

Results of the Analysis

Although the sample of ten case studies is not directly generalizable to house-rehabbing members of the Neighborhood Reinvestment Network or CDCs in general, taken as a body, the case material does provide some interesting insights as to the popularity of not-for-profit rehab programs. A few line items (administrative cost subsidies, property tax revenues) are examined in more detail.

Overall benefit/cost relationships at the organization (CDC) level and economic benefits are also of interest.

Fiscal Costs

Fiscal costs include the present value of all subsidies and financing the CDCs received from their local city in support of rehab projects. The total fiscal cost for all ten housing groups studied was $2.97 million. The typical experience was between $8,900 and $9,500 per unit of output (334 total rehabbed units).[2]

Administrative support was the most common subsidy. The average per unit administrative subsidy for the nine programs that took advantage of this item was $3,209.

Loans deferred for a given period of time or until the transfer of the property were also a popular subsidy. The average unit received a deferred loan of approximately $6,161 from the respective city. Interest rates and payback period varied for these loans.

Only two cities offered first mortgages to subsidize the rehabilitation projects of its NWO member. For the purpose of this analysis, first mortgages only include those loans that amortize over a given period where the payback begins immediately after loan origination. These loans averaged $15,712 per unit.

Another popular subsidy type was the forgiveable loan, or grant, typically forgiven over a period of five to ten years if the recipient remained in the rehabbed home. These loans were generally transferable to the heirs of the homes. Therefore, an assumption was made that none of these loans were repaid, thus they were classified as grants. The average grant amount was $3,882.

The final subsidy type was classified as other loans. These consist of below-market-rate loans, simple interest loans and no-interest loans that are repaid over a given period, but are not deferred. These loans averaged $7,162 per unit in the cities that used them. Exhibit 4 summarizes the per-unit and total fiscal costs for each subsidy.

Fiscal Benefits

Fiscal benefits are determined by the tax structure of each city government. The total fiscal benefits received among the ten case study organizations was $2.56 million, or about $7,700 per unit of output averaged over all 334 units studied in all ten cities.

The largest benefit line item for the cities with first mortgages, deferred loans and other loans was the loan repayment benefit. Each loan payment stream was calculated and its present value was derived in order to calculate this benefit.

Exhibit 4 | Summary of Program Costs

Present Value of Costs	Per Unit ($)	Units	Total ($)
Administrative costs	3,209	321	1,030,120
Buildings in kind	—	0	—
Deferred loans	6,161	74	455,894
First mortgages	15,712	30	471,356
Grants	3,882	55	213,525
Other loans	7,162	112	802,193
Tax abatement	—	0	—
Technical expertise	—	0	—
Total			2,973,088

The present value of the total loan repayment for all projects was $1,010,813, or $6,163 per unit for those programs with loans available.

All municipalities except one collected direct property tax. This benefit is dependent on the percentage of the rehab cost captured as increased value for the property, the amount of the rehab and the cities' property tax rates. The total direct property tax increase was $412,666, or $1,294 per unit.

Indirect property tax is driven by nearby property value appreciation, and was discussed in some detail earlier (see Neighborhood Effects of Housing Rehab Activity). Indirect property tax impacts were calculated on nearby property for all CDCs in the study group except two.[3] The other eight cities received a total of $827,577, or $3,183 per unit of indirect property tax benefits. It is interesting to note that indirect benefits exceed direct property tax benefits. Part of this is attributable to the fact that less than half of rehab investment dollars are translated into increases in assessed value for the rehabbed unit (rather, the investment is dedicated to maintenance-related activity).

Two cities (Barberton and Battle Creek) had a city income tax. For the NWO members operating in these two Midwestern municipalities, construction worker income tax totaled $23,712, or $157 per unit. The same two communities also collected new occupant income tax. Income taxes were only calculated for the residents that are new residents of the cities. This benefit totaled $222,822, or $1,476 per unit of output.

New occupant sales tax was also calculated for the cities that had both new residents and a city sales tax. The cities that qualified were Phoenix and San Diego. These cities received a total of $33,104, or $946 per unit of output for the sales taxes that will be generated by the new residents.

