Tennessee Housing Development Agency
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Economic Impact of THDA Activities in Calendar Year 2006 on the Tennessee Economy

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EXECUTIVE SUMMARY

Identified as one of the basic human needs, housing has a profound impact, both social and economic, on individuals and communities. Healthy families, increases in educational achievement, successful employment, and improvements in neighborhood stability and security are positively associated with sound, affordable housing. Both housing rehabilitation and the construction of new homes generate jobs and income in the community and produce additional tax revenue.

In this study, we developed a comprehensive framework to estimate the *economic* impact of Tennessee Housing Development Agency (THDA) activities in providing affordable, decent, stable housing options to low- and moderate-income households. To this end, we reviewed THDA programs, both loans and grants, to determine the scope and the monetary flows of each program's activities.

Because of the economic multipliers or "ripple" effect, our affordable housing programs impact all industries in the economy, going far beyond the specific unit or neighborhood in which THDA program money is spent. We used the IMPLANpro input-output model to calculate these "ripple" effects of 2006 program accomplishments on the Tennessee economy. The IMPLAN model calculates total business revenues, personal income, and total employment. For each of these categories, the IMPLAN model provides data on direct, indirect, and induced impacts.

THDA programs' accomplishments in 2006 included in this study are as follows

- ✓ Mortgage production reached over $339 million. As a result, 3,270 low- to moderate-income families and individuals achieved the dream of homeownership in 2006.
- ✓ LIHTC (2006 allocations) in the amount of $18.6 million will create an additional 2,057 affordable housing units.
- ✓ Federal HOME funds including American Dream Downpayment Initiative (ADDI) in the amount of $18.0 million helped 636 households in 2006.
- ✓ Rural Housing Repair program (RHS) awarded $699,000 to assist 236 households.
- ✓ Direct Rental Assistance Programs helped 35,388 households pay reasonable rent by providing $143 million. Of this, tenant-based assistance of $25 million in the form of vouchers aided 5,877 households across Tennessee and project-based assistance of $118 million helped 29,511 families pay an affordable rent. Additionally, 150 disabled adults were assisted with $404,000 of Group Homes for Disabled Adults grant.

Economic Impact of THDA Activities in 2006

Business revenue

- ✓ Total contribution of the THDA-related activities to Tennessee's economy is estimated at $748.3 million (direct, indirect, and induced) in 2006.
  - Of this total, $446.7 million is directly injected into the economy by THDA-related activities.
  - Every $100 of the THDA-related activities generates an additional $67 in business revenues.

Personal income

- ✓ THDA-related activities generated $254.3 million (direct, indirect, and induced) in wages and salaries in 2006.
  - Every $100 of personal income accounts for an additional $63 in personal income in the local economy.

Employment / Job Creation

- ✓ THDA-related activities created 7,171 jobs (direct, indirect, and induced) in 2006.
  - Every 100 jobs created by THDA-related activities, primarily in the construction sector, generated 60 additional jobs throughout the local economy in 2006.

State and local taxes

THDA-related activities accounted for $30.3 million in state and local taxes in 2006.

Due to data limitations some housing-related expenditures, though important, are not incorporated in this study including:

- ✓ Homebuyer education program
- ✓ Benefits of accumulated home equity
- ✓ Interest earnings throughout the life of mortgages generated by THDA homeownership programs
- ✓ Activities of THDA's Multifamily Bond Authority Program.

Additionally, no attempt was made to measure the social impact of affordable housing, either in a general sense or specific to homeownership.

I. Introduction

What role does housing play in the lives of people and communities? Identified as one of the basic human needs, affordable housing has profound impacts on individuals and communities. These impacts range from allowing people to succeed in jobs, education, or even in raising a healthy, happy family, to creating income, jobs, and taxes through construction and rehabilitation activities. A review of the literature on economic and business conditions suggests that the availability of affordable housing in a community is an important factor for business relocation and retention.

As important as the availability of affordable housing is the condition of existing housing in a community. Having a house does not always mean that the shelter needs of a household have been met satisfactorily. There are many households who, though they are not considered "homeless," still have serious housing problems. These families live in substandard housing; or they spend large portions of their income for housing; or they are forced to live in overcrowded houses.

These housing conditions may affect people's life in many different ways[1]. Substandard conditions, such as lack of kitchen or plumbing facilities, may cause chronic health problems. High rent translates into less money for other basic necessities of life. Frequent moves disrupt children's education and might cause serious learning problems. Remedying these housing problems may create a substantial positive impact on both individuals and society.

