Tennessee Housing Development Agency

Leading Tennessee Home

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Economic Impact of THDA Activities in Calendar Year 2011 on the Tennessee Economy

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EXECUTIVE SUMMARY

Leading Tennessee Home by creating safe, sound, affordable housing opportunities is the mission of Tennessee Housing Development Agency (THDA). A safe, sound affordable home supports family and individual health, economic and employment success, educational achievement, and contributes to the sustainability of the neighborhood and the community.

In addition to benefitting individuals and families, THDA programs create additional jobs, income, and spending in the local economy and add to state and local revenues.

In this study, we developed a comprehensive framework to estimate the economic impact of the THDA activities in providing safe, sound, affordable housing options to households of low- and moderate-income. 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 the "ripple" effect, our affordable housing programs impact all industries in the economy, going far beyond the specific unit or the neighborhood in which THDA program money is spent[1].

Economic Impact of THDA-Related Activities in 2011

Total economic impact described below is the sum of direct THDA spending, indirect business to business transactions in Tennessee's economy and additional employee spending.

Business revenue

- ✓ The total contribution of THDA-related activities to Tennessee's economy was estimated at $728.6 million in 2011.
  - o Of this total, $388 million was directly injected into the economy by THDA-related activities
  - o Every $100 of THDA-related activities generated an additional $88 in the business revenues.

Personal income

- ✓ THDA-related activities generated $257.3 million in wages and salaries in 2011.
  - o Every $100 of personal income produced an additional $85 of wages and salaries in the local economy.

Employment / Job Creation

- ✓ THDA-related activities created 6,540 jobs in 2011.
  - o Every 100 jobs created by THDA-related activities, primarily in the construction sector, generated 72 additional jobs throughout the local economy.

State and local taxes

The THDA-related activities accounted for $40 million in state and local taxes in 2011.

[1] We used the IMPLAN input-output model to calculate these "ripple" effects.

THDA's program accomplishments in 2011 included in this study are as follows:

- Mortgage production reached $220.6 million. As a result, 2,109 households became homeowners.
- The Keep My Tennessee Home (Tennessee's Hardest Hit Fund) program issued $5.3 million in forgivable loans to 752 households who were struggling to stay current with their mortgage due to a reduction or loss of employment.
- Low Income Housing Tax Credits (LIHTC) in the amount of $185.3 million were allocated to create or rehabilitate 1,866 rental units. [2]
- The Multifamily Bond Authority[3] used $14.6 million to create and renovate 282 rental apartments[4].
- The HOME program awarded $15.7 million to local governments and non-profit organizations to provide rehabilitation and homeownership services to 276 households and to develop 55 rental housing units.
- The Section 8 Rental Assistance Programs helped 42,139 households pay reasonable rent by providing $188 million in rent subsidies. Of this, the Tenant-based Housing Choice Voucher Assistance of $33.2 million aided 6,746 households across Tennessee and the Project-based Assistance of $154.8 million helped 35,393 families.
- The Community Investment Tax Credit[5] (CITC) assisted lenders who made $29.7 million in below market loans or contributions to eligible non-profits to assist in creating or preserving 317 units of affordable housing, 629 units of affordable rental housing, and in preventing homelessness by creating or preserving affordable housing units.
- The THDA Housing Trust Fund funded three affordable housing programs. The Housing Modification and Ramps Program provided $210,490 to make 265 homes wheelchair accessible. In partnership with USDA, the Rural Housing Repair program provided an additional $637,585 to assist 148 families. Emergency Repair provided $1.8 million in home repair assistance for 315 elderly households.

[2] For the LIHTC developments, the developers have three years to complete the development and place it in service. Most of the consumption spending takes place in the second year and the remaining small portion is completed in the third year. Therefore, for the 2011 economic impact of LIHTC program spending, 80 percent of 2009 and 20 percent of 2010 total development costs are used.
[3] For the Multifamily Tax-Exempt Bond Authority projects, most of the construction spending takes place in the year after the developers receive the allocations. Therefore, for the 2011 economic impact of the consumption spending in this program 2010 total development cost is used.
[4] Some multi-family developments receive funding through both the LIHTC and the Multi-Family Bond Authority programs. For these developments, units are counted in the totals for both programs.
[5] CITC dollars represent the amount of below market loans made that are eligible for CITC rather than the tax credit amount received.