Exhibit 5 | Summary of Program Benefits

Present Value of Benefits	Per Unit ($)	Units	Total ($)
Construction income tax	157	151	23,712
Direct property tax	1,294	319	412,666
Indirect property tax	3,183	260	827,577
Loan repayment	6,163	164	1,010,813
Materials sales tax	248	127	31,493
New occupant income tax	1,476	151	222,822
New occupant sales tax	946	35	33,104
Total			2,562,187

Exhibit 6 | Fiscal Costs and Benefits of NWO Operations
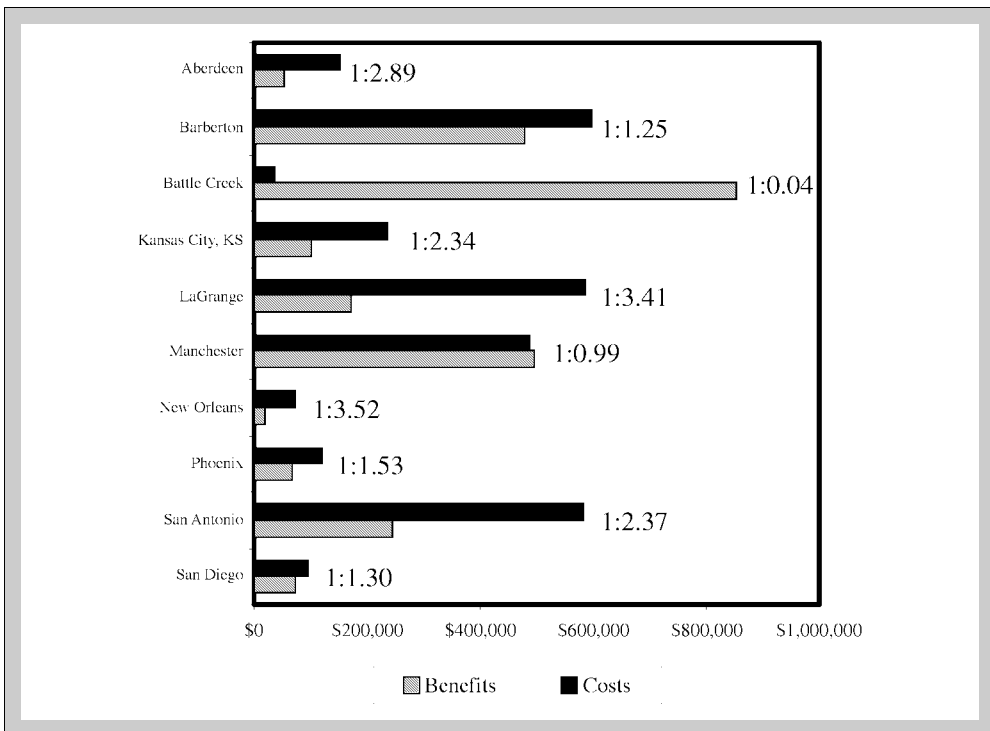
Cities with sales tax received the benefit of the sales tax collected on the construction materials sold that were used in the rehab project. This benefit totaled $31,493, or $248 per unit of output. Exhibit 5 summarizes the per-unit and total fiscal benefits for each type of benefit.

Fiscal Benefit:Cost Analysis

A benefit:cost analysis involves the calculation of present values for all costs and benefits over a stated period of time and compares the two in a ratio. The product of this analysis is the benefit:cost ratio, which indicates the amount of a cost needed to generate the corresponding benefit. For instance, a benefit:cost ratio of 1:2 means that in order to generate one unit of benefit, two units of cost must be used. This corresponds to a fiscal benefit of $0.50 per invested public dollar. The average benefit:cost ratio for the ten programs in this study was just under 1:2. Only two programs had benefit:cost ratios that were greater than one, which would indicate that subsidies could be justified based solely on fiscal factors. Exhibit 6 shows the total costs and benefits for each of the ten case study programs.