Established in 1973, Tennessee Housing Development Agency (THDA) addresses the aforementioned housing problems by[2]

- ✓ promoting the production of more affordable new housing units for very low-, low- and moderate-income individuals and families in the state,
- ✓ promoting the preservation and rehabilitation of existing housing units for such persons, and
- ✓ bringing greater stability to the residential construction industry and related industries so as to assure a steady flow of production of new housing units.

This study develops a comprehensive framework to estimate the economic impact of Tennessee Housing Development Agency (THDA) activities in terms of providing affordable, decent, stable housing options to low- and moderate-income households. To this end, this study reviews several THDA programs to determine the scope of each program's activities as well as the monetary flows.

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[1] For a more detailed discussion see "Social Benefits of Homeownership and Stable Housing" (January 2006), *National Association of Realtors, Research Division*, and Galster, Quercia & Cortez, 2000, "Identifying Neighborhood Thresholds: An Empirical Investigation", *Housing Policy Debate*, V.11,No.3, pp.701-32

[2] Stated in "THDA Strategic Plan, 2007-2009" – Tennessee General Assembly, TCA §13-23-101, et seq.

The rest of the study is organized as follows: the second section offers a brief review of THDA activities in the calendar year 2006. The third section provides a conceptual framework, methodological issues, and study assumptions. The fourth section deals with economic impact results. The last section concludes the study.

II. Overview of THDA Programs and Activities for Calendar Year 2006

One of the primary ways THDA assists people is by offering mortgages for first-time homebuyers, at below conventional market interest rates. In addition to helping homebuyers, THDA also administers several other housing programs to help low-income families throughout Tennessee. A brief overview of programs included in this analysis is provided below. Other THDA programs such as BUILD and the Community Investment Tax Credit, which were introduced in 2006, were excluded from this analysis.

The THDA programs.

- ✓ THDA Homeownership Programs: Designed for low- and moderate-income borrowers, THDA mortgage programs offer below market interest rate loans for first time homebuyers. Borrowers have to meet certain income and credit requirements, and acquisition cost limits apply for new and existing homes.

- ✓ Low-Income Housing Tax Credit (LIHTC): THDA administers the Low-Income Housing Tax Credit program in Tennessee. The program is intended to encourage the construction and rehabilitation of rental housing for low-income individuals and families. The LIHTC provides an incentive for developers to create affordable rental housing. The incentive is a credit against federal income tax liability each year for 10 years for owners and investors in low-income rental housing. The amount of tax credit is based on reasonable costs of development, as determined by THDA, and the number of qualified low-income units.

- ✓ HOME: The US Department of Housing and Urban Development provides federal funds to Tennessee and to local participating jurisdictions[3] to carry out multi-year housing strategies through acquisition, rehabilitation, and new construction of housing units and through tenant-based assistance. The purpose of the program is to expand the supply of decent, safe, sanitary and affordable housing for low and very low-income households. THDA's HOME program focuses more on homeowner rehabilitation projects, homeownership activities, and acquisition, rehabilitation and/or new construction of rental housing projects. THDA, on behalf of the State of Tennessee operates the HOME program through local governments and non-profit organizations. Eligible activities under HOME

[3] Local participating jurisdictions (PJs) are those local governments in Tennessee that receive HOME funds directly from the Department of Housing and Urban Development. The Local PJs are Clarksville, Chattanooga, Jackson, Knoxville, Memphis, Nashville-Davidson County, Knox County, Shelby County and the Northeast Tennessee/Virginia Consortium (the cities of Bristol, Kingsport, Johnson City, Bluff City, and Sullivan and Washington counties).

program include rehabilitation, conversion, reconstruction, new construction, and acquisition and rehabilitation.

- ✓ Rural Housing Services (RHS): A joint program with USDA Rural Housing Service to deliver a house repair program for very low-income homeowners residing in rural counties.

- ✓ Section 8 (tenant-based rental assistance programs and project-based contract administration): The Housing Choice Voucher program provides monthly rental assistance for participants who want to rent from a private landlord but can not afford the full monthly rental payment[4]. Additionally, THDA oversees properties with Section 8 Housing Assistance Payment Contracts.

THDA accomplishments in calendar year 2006 by program area.

- ✓ Mortgage production reached over $339 million. As a result, 3,270 low to moderate income families and individuals achieved the dream of homeownership in 2006.

- ✓ LIHTC (2006 allocations) in the amount of $18.627 million will create an additional 2,057 affordable housing units.

- ✓ Federal HOME funds and American Downpayment Dream Initiative (ADDI) grants of $17.996 million to help 636 households in 2006.

- ✓ Rural Housing Repair program (RHS) awarded $699,000 assisting 236 households

- ✓ Direct Rental Assistance Programs helped 35,388 households to pay reasonable rent by providing $143 million. Of this, tenant-based assistance of $25 million in the form of vouchers aided 5,877 households across Tennessee and project-based assistance of $118 million helped 29,511 families pay an affordable rent. Additionally, 150 disabled adults were assisted with $404,000 grant for Group Homes for Disabled Adults.