- The Emergency Shelter Grant (ESG) Program awarded $1.5 million to non-profits serving Tennessee to help area homeless and domestic violence shelters.
- The Foreclosure Prevention Program provided $915,120 to non-profits to assist 1,983 homeowners in preventing foreclosure and mitigating the impact of foreclosure.
- The Homebuyer Education Program provided area agencies $457,074 to counsel 1,939 families in their home purchase.
- Non-profits and local governments used $8.4 million in Neighborhood Stabilization Program funds to purchase foreclosed properties for new construction, renovation and demolition, turning them into 144 homes.
- Non-profits that serve Tennessee provided temporary housing assistance to 1,621 new households who are homeless or at risk of being homeless through the Homelessness Prevention and Rapid Re-housing Program (HPRP).

I. Introduction

Housing is one of the basic human needs. Investments in housing improve and expand the available stock of housing units, and improve the working and living environment for individuals. The provision of affordable housing has profound impacts on the individuals and communities impacted. 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 the construction and the rehabilitation activities. Housing generates employment during its construction period and also during its life for proper maintenance. Investment in private residential construction and private consumption spending on housing services contributes to the Gross Domestic Product (GDP).

The condition of existing housing in a community is as important as the availability of affordable housing. Having a house does not always mean that the shelter need of a household has been met satisfactorily. There are many households who, though they are not considered "homeless," still have serious housing problems. These families may 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 lives in many different ways[6]. Substandard conditions, such as lack of kitchen or plumbing facilities, may cause chronic health problems. High rent translates into less money for the 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 the community.

Established in 1973, Tennessee Housing Development Agency (THDA) addresses the aforementioned housing problems by[7]

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

This study develops a comprehensive framework to estimate the economic impact of THDA activities in terms of providing safe, sound, affordable housing options to households of low and moderate income. To this end, this study reviews THDA programs and grants to determine the scope of each program's activities as well as the monetary flows.

The rest of the study is organized as follows: the second section offers a brief review of the THDA activities in the calendar year 2011. The third section deals with the economic impact results. The fourth section provides a conceptual framework and explains the methodological issues. The last section concludes the study. The assumptions about each program are given in the Appendix.

II. Overview of the THDA Programs and Activities for the Calendar Year 2011

[6] 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

[7] Stated in the THDA enabling legislation TCA §13-23-101, et seq.

One of the primary ways THDA assists people is by offering fixed-rate mortgages for first-time homebuyers. In addition to helping homebuyers, THDA also administers several other housing programs to help Tennessee families who are low- and moderate-income through such programs as the Low Income Housing Tax Credit (LIHTC), Multifamily Tax-Exempt Bond Authority HOME Investment Partnership program, Section 8 Rental Assistance, Community Investment Tax Credit (CITC), the Tennessee Housing Trust Fund (HTF), the Emergency Shelter Grant (ESG), BUILD, the Foreclosure Prevention Program, Homebuyer Education Initiative (HBEI), Neighborhood Stabilization Program (NSP), the Homelessness Prevention and Repaid Re-housing Program (HPRP) and Section 1602 Program. A brief overview of the programs included in this analysis is provided below. Detailed information about each program is available at www.thda.org.

The THDA programs included in this study

- ✓ The THDA Homeownership Programs: Designed for borrowers of low and moderate income, the THDA mortgage programs offer 30-year fixed-rate mortgages and downpayment assistance for first time homebuyers. The borrowers must meet certain income and credit requirements, and the acquisition cost limits apply to the new and the existing homes.

- ✓ The Keep My Tennessee Home: Tennessee is one of 18 states plus the District of Columbia that are receiving Hardest Hit Funds. Tennessee's Hardest Hit Fund Program provides forgivable loans to unemployed or substantially underemployed homeowners who are financially unable to make their mortgage payments and are in danger of losing their homes to foreclosure. The Keep My Tennessee Home program makes homeowners' payments on their mortgage and mortgage related expenses such as property taxes, homeowner insurance, homeowner association dues, and/or past-due mortgage payments that accumulated during a period of unemployment.