Another way to look at the benefit:cost ratio is to consider the city's return for every dollar spent. In the sample, the typical experience was that a dollar invested

Exhibit 7 | Return on Cities' Investment

NWO	Return on $1 Invested ($)
Aberdeen	0.35
Barberton	0.80
Battle Creek	22.67
Kansas City, KS	0.43
LaGrange	0.29
Manchester	1.01
New Orleans	0.28
Phoenix	0.65
San Antonio	0.42
San Diego	0.77
Average (9)	0.56
Average (all 10)	2.77
Median (all 10)	0.54

Note: Because Battle Creek is so different from the others, an analysis was run with the remaining NWOs.

returned $0.54–$0.56 in fiscal benefits (depending on which measure of central tendency is applied), for every dollar of cost. The range was considerable. On the low end were New Orleans, Louisiana ($0.28 in benefits for each public dollar invested) and LaGrange, Georgia ($0.29), both communities with fairly typical costs but where a major benefit item, property taxes, was not applicable. On the high end was Battle Creek, Michigan ($22.67 in benefits for each public dollar), which was so high because of strong output and virtually no public subsidies.[4]

Exhibit 8 | Total Economic Impacts of 10 NWO Programs

	One Time Benefits[a]	On-Going Benefits[b]
Panel A: Jobs		
FTE in organization	20.2	2.0
FTE construction jobs	195.2	—
FTE indirect jobs (retail)	5.3	—
Total FTE	220.8	2.0
Panel B: Minority Contractors		
FBE contractors	31.0	
MBE contractors	105.0	
Total minority contractors	136.0	
Panel C: Economic Impacts		
New households to the city	40.0	
New homeowners	70.0	
New homeowners	102.0	
Panel D: Retail/Material Sales		
Construction material sales	$3,993,730	
Increased retail sales in area	$195,249	$22,669
Total sales	$4,188,979	
Panel E: Property Values		
Homes in programs	$4,599,545	
Neighboring properties	$9,159,603	
Total real estate value added	$13,759,148	

Notes:
[a]One time benefits include those benefits that accrue from the construction jobs, construction job spin-offs, new residents to the area and rehabilitated homes.
[b]On-going benefits include those annual benefits accrued from new residents, rehabilitated units and neighboring properties on a sustained basis.

Exhibit 7 shows the return each program returned to the respective city for each city dollar invested.

Economic Impacts

In addition to the on-budget fiscal benefits and costs the city receives (or incurs) as a result of the rehab projects, economic benefits are also generated, off-budget, in the local economy. These economic benefits include job creation, minority business support higher property values, decreasing the number of abandoned homes and increasing homeownership rates retail sales. As mentioned above, some of these benefits do result directly in fiscal affects (jobs, retail sales and increased property values). However, since many of these benefits are not measured in dollars, they are ''apples'' to the fiscal on-budget ''oranges'' and thus must be considered separately. Also, these items affect the economy in general, rather than the local municipal budget. We recognize that this fairly simplistic approach did not utilize an input-output model.

In addition to the fiscal benefits the city received from the projects, the ten NWOs, with a total output of 334 rehabbed units, generated substantial economic benefits. For example, 221 full-time (one time) equivalent jobs were created as a result of the rehab activities. Of these, the vast majority were for unit construction-related activities. Further, these CDCs hired 136 minority and female business enterprises as contractors, helping provide valuable experience for these business owners that can make them more competitive in future activities.

The rehab activity brought forty new households to their respective cities and subsidized a total of 102 new homeowners, helping them get on the equity ladder and access all the other potential benefits associated with new homeownership. Also, rehab activity converted seventy abandoned units into occupied units, helping reduce blight in these communities.

Retail sales increased by $4.2 million (mostly one-time expenditures due to construction materials), supporting local contractor-patronized building suppliers. Finally, direct ($4.6 million) and indirect ($9.2 million) property values attributable to the rehabs went up by an estimated total of $13.8 million. Exhibit 8 shows this information.