III. Methodology and Study Assumptions

Concept of economic impact. When THDA helps a low-income borrower buy his/her first house or provides some relief to a cost-burdened renter, this affects the life of that person and overall society in several ways. Societal benefits of affordable housing are well documented in literature. In addition to the benefits reaped by individuals and society,

[4] THDA administers Section 8 Rental Assistance program in 76 out of 95 counties in the State. Remaining counties (Bledsoe, Bradley, Carter, Dickson, Greene, Grundy, Hamilton, Hancock, Hawkins, Johnson, Marion, McMinn, Meigs, Polk, Rhea, Sequatchie, Sullivan, Unicoi, and Washington) have their own Section 8 program.

spending in the process of providing affordable housing generates business revenues, incomes and jobs in the communities.

The Low-Income Housing Tax Credit program, for example, vividly illustrates the broader impacts of affordable housing. One additional low-income unit built with the incentives created through the tax credit will house a low-income family, and this is an important contribution to the well-being of that family, paying less than or equal to 30 percent of area median income for housing. In addition to societal benefits, the money a developer spends to build that additional rental unit will generate incomes and jobs for individuals through rounds of spending. One dollar spent in the local economy will support more than that one dollar creating income for other people in the region. In the process, there will be some leakages: some money will go to savings instead of being spent, government will take some of it as taxes and fees, some of it will go to vendors located outside the local economy, and so on. However, the portion staying in the local economy will continue to circulate and support additional rounds of spending until there is no more.

The sum of all these rounds of spending is represented by an "economic multiplier." For example, a multiplier of 1.5 means that $100 of initial spending will create an additional $50 in the local economy. The size of the multiplier depends on the type of the initial spending, mostly related to the sector of the economy in which it is spent, and the strength of the local economy. For example, the spending in construction sector supports a larger multiplier than initial spending in finance sector. The more self-sufficient is the local economy, the higher the multiplier will be. If many things are not produced locally and the region (i.e. state) depends on other outlying regions, the value of the multiplier will be smaller.

Modeling approach and definitions. The economic impact of THDA activities goes beyond the sectors in which program money is spent. Through the impact multipliers or "ripple" effect, the THDA programs and grants affect all industries in the economy. THDA used the IMPLANpro input-output model to calculate these "ripple" effects on Tennessee's economy. The IMPLAN model calculates total business revenues, personal income, and total employment. For each of these categories, the IMPLAN model provides direct, indirect, and induced impacts. Here is a brief description of each of these concepts:

1. *Business revenue.* Total economic activity generated by the THDA programs and grants spending in the economy.

2. *Personal income.* Income people in the economy receive because of the spending associated with the THDA programs and grants.

3. *Employment.* Number of jobs generated because of the administration of the THDA programs and grants in the economy.