- ✓ The 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 the rehabilitation of rental housing for the individuals and families who are low-income. The LIHTC provides an incentive for the developers to create affordable rental housing. The incentive is a credit against the federal income tax liability each year for 10 years for the owners and the investors in the low-income rental housing.

- ✓ The Multi Family Tax-Exempt Bond Authority: THDA makes the Multifamily Tax-Exempt Bond Authority available to the local issuers for the permanent financing of the multifamily housing units in Tennessee. The Multifamily Tax-Exempt Bond Authority is not intended for short-term financing, construction financing, "the bridge" financing, or any other financing which is not permanent financing for the development. It can be used for the construction of new affordable rental housing units, for the conversion of existing properties through adaptive reuse, or for the acquisition and rehabilitation of rental units.

Multifamily bond authority deals may apply for the non-competitive tax credits with in the same calendar year as the allocation for bond authority. Therefore, most of the multifamily bond authority deals are counted in LIHTC units.

- ✓ The HOME Investment Partnerships Program: The U.S. Department of Housing and Urban Development (HUD) provides federal funds to Tennessee and to the local participating jurisdictions[8] to carry out multi-year housing strategies through the acquisition, the rehabilitation, and the new construction of housing units. The purpose of the program is to expand the supply of decent, safe, sanitary and affordable housing for the low and very low-income households. THDA's HOME program focuses more on the homeowner rehabilitation projects, homeownership activities, and the acquisition, rehabilitation and/or new construction of the rental housing projects. THDA, on behalf of the State of Tennessee, operates the HOME program through local governments and non-profit organizations.

- ✓ Section 8 Rental Assistance (the tenant-based Housing Choice Voucher assistance program and the project-based contract administration program): The Housing Choice Voucher program provides monthly rental assistance for the participants who want to rent from a private landlord but cannot afford the full monthly rental payment[9]. Additionally, THDA oversees properties with the Section 8 Housing Assistance Payment Contracts.

- ✓ Community Investment Tax Credit (CITC): Financial institutions may obtain a one-time credit against the sum total of the taxes imposed by the Franchise and Excise Tax Laws when the qualified loans, the qualified investments, the grants or the contributions are extended to the eligible housing entities for engaging in eligible housing activities. The program is administered in cooperation with the Tennessee Department of Revenue. THDA certifies the housing entity and the activity as eligible to receive the tax credits. The eligible activities include those that create or preserve affordable housing for the low-income Tennesseans, that assist the low-income Tennesseans in obtaining safe and affordable housing, that build the capacity of an eligible nonprofit organization to provide housing opportunities for the low-income Tennesseans, and any other low-income housing related activity approved by the THDA Executive Director and the Commissioner of Revenue.

- ✓ The THDA Housing Trust Fund (HTF) addresses the housing needs of the people who are very low income, the elderly who are very low income and the very low income special needs populations of Tennessee. The Housing Trust Fund funds four programs to address the housing needs of these families and individuals:

[8] Local participating jurisdictions (PJs) are those local governments in Tennessee that receive HOME funds directly from HUD. 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).

[9] THDA administers the Housing Choice Voucher program in 75 out of 95 counties in the State. Remaining counties (Bledsoe, Bradley, Carter, Davidson, Dickson, Greene, Grundy, Hamilton, Hancock, Hawkins, Johnson, Knox, Marion, McMinn, Meigs, Polk, Rhea, Sequatchie, Sullivan, Unicoi, and Washington) have their own Section 8 program.

- *The Emergency Repair Program (ERP)* for the Elderly: A program to provide grants (not loans) to the elderly homeowners who are low income, elderly homeowners who are 60 years or older to correct, repair, or replace an essential system and/or a critical structural problem. The purpose of the program is to stabilize the elderly homeowner's residence by making rapid, essential repairs to make the home livable.

- *The Rural Repair Program*: A joint program with the USDA Rural Housing Service to deliver a house repair program for the very low-income homeowners residing in the rural counties.

- *The Housing Modifications and Ramps Program*: A partnership with the United Cerebral Palsy to provide grants to construct ramps for persons with disabilities to allow access to their home.