Conclusion and Policy Implications

The typical experience for the CDCs in the sample was that each municipal dollar invested returned $0.54–$0.56 in fiscal benefits, and two of the ten CDCs returned more than one dollar for each dollar invested. Strictly as an observation, and not implying generalizability beyond this sample, this is comparable to the benefit: cost ratios for Cleveland new housing programs (Simons and Sharkey 1997:159). Two of the CDCs programs had returns of less than $0.30, but the fiscal benefits

in these communities were constrained by the absence of applicable property taxes, (a local tax policy), rather than by program costs.

The economic benefits resulting from program activity were substantial. One-time effects such as construction jobs and minority contractors used are tangible benefits. Longer-term contributions to the urban fabric through reduction of blighted (vacant) property and creation of new homeownership opportunities are also impressive, but could be improved. Increases in property value of both subjects and nearby homes were important.

The data gathering effort for this research was surprisingly difficult. The research method required extensive detail (*e.g.*, project-specific data and instructions, coupled with interviews of CDC executive directors) in order to be defensible. As a result, eliciting timely responses from the NWOs for this study was problematic, indicating that the data were not readily available.

In addition, the variability of the experiences of the ten CDCs was substantial. Except for a few line items (administrative support, loan repayment, property taxes), the programs were often unique, with widely varying costs, benefits and return on municipal investment. Economic returns were more consistent, but still had substantial variation.

The benefit side of the fiscal equation is substantially enhanced by property value increases to neighboring property, which generate property tax revenues. Likewise, economic benefits also feature property value increases. This positive externality, the neighborhood effect of housing rehab activity, was readily evident in Cleveland. However, this topic should be studied in other markets to determine if the effect can be detected and under what conditions these impacts can be seen to vary with investment size and neighborhood demographics.

Using the results from the ten NWOs, the study makes some recommendations for community development corporations involved in housing rehab activities. The conclusions noted below are from the perspective of maximizing the CDCs' operational efficiency and fiscal and economic benefit-cost ratios, which, if documented, should facilitate fundraising at the local government level on efficiency grounds.

One of the main problems in studying CDCs is the availability of reliable and relevant data. Not unlike many other studies in this field, there were a number of difficulties obtaining the data. The research method required extensive quantitative data. Given the fact that many CDCs do not have sophisticated management information systems, eliciting timely responses from the sample group was problematic, indicating that the data were not readily available. If the CDC movement, its funding institutions, government partners and supporters desire to promote quantitative research along with a rigorous methodology in the field, there is a dire need to enhance and promote CDCs' electronic management information systems and train and retain personnel familiar with these systems. As the sources of funding increasingly demand quantitative measures of CDC effectiveness and

efficiency, an effective electronic management information system becomes a necessity for the survival of CDCs in a highly competitive funding environment (Cowan, Rohe and Baku 1999).

Within the limited focus of the study, in order to increase the fiscal benefits for its respective city, a CDC should attempt to combine rehab programs with homeownership services. Such a two-pronged affordable housing approach, as used by Neighborhood Inc. of Battle Creek, would have stronger positive effects on the value of neighborhood property and thus on the real estate tax base. If such a combined rehab-homeownership program attempts to maximize the number of new households CDCs bring to the city, the fiscal benefit would be enhanced. For example, the addition of new households to the city benefits the city on every fiscal line item, especially if the new resident occupies a previously vacant unit. Under these conditions, there would be a new resident income tax, new resident sales tax if applicable, in addition to the other benefits.[5]

Also, CDCs should also attempt to lower the administrative costs related to their rehab programs. The findings show that the administrative costs associated with CDCs' rehab program accounts for the largest non-refundable support from the city. The findings also show that the larger the volume of rehab production, the lower the administrative cost per unit. Thus, by increasing CDCs' rehabbed output, the administrative costs will tend to be reduced (*e.g.*, greater economies of scale). Alternatively, CDCs should consider charging service fees for the above-mentioned programmatic services to successful loan applicants. Allowing the neediest applicants to finance these fees in their loan amount would mean the programs should still be available to lower income households.