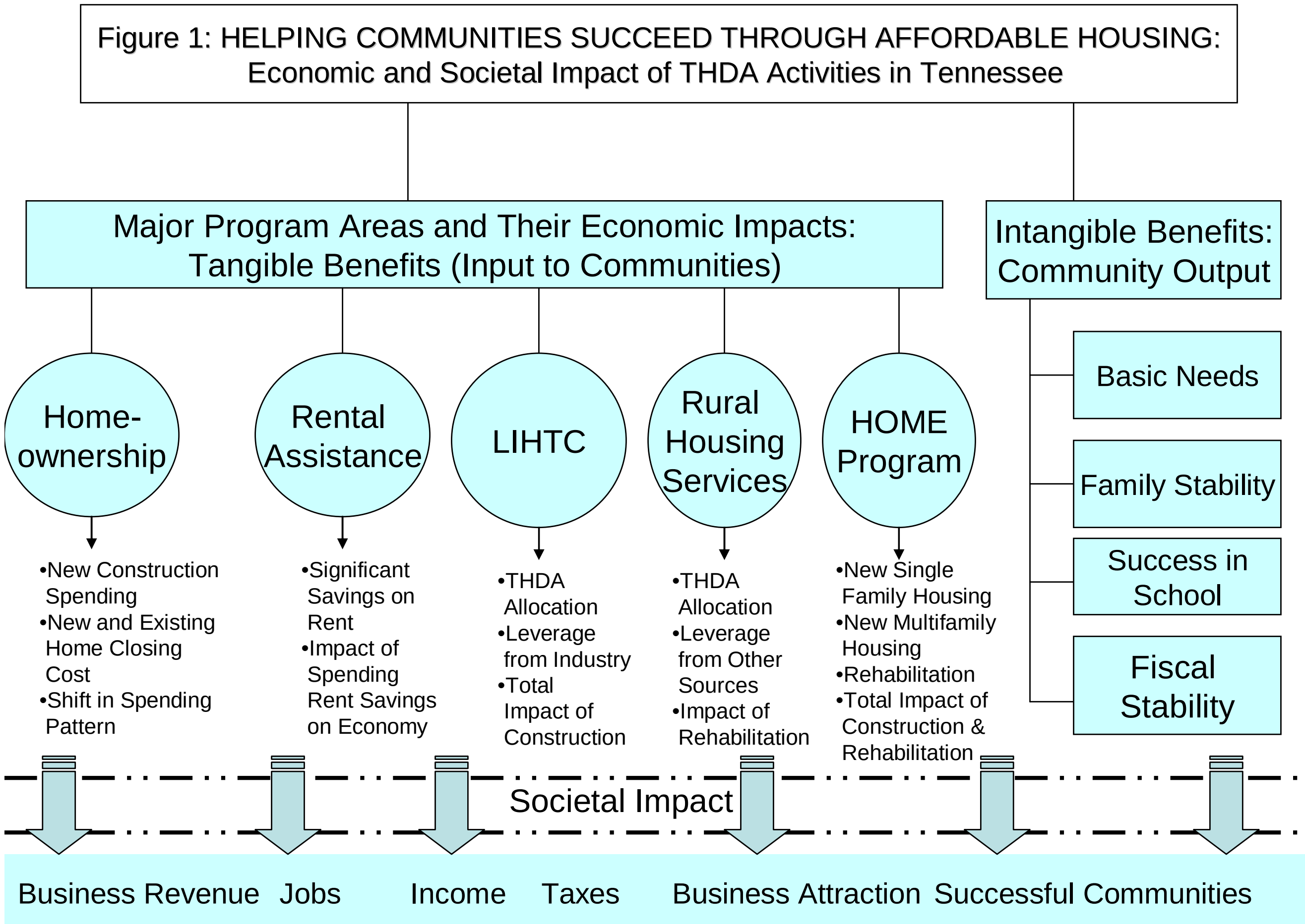
Each of these impact categories is further broken down into three sub groups:

1. *Direct impact.* Dollar amount of direct spending because of the THDA's various affordable housing programs. THDA also reports corresponding direct personal income and employment figures.

2. *Indirect impact.* Economic impact that is generated because of the subsequent rounds of business to business transactions in Tennessee's economy.

3. *Induced impact.* Economic impact that is generated through the employee spending in the economy. A portion of the program spending goes to individuals as wages and salaries. Then, individuals spend these wages and salaries in the economy according to their consumption patterns. Each round of spending creates ripple effects in the economy.