- *Competitive Grants*: The annual Competitive HTF program supports activities for persons of very low income including the chronically homeless, persons with intellectual disabilities, developmental disabilities, or mental illness, single mothers recovering from substance addiction or physical abuse, veterans with multiple needs and ex-offenders re-entering society. There were no competitive grants awarded in calendar year 2011.

✓ The Emergency Shelter Grant (ESG) Program: THDA administers the federally-HUD funded ESG Program to increase the number and the quality of emergency shelters and transitional housing facilities for homeless individuals and families, to operate these facilities, to provide essential social services, and to help prevent homelessness.

✓ The Foreclosure Prevention Program: This program provides area agencies funds to counsel to the State's homeowners in danger of foreclosure. All Tennesseans can access the foreclosure counseling services available through the program.

✓ Homebuyer Education Initiative: This program provides area agencies with funds to counsel families in their home purchase.

✓ The Neighborhood Stabilization Program (NSP): THDA administers the federally funded NSP on behalf of the U.S. Department of Housing and Urban Development (HUD). The purpose of NSP is to provide emergency assistance to state and local governments to acquire and redevelop foreclosed properties that might otherwise become sources of abandonment and blight within their communities.

✓ The Homelessness Prevention and Rapid Re-housing Program (HPRP): HPRP provides housing stability services in Tennessee communities, primarily households of low and moderate income in rental housing. No money was distributed for HPRP in 2011.

III. Economic Impact Results

Methodology

We used the IMPLAN input-output model to calculate the ripple effects of THDA-related activities on the Tennessee economy. The IMPLAN model calculates total business revenues, personal incomes, and total employment. For each of these categories, the IMPLAN model provides the direct, the indirect, and the induced impacts. The direct expenditures created by THDA programs and grants generate additional economic activity in the form of indirect and induced expenditures. Direct impact is the dollar amount of the initial spending because of the THDA programs and grants. We also report the corresponding direct personal income and employment figures.

Indirect impact is the economic impact that is generated because of the subsequent rounds of business to business transactions in Tennessee's economy. For example, a grantee who receives a grant to repair a critical structural problem for an elderly homeowner buys materials from a supplier who would in turn purchase additional material, labor, etc. from other businesses. This spending will create additional rounds of spending in the local and regional economies.

Induced impact is the economic impact that is generated through employee spending in the economy. A portion of the direct and indirect program spending goes to individuals as wages and salaries. Then, these individuals spend these wages and salaries in the economy depending on their consumption patterns. Each round of spending creates ripple effects in the economy.

We provide the impact of THDA-related activities on business revenue, personal income, employment and state and local taxes. Business revenue is the total economic activity generated by THDA programs and grants spending in the economy. Personal income is the income that people in the economy receive because of the spending associated with THDA programs and grants. Employment is the number of jobs generated by THDA programs and grants spending in the economy. Estimated state and local taxes are derived from the IMPLAN model.

Construction of new homes and rehabilitation of existing homes through THDA-related activities increase employment both in the construction industry and the industries with forward and backward linkages to the construction. For every dollar spent in the economy through related activities, the business revenue and personal income increase by more than one dollar of direct spending because of the indirect and induced effects.

As presented in Table 1, the economic impact of THDA programs and grants was quite substantial. For each of the economic impact categories, we present the direct, the indirect and the induced impacts, in addition to the total impact and the multiplier (when applicable).

Results

In 2011, THDA-related activities injected into the economy a total of $388,087,296 in demand for regionally supplied construction, real estate services, and financial and other services inputs. To provide those sales in the economy, all of the affected firms provided 3,806 employment opportunities making $139,166,304 in wages and salaries. These are direct impacts of 2011 THDA-related activities. Next, all of those directly stimulated firms required increased inputs of $138,211,462 from the local economy, which further stimulated 1,071 jobs and $49,570,900 in labor income. When the workers in the direct and indirect sectors converted their paychecks into household spending, they induced $202,283,005 in industrial output from industries that served households, yielding 1,663 more jobs making $68,523,117 in wages and salaries. Added together, THDA-related activities supported $728.6 million in area industrial output, $257.3 million in labor income and 6,540 jobs.