Further, CDCs may want to increase fiscal benefits by adjusting the type of rehabilitation projects they choose to complete. For instance, San Diego's benefit: cost ratio of 1:1.3 was among the highest (most favorable) of the sample partially due to the program's policy of acquiring its properties before and reselling them after completion of the rehab project. Therefore, the property tax assessor realizes the full increase in value because the property is revalued as the sale price on the tax record. The programs can also attempt to perform more projects that will increase the value of the property rather than maintenance-related rehab work. A larger portion of major rehab work could convert a higher portion of investment to value, which would translate to more property taxes for the city. It is recognized that this would also entail higher costs to the occupant.

A policy that CDCs' cities should generally avoid (from a fiscal impact standpoint) is grants or forgiven mortgages. If the economic situation of a particular homeowner or group of homeowners requires this type on a non-refundable basis, then a more effective policy would involve deferred loans. Deferred mortgages generally are structured so no payment or only simple interest payments are required until the property is transferred.

CDCs should focus on the renovation of vacant properties. The reduction of what are viewed as blighted or empty homes is a large contribution to the economic

well-being of the city. This conversion of vacant units can be easily tracked and calculated, and provides a visible improvement to the city and neighborhood.

The creation of new homeowners and improvement of the image of structures in neighborhoods are other economic benefits the CDCs should try to maximize. The benefits of increased homeownership rates are well documented and recognized (Collins 1999; and Rohe, McCarthy and Van Zandt 2000). Neighborhoods with high homeownership rates experience less decline and more neighborhood pride and involvement. Additionally, investment in neighboring properties encourages others to also invest in their homes.

Results from the analysis of the effects of rehabs on nearby property values indicate that a concentration of investment (several rehabs on the same block) may produce a higher off-site property impact than a highly dispersed pattern. For example, a strategy that spreads out rehabbed units 200–300 feet apart would be expected to produce a higher property value impact in the neighborhood, compared with a model-block neighborhood revitalization approach. The latter strategy would be expected to produce a lower value impact because the value influence of a given rehab unit would overlap with those other rehabs in its proximity, thus encompassing a smaller number of nearby homes. There also may be proportionately larger beneficial effects for larger scale projects and in higher income neighborhoods. These findings are based on the Cleveland study (Ding, Simons and Baku 2000) and may be generalizable to other areas: more research is needed here.

CDCs should be cognizant of the fact that when the rehab is limited to the interior of a unit and if that unit is not sold to an outside party, very few persons will become aware that the rehab has occurred. By investing more on the exterior of the property for its visibility and ''curb appeal,'' CDCs would have an enhanced revitalization effect on neighborhood properties. Also, rehabbing units with high visibility (*e.g.*, at the corner of an intersection) should have a larger effect than a unit that is hidden in mid-block.

Finally, job creation, especially in the area of capacity building as measured by minority and woman owned business contractor participation, is another important economic benefit the programs are providing to the cities. Increased minority participation furthers the affirmative action policies of applicable cities.

Overall, housing rehabs by community development corporations have been shown to have substantial fiscal benefits for public dollars invested. However, in many cases benefits do not outweigh costs provided by local municipalities strictly on a fiscal basis. In addition to these budgetary factors, substantial positive economic benefits are provided by rehab activity, indicating that CDCs engaged in housing rehabilitation provide an important service in strengthening the urban fabric and enhancing the lives of present and future homeowners and are worthy of continued support.

Appendix

Anytown, USA — NCS of Anytown, USA
Summary of Anytown, USA

Number of Units	46
Total Direct Property Increase	$80,811
Percentage of Rehab. Cost Realized in Assessed Value	25%

Assumptions

Inflation	3%
New Households to City	15
Property Value Increase	$1,757
Income/Home Value	40%
Average Rehab Investment	$7,027
Average Home Value	$63,000
Income	$25,000
Reassessment	3

Second Mortgages

Average Amount	
Interest Rate	
Term	

Subsidized Loans

Term	
City Discount Rate	5.5%
Number of Loans	
Interest Rate	

Administrative Costs

Number of Units	46
Costs per Unit	4,709
Total Administrative	216,000
Buildings in Kind	
Average Value	
Number	

Tax Abatement

Average Abatement	
Number of Units	
Years of Abatement	
Grants	
Ave. Amount	

Appendix (continued)