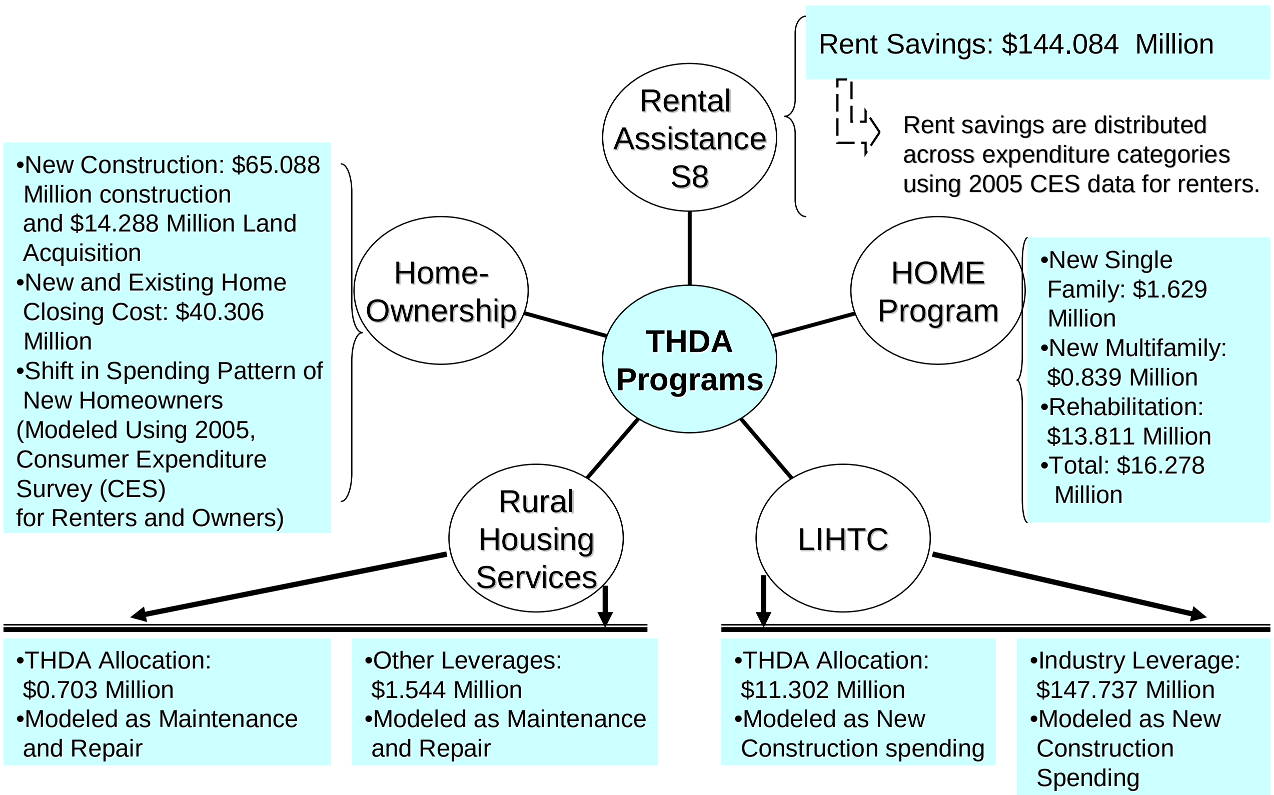
Conceptual framework. As explained throughout this study, the THDA programs and grants impact many aspects of the communities. Figure 1 below provides an overview of several impact areas. According to Figure 1, the THDA programs and grants have tangible economic impacts through several programs labeled as "inputs to communities." In addition, these programs have several benefits to society, which are difficult to measure. These intangible benefits labeled as "community outputs" represent the dynamic impact of affordable housing. The cumulative impacts of the THDA activities mean business revenues, employment, taxes, income, business attraction and retention, and successful communities.



Study assumptions and data. Critical to any economic impact analysis is to assemble and process the required data. This requires extensive cooperation among different units administering programs and grants as well as generating program and grant data. After completing this process, we develop several assumptions to subgroup general data categories into appropriate sectors that are suitable for IMPLAN analysis. Furthermore, modeling such as shifts in consumer expenditure when some households change their status from renters to homeowners requires a multi-stage approach. Figure 2 provides a synopsis of our modeling approach and flows of the THDA program and grant money.

As Figure 2 indicates, some of the THDA programs and grants involve THDA fund allocations as well as leveraged funds from either industry or other grant funds. We briefly lay out assumptions by program area below.

Figure 2: An Overview of THDA Programs and Economic Impact Assumptions



(1). Rural Housing Services. This program provides assistance to low income families for rehabilitation. In 2006, THDA allocated $703,000, which leveraged an additional $1.544 million from other grant funds. A total of $2.247 million is modeled as maintenance and repair spending.

(2). LIHTC program. This program is intended to increase and preserve multifamily (rental) housing stock through creating incentives for developers. We estimated that $159.039 million is spent in 2006 for construction of new multifamily units, of which $11.302 million is from THDA allocation and $147.737 million is leveraged from industry.

(3). Homeownership program. This mortgage program provides affordable housing opportunities for low- to moderate-income families in Tennessee. In 2006, more than $79 million was spent for construction of new homes, of which $14 million was modeled as land acquisition and $65 million for construction spending. A total of $40.306 million of closing costs was associated with more than 3,000 mortgages that included both new and existing home purchases. The closing cost data were further distributed to appropriate sectors for modeling purposes. In addition to construction and closing costs, we attempted to capture the economic impact of shifts in spending pattern of households

when their status changed from renters to homeowners. The estimates of shift in spending pattern involve multiple stages. First, we obtained Consumer Expenditure Survey (2005) data to identify the spending patterns of both renters and homeowners. Table 1 presents the fraction of income spent for each major expenditure category by ownership status.

Table 1: THDA Homeownership Program: Impact of Shift in Spending Pattern from Renter to Home Owner

	Distribution by Type of Ownership		
Major Spending Categories	Homeowner	Renter	% Point Shift (Owner--Renter)
Groceries	7.085%	10.578%	-3.493%
Restaurants/ Beverages	7.100%	9.400%	-2.300%
Property Taxes	4.516%	0.103%	4.413%
Maintenance/ Repairs	3.050%	0.090%	2.960%
Hotels/ Motels	1.279%	0.607%	0.672%
Utilities	5.000%	5.000%	0.000%
Telephone Services	2.353%	3.620%	-1.267%
Personal Services	0.955%	0.868%	0.088%
Other Household Expenses	2.300%	1.900%	0.400%
Laundry and Cleaning Supplies	0.295%	0.402%	-0.107%
Household Textiles	0.324%	0.312%	0.012%
Furniture	1.241%	1.039%	0.202%
Floor Coverings	0.172%	0.047%	0.125%
Major Appliances	0.900%	0.600%	0.300%
Miscellaneous (House)	1.945%	1.483%	0.462%
Apparel	4.294%	6.479%	-2.185%
Transportation/ Vehicle	20.416%	23.003%	-2.586%
Healthcare	5.599%	5.616%	-0.017%
Entertainment	6.186%	5.496%	0.690%
Personal Care Products	1.253%	1.569%	-0.315%
Education	2.700%	3.100%	-0.400%
Miscellaneous (All Other)	2.500%	3.700%	-1.200%
Insurance/ Pension (All Types)	18.500%	14.900%	3.600%

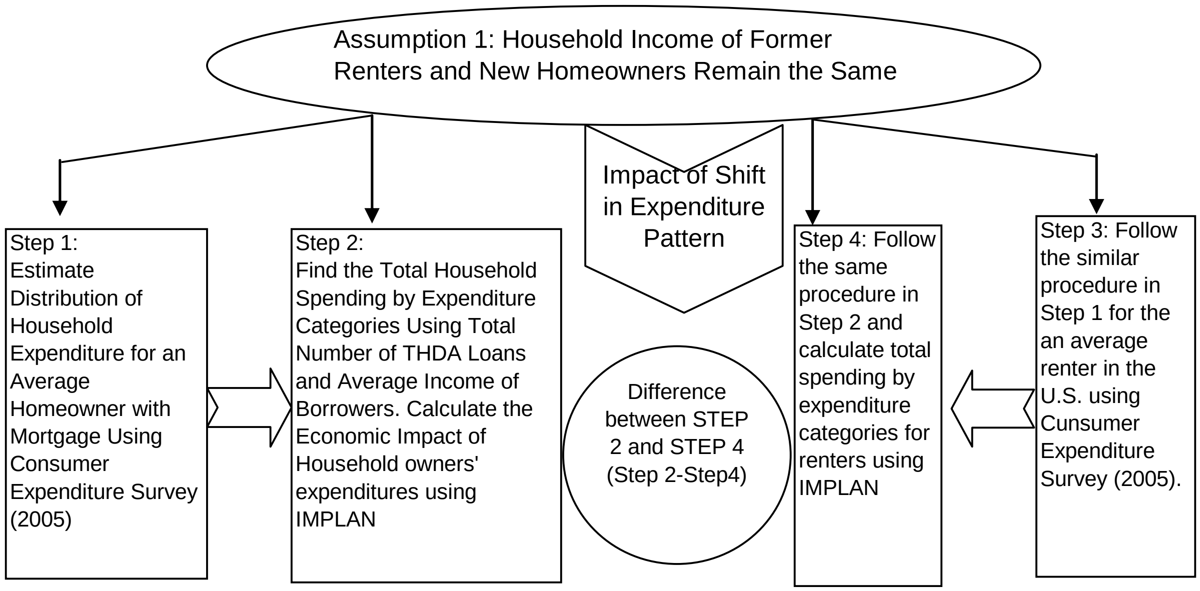
Source: Consumer Expenditure Survey (2005)

Note 1: Only major spending categories are reported in this table.

Note 2: Total may not be equal to 100 percent due to rounding.

Second, distribution of the same household income to expenditure categories by renters and homeowners was calculated separately. Third, we ran the IMPLAN model for each group and obtained their economic impacts. Finally, we subtracted renters' economic impact from homeowners' economic impact to calculate the shift. Figure 3 below summarizes those stages.

Figure 3: Procedure to Estimate Economic Impact of Shifts in Spending Pattern due to Homeownership



(4). HOME program. This program involves new single family and multifamily construction as well as rehabilitation. In 2006, total spending for new residential units was estimated at $2.468 million. An estimated $13.811 million was spent for rehabilitation within the framework of this program.

(5). Direct rental assistance. This program provides direct rental assistance to low income renters and thereby frees up their income (rent saving) to spend on other goods and services such as health care, childcare, food, clothing, and transportation. With the direct rental assistance, being able to pay lower than market rate increases residents' "net disposable income." Therefore, not only are low-income families benefiting from residing in permanent, affordable housing, but also they are contributing to a diverse local economy through their additional spending power. Table 2 below provides assumptions for how this additional spending power is distributed across major expenditure categories. In 2006, rental savings were estimated at more than $144 million.