Anytown, USA — NCS of Anytown, USA
Summary of Anytown, USA

Number
Technical Assistance
Average Per Project
Number of Projects

Permit Fee Waivers
Ave. Waived Amount
Number of Waivers

Infrastructure
Ave. Cost per Unit
Number of Units
Indirect Property Tax

Number w/in 150′	8
Increase	12.6%

Direct Property Tax

City Share Tax Rate	0.12%
Average Increase	$1,757

Resident Sales Tax
Ave. Home Value
City Sales Tax Rate
Sales Tax Factor
Building Material Sales Tax
Ave. Cost of Materials
City Sales Tax Rates
Number of Homes
New Occupant Sales Tax
Ave. Taxable Goods
City Sales Tax Rates
Construction Income Tax

City Income Tax Rate	2%
Average Labor Costs	$3,865

New Occupant Income Tax

Appendix (continued)

Anytown, USA — NCS of Anytown, USA
Summary of Anytown, USA

	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15	Year 16	Year 17	Year 18	Year 19	Year 20	Year 21
Costs																						
Administrative costs	$216,600																					
Buildings in kind																						
Deferred mortgages	$164,378																					
First mortgages																						
Grants																						
Other loans	$216,554																						
Tax abatement																						
Technical expertise																						
Total	$597,532																						
City's discount factor	1.000	0.9479	0.8985	0.8516	0.8072	0.7651	0.7252	0.6874	0.6516	0.6176	0.5854	0.5549	0.5260	0.4986	0.4726	0.4479	0.4246	0.4024	0.3815	0.3616	0.3427	0.3249
Present value / year	$597,532	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Sum of present values	$597,532																					
Benefits																						
Construction income tax	$3,556																					
Direct property tax	$0	$97	$97	$97	$106	$106	$106	$116	$116	$116	$127	$127	$127	$138	$138	$138	$151	$151	$151	$165	$165	$165

Appendix (continued)

Anytown, USA — NCS of Anytown, USA
Summary of Anytown, USA

	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15	Year 16	Year 17	Year 18	Year 19	Year 20	Year 21
Indirect property tax	$0	$391	$391	$391	$427	$427	$427	$467	$467	$467	$510	$510	$510	$557	$557	$557	$609	$609	$609	$666	$666	$666
Loan repayment	$0	$29,492	$29,493	$29,494	$29,495	$29,496	$29,497	$28,040	$20,197	$14,867	$179,246	$12,329	$12,330	$1,548	$1,549	$1,550	$0	$0	$0	$0	$0	$0
Materials sales tax																						
New occup. income tax		$7,560	$7,787	$8,020	$8,261	$8,509	$8,764	$9,027	$9,298	$9,577	$9,864	$10,160	$10,465	$10,779	$11,102	$11,435	$11,778	$12,132	$12,496	$12,870	$13,257	$13,654
New occup. sales tax																						
Total	$3,556	$37,540	$37,768	$38,003	$38,289	$38,538	$38,795	$37,650	$30,077	$25,026	$189,747	$23,126	$23,431	$13,023	$13,347	$13,681	$12,538	$12,892	$13,256	$13,701	$14,087	$14,485
City's discount factor	1.000	0.9479	0.8985	0.8516	0.8072	0.7651	0.7252	0.6874	0.6516	0.6176	0.5854	0.5549	0.5260	0.4986	0.4726	0.4479	0.4246	0.4024	0.3815	0.3616	0.3427	0.3249
Present value / year	$3,556	$35,583	$33,933	$32,364	$30,908	$29,487	$28,136	$25,882	$19,598	$15,457	$111,084	$12,833	$12,324	$6,493	$6,307	$6,128	$5,324	$5,188	$5,057	$4,954	$4,828	$4,706
Sum of present values	$477,831																					
Benefits less cost / year	−$593,976	$37,540	$37,768	$38,003	$38,289	$38,538	$38,795	$37,650	$30,077	$25,026	$189,747	$23,126	$23,431	$13,023	$13,347	$13,681	$12,538	$12,892	$13,256	$13,701	$14,087	$14,485
City's discount factor	1.0000	0.9479	0.8985	0.8516	0.8072	0.7651	0.7252	0.6874	0.6516	0.6176	0.5854	0.5549	0.5260	0.4986	0.4726	0.4479	0.4246	0.4024	0.3815	0.3616	0.3427	0.3249
Present value / year	−$593,976	$35,583	$33,933	$32,364	$30,908	$29,487	$28,136	$25,882	$19,598	$15,457	$111,084	$12,833	$12,324	$6,493	$6,307	$6,128	$5,324	$5,188	$5,057	$4,954	$4,828	$4,706
Sum of present values	−$119,701																					