Table 2: Detailed Distribution of Rent Savings due to Rental Assistance to Detailed Expenditure Categories

Detailed Expenditure Categories	Distribution	Detailed Expenditure Categories	Distribution
Cereals and bakery products	0.019	Household furnishing and equipment	0.045
Meats, poultry, fish, and eggs	0.034	Apparel and services	0.086
Dairy Products	0.015	Gasoline and motor oil	0.078
fruits and vegetables	0.024	Vehicle finance charges	0.010
Other food at home	0.048	Maintenance and repairs	0.025
Food away from home	0.104	Vehicle insurance	0.034
Alcoholic beverages	0.020	Vehicle rental, leases, and licenses	0.015
Owned dwellings	0.005	Public transportation	0.016
Mortgage interest and charges	0.002	Healthcare	0.074
Property taxes	0.001	Entertainment	0.073
Maintenance, repairs, insurance, other expenses	0.001	Personal care products and service	0.021
Other lodging	0.008	Reading	0.004
Utilities, fuels, and public services	0.114	Education	0.037
Household operations	0.022	Tobacco products and smoking supplies	0.021
Housekeeping supplies	0.019	Miscellaneous	0.028

Source: Consumer Expenditure Survey (2005)

IV. Economic Impact Results

As presented in Table 3, the economic impact of the THDA programs and grants is quite significant. For each of the economic impact categories, we present direct, indirect and induced impacts.

Business revenue. In 2006, the THDA-related activities injected into the economy a total of $446,652,000. This spending generated an additional economic impact of $301,639,000 (indirect and induced) through business revenue multipliers. Total contribution of the THDA-related activities to the Tennessee's economy is estimated at $748,291,000.

Personal income. The IMPLAN model also calculates personal income associated with the THDA-related spending. In 2006, individuals received $156,075,000 in wages and salaries through THDA programs. Additional personal income generated through the ripple effect is $98,202,000. Total personal income generated by the THDA-related activities is $254,277,000.

Employment (jobs). The THDA-related activities provided employment opportunities for many individuals. The direct total employment impact is 4,495 jobs, primarily in the construction sector. In addition, 2,676 jobs are created through the ripple effect. Total employment impact is estimated at 7,171 jobs.

State and local taxes. The THDA-related activities also generate sizable tax revenues for state and local governments. The model estimated tax revenues due to the THDA-related activities were $30,314,000.

Table 3: Economic Impact of THDA Programs on the Tennessee Economy in 2006 (Dollar Figures in Millions)

Type	Direct	Indirect	Induced	Total	Multiplier*
Business Revenue (Million $)	$446.652	$121.196	$180.443	$748.291	1.68
Personal Income (Million $)	$156.075	$40.560	$57.642	$254.277	1.63
Employment (Jobs)	4,495	1,066	1,610	7,171	1.60
Estimated State and Local Taxes (Million $)**	n/a	n/a	n/a	$30.314	n/a

*Multipliers are IMPLAN SAM Multipliers and calculated by dividing total impact by the direct impact.
**Estimated state and local taxes is derived from the model.

Impact by major industries. Even though the THDA-related spending takes place primarily in the construction sector, that spending affects all industries through the ripple effect. Table 4 shows the economic impact of the THDA-related spending by major industries. According to Table 4, the largest impact is in the construction sector with $260,527,000 in business revenues, $107,587000 in personal income, and 2,821 jobs. Other major sectors that substantially benefit from the THDA-related spending are manufacturing, retail trade, finance and insurance, real estate, professional services, health and social services, and government. "All others" represent the following major industries: agriculture, mining, utilities, wholesale trade, transportation, information, management of companies, administrative and waste services, educational services, arts, entertainment and recreation, accommodation and food, and other services.

Table 4: Impact of THDA Programs on the Tennessee Economy By Major Sectors in 2006 (in Million Dollars)

Major Sectors	Business Revenue (in 2006 dollars)	Personal Income (in 2006 dollars)	Employment (Jobs)
Construction	$260.527	$107.587	2,821
Manufacturing	$44.226	$8.214	175
Retail Trade	$63.819	$23.681	917
Finance and Insurance	$38.375	$12.731	204
Real Estate	$43.241	$7.509	215
Professional Services	$29.077	$10.260	190
Health and Social Services	$39.444	$21.038	416
Government	$37.849	$8.433	156
All Others	$191.734	$54.824	2,076
TOTAL	$748.290	$254.276	7,171

V. Conclusion

The THDA-related activities have substantial economic impact on the Tennessee's economy. To summarize,

- ✓ For every dollar of business revenue, resulting from THDA Programs, an additional $0.68 of business revenue is created throughout the economy.
- ✓ For every dollar of personal income, related to THDA programs, an additional $0.63 of personal income is generated throughout the economy.
- ✓ For every 100 jobs, related to THDA programs, an additional 60 jobs are created throughout the economy.