Appendix (continued)

Anytown, USA — NCS of Anytown, USA
Summary of Anytown, USA

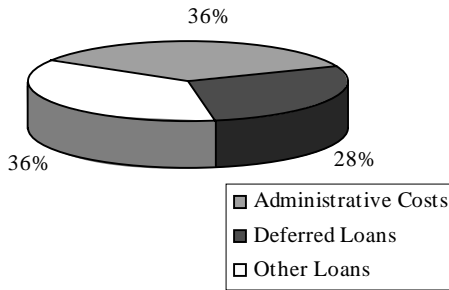|	Per Unit ($)	Total[a] ($)
Panel A: Present Value of Benefits		
Construction income tax	77	3,556
Direct property tax	42	1,933
Indirect property tax	169	7,795
Loan repayment	6,727	309,420
Materials sales tax	—	—
New occup. income tax	3,372	155,126
New occup. sales tax	—	—
Totals	10,388	477,831
Panel B: Present Value of Costs		
Administrative costs	4,709	216,600
Buildings in kind	—	—
Deferred loans	3,573	164,378
First mortgages	—	—
Grants	—	—
Other loans	4,708	216,554
Tax abatement	—	—
Technical expertise	—	—
Totals	12,990	597,532

Notes: Cost: Benefit Ratio = 1.25: 1. City's Return on One Dollar Invested = $0.80.
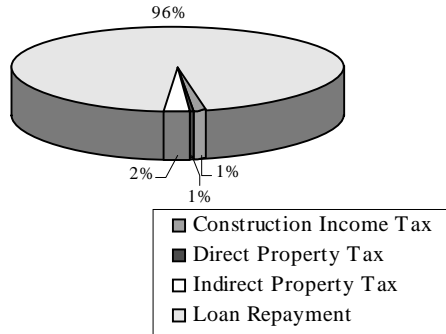[a]46 units

Appendix (continued)

Anytown, USA — NCS of Anytown, USA
Summary of Anytown, USA

Distribution of Present Values of Costs

36%

36%   28%

- ☐ Administrative Costs
- ☐ Deferred Loans
- ☐ Other Loans

Distribution of Present Values of Benefits

96%

2% ⎯   ⎯ 1%
1%

- ☐ Construction Income Tax
- ☐ Direct Property Tax
- ☐ Indirect Property Tax
- ☐ Loan Repayment

Endnotes

[1] The *Housing to Homes* program, initiated by the city of St. Paul (MN), provides funds to fill the gap between renovation costs and sales prices in inner-city low-income neighborhoods for single-family homes use. The program also funds demolition of substandard housing and new construction of owner-occupied, single-family homes on vacant lots.

[2] Typical experience is used where the distribution of the item being discussed is not normal and average or median statistics would be misleading.

[3] Property tax benefits were not calculated for LaGrange and New Orleans. The first city does not have a property tax levy. The second has a homestead exemption, which did not require any of the homes in the program to pay property tax to the city for the improvements.

[4] The Battle Creek CDC has a very high fiscal benefit-cost ratio and is an anomaly in this study. Unlike a typical NWO, whose administrative costs for rehab programs are supported by the city's Community Development Block Grant funds, this organization has the major share of its administrative costs covered by a large contribution from a not-for-profit entity. This reduces the fiscal costs associated its rehab program. Also, in 1996–1997, this CDC produced a large volume of rehab units (105), far more than any other CDC in the sample. Further, a large portion of these were for new homeowners, which in turn leads to substantial amounts of ongoing taxes, which are added on the fiscal benefits side of the equation.

[5] It is recognized that there are also substantial benefits to assisting a renter already residing in the city in becoming a new homeowner, but from a strictly benefit:cost analysis perspective, a new city resident, especially if he also was previously a renter, would have

a larger fiscal impact by ''increasing the size of the economic pie'' in the city. These important benefits of homeownership are discussed in other parts of this paper.

References

Cowan, S. M., W. Rohe and E. Baku, Factors Influencing the Performance of Community Development Corporations, *Journal of Urban Affairs*, 1999, 21:3, 324–39.

Collins, M., *The Many Benefits of Home Ownership*, Washington DC: Neighborhood Reinvestment, 1999.

Ding, C., R. A. Simons and E. Baku. The Effect of Residential Investment on Nearby Housing Values: Evidence from Cleveland, Ohio, *Journal of Real Estate Research*, 2000, 19:1/2, 23–48.

Daley, M., M. Algeria, D. McCarty, J. J. Callahan Jr., D. S. Shepard and C. N. Williams, The Cost of Crime and the Benefit of Substance Abuse Treatment for Pregnant Women, *Journal of Substance Abuse Treatment*, 2000, 19: 445–65.

Emrath, P., Features that Influence Home Values, *Housing Economics*. 1995, December, 8.

French, M. T., H. J. Salome, J. L. Sindelar and A. T. McLellan, Benefit-Cost Analysis of Addiction Treatment, *Health Services Research*, 2002, 37, 423–33.

Goetz, E., et al., There Goes the Neighborhood? The Impact of Subsidized Multi-Family Housing on Urban Neighborhoods, Minneapolis: Center for Urban and Regional Affairs, 1996, 55.

——., The Fiscal Impacts of the St. Paul HOUSES TO HOMES Program, Unpublished Report, 1997.

Koven, A. and S. Koven, Tax Reform: Housing Incentives in Des Moines, Iowa, *Journal of Urban Affairs*, 1993, 15:6, 491–503.

Johnson, M. and A. Harter, Economic Impacts of Subsidized Housing Location, 1998.

Moreno, A., Cost Effectiveness of Mortgage Foreclosure Prevention, Family Housing Fund of Minneapolis and Saint Paul, November 1995, 16.

Robertson, A. A., P. W. Grimes and K. E. Rogers, A Short-Run Cost-Benefit Analysis of Community-Based Intervention for Juvenile Offenders, *Crime and Delinquency*, 2001, 47, 265–82.

Rohe, W., G. McCarthy and S. Van Zandt, The Social benefits and Costs of Homeownership, Working paper 00-01, Washington DC: Research Institute for Housing America, 2000.

Rypkema, D., *The Economies of Historic Preservation: A Community Leaders' Guide*. Washington DC: National Trust for Historic Preservation, 1994.

Simons, R. and D. Sharkey, Jump-Starting Cleveland's New Urban Housing Markets: Do the Potential Fiscal Benefits Justify the Public Subsidy Costs?, *Housing Policy Debate*, 1997, 8, 143–71.

Simons, R., R. Quercia and I. Maric, The Effect of New Housing Construction and Neighborhood Disinvestment on Residential Sales Price, *Journal of Real Estate Research*, 1998, 15, 147–61.

Tuminaro, S. J. and A. Solis, A Case Study of Neighborhood Housing Services of Savanna, Prepared for: Neighborhood Reinvestment Corporation, 1997.

University of Rhode Island, Intergovernmental Policy Analysis Program, *Economic Effects of the Rhode island Historical Preservation Commission Program Expenditures from 1971 to 1993*, 1993

Urban Institute, *Coming of Age: Trends and Achievements of Community-Based Development Corporations; NCCED Fourth National Community Development Census*, Washington DC: Urban Institute, 1999.

Robert A. Simons, Cleveland State University, Cleveland, OH 44115 or roby@urban.csuohio.edu.

A. J. Magner, ICI-Delux Paints Real Estate, Cleveland, OH 44115 or aj-magner@ici.com.

Esmail Baku, Neighborhood Reinvestment Corporation, Washington, DC or ebaku@nw.org.