The limitations of the study. This study did not take into account several areas due to data limitations. Therefore, this impact assessment of the THDA-related activities is conservative. The following areas were not treated in this study:

1. Homebuyer education: THDA requires homebuyer education for all Great Start and Great Advantage loan applicants and encourages it for all consumers considering homeownership. THDA's purpose not only is to assist people with purchasing homes, but also to help them become long-term, successful homeowners. Education and training aim to prepare consumers — emotionally and financially – for the commitment and investment of buying a home. In some economic impact studies[5] homebuyer education is also included in calculations of impact, because it helps borrowers to buy their homes more quickly than otherwise. Even though we were not able to include the value of homebuyer education in our model as an input, we acknowledge its value as making the borrowers more financially savvy and even later helping them keep their houses (not to default or go through foreclosure).

2. Benefits of home equity that accrue to homebuyers: when people buy their home, home price appreciation and monthly mortgage payments allow them to accumulate home equity. For many low-income homeowners this accumulated home equity represents the highest portion of their net wealth (for some it is actually the only source of wealth). Even though estimating this value is possible, it is highly speculative as it depends on factors such as price appreciation, the length of time the homebuyer keeps the home, interest rates, and down payment amount. Homeowners, as opposed to renters, can use this home equity to spend on other things, such as home improvement, education, and leisure. We acknowledge the presence of home equity building and its value to our low-income borrowers, however, we did not attempt to calculate and include it in our model.

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[5] Collins, J.M., E.S. Belsky and M. Tripathi (1999), " Estimating Economic Impacts of Community Lending," Joint Center for Housing Studies, Harvard University

3. Interest earning through the life of the mortgages generated with THDA homeownership programs: the flow of payments generated is realized over several years and dependent on factors such as interest rates and low terms. We did not include this in our model.

4. Because of data limitations, we did not include activities of Multifamily Bond Authority.

Appendix: Assumptions Related to Cost of Land Acquisition and Time Lag

The cost of land acquisition should be removed from the final price of the housing because it is not part of construction spending and it does not create a multiplier effect like spending on other items. For single-family housing, we used the 2005 home sales price data, which THDA annually compiles from the Comptroller's Office. According to this data, for the homes sold in 2005, the land value was estimated about 18 percent of the sales price. Land value on rental housing is different from single family because of the higher density. In the same amount of land, more rental units can be built than single-family units. Therefore, it comprises the smaller portion of the rental housing prices. A study financed by the Council of Large Public Housing Authorities (Econsult Corporation, 2007)[6] uses 10.4 percent of total development costs as the national estimate of land acquisition. In another study conducted by Enterprise Foundation[7]; land acquisition cost is calculated as about six (6) percent of total development costs. In this study, we used 10 percent of total building cost to represent the land acquisition.

Production period to complete the housing units. There is a lag time between allocation of tax credit and HOME grants and start-up of the projects. This becomes an issue because, for example, for 2006 LIHTC allocations, developers are required to submit their initial applications for the year by late March. Developers get their allocation of Tax Credits after all units in the development are placed in service. Therefore, to determine the impact of 2006 activities, we cannot use 2006 allocations. Most probably, the developments rewarded with tax credits in 2004 and 2005 will comply with the requirements, place the units in service and receive their tax credit allocations in 2006. In terms of our model, the important stage is the time they start the new construction or rehabilitation so that they inject the money into the economy. Using the available data, it is established that developers mostly act on their LIHTC commitments in the second year after they receive their right to obtain tax credit. Based on this prior knowledge and after reviewing the data on the annual tax credit allocations we made the following assumptions:

- ✓ LIHTC allocations of 2004 and 2005 will be spent in calendar year 2006
- ✓ We used 80-20 percent division, which means that of total LIHTC spending in calendar year 2006, 80 percent comes from year 2004 and 20 percent from 2005 THDA tax credit allocations.

In terms of the HOME program, we used 2005 allocations to represent HOME grant spending because of the difficulties of obtaining actual spending amounts in a certain year (i.e. 2006) and comparing the allocations and withdrawing of grant dollars. We acknowledge that grantees may choose to spend their 2005 allocations later than 2006,

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[6] Econsult Corporation (January, 2007), "Assessing the Economic Benefit of Public Housing", Submitted to the Council of Large Public Housing Authorities, available at: http://www.clpha.org/uploads/final_report.pdf
[7] Enterprise Foundation (1999), "Developing Multifamily Housing with New Construction, available at: http://www.practitionerresources.org/cache/documents/36615.pdf

but in the absence of better tracking of actual spending, this will be the way to tackle that issue.