The THDA-related activities also generated sizable tax revenues for the state and the local governments. The model estimated tax revenues due to THDA-related activities were $40 million.

Total multipliers[10] are also listed in the table. These are calculated by dividing the total impact by the direct effect. In 2011, for every $100 in direct industrial output created through THDA-related activities additional $102 business revenues were generated.

Table 1: The Economic Impact of THDA-Related Activities on Tennessee Economy (in million dollars), 2011

	Direct Impact	Indirect Impact	Induced Impact	Total Impact	Multiplier*
Business Revenue	$388.09	$138.21	$202.28	$728.58	1.88
Personal Income	$139.17	$49.57	$68.52	$257.26	1.85
Employment	3,806	1,071	1,663	6,540	1.72
State and Local Taxes**	NA	NA	NA	$39.9	NA

**Multipliers are calculated by dividing total impact by direct impact*

***State and Local taxes are estimated from the model.*

Impact by the major industries

THDA-related spending influences all industries through the ripple effect. Table 2 shows the economic impact of the THDA-related spending by major industries. These show the total impact for the industries including direct, indirect, and induced impacts.

According to Table 2, the largest impact is in the service sector with $397 million in business revenues, $136 million in personal income, and 3,255 jobs. THDA-related activities generated $134 million in business revenue and approximately 1,000 jobs in the construction sector.

Table 2: Impact of the THDA Programs on the Tennessee Economy by Major Sectors, 2011 (in million dollars)

Sectors	Employment (Jobs)	Personal Income	Business Revenue

[10] Multipliers are explained in page 11 of this report in more detail.

Construction	977	$39.25	$134.25
Manufacturing	75	$4.30	$26.81
Trade	1,965	$63.32	$119.12
Service	3,255	$136.16	$397.09
Government	99	$6.85	$28.87
All Others	168	$7.37	$22.45
TOTAL	**6,540**	**$257.26**	**$728.58**

IV. Methodology

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.[11] In addition to the benefits reaped by individuals and society, spending in the process of providing affordable housing generates business revenues, incomes and jobs in the communities.[12]

The Low-Income Housing Tax Credit program, for example, illustrates the broader impacts of affordable housing. One additional low-income housing unit built with the incentive created through the tax credit will house a low-income family. This is an important contribution to the well-being of that family that will be paying less than or equal to 30 percent of 60 percent or 50 percent of the area median income for housing. This reduces the cost burden of the renters. The money a developer spends to build that additional rental unit will generate incomes and jobs for the individuals through rounds of spending. One dollar spent in the local and regional economies will support more than that one dollar, creating income for the other people in the region. In the process, there will be some leakages: some money will go to savings instead of being spent, some will go to taxes and fees, some of it will go to the 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

[11] For more information about health benefits of affordable housing see: Cohen, R. (2011). "The Impacts of Affordable Housing on Health: A Research Summary," *Center for Housing Policy* and for more information about education benefits of affordable housing see: Brennan, M. (2011). "The Impacts of Affordable Housing on Education: A Research Summary," *Center for Housing Policy*. See, also Newman, S. (2008). "Does Housing Matter for Poor Families? A Critical Summary of Research and Issues Still to be Resolved," Journal of Policy Analysis and Management, vol. 27, no. 4, pp. 895-925.

[12] To learn more about the economic impact of affordable housing, see, for example, Beyond Units: Economic Benefits of Federal Home Loan Bank (FHLB) of Atlanta's Affordable Housing Program (2010). The Hendrickson Company in conjunction with The Shimberg Center for Housing Studies, University of Florida, on behalf of FHLB of Atlanta; The Metro Area Impact of Home Building in Shelby County, TN: Income, Jobs and Taxes Generated. (2010), National Association of Homebuilders; Wood, J. A. (2004), Economic Impact Of Affordable Housing: New Construction, Rehabilitation And Assistance Programs, Retrieved March 2010, from Utah Housing Coalition website: http://www.utahhousing.org/documents/Econ_impact_study05.pdf ; and Assessing the Economic Benefits of Public Housing, Econsult Corporation, Retrieved March 2010, from The Council of Large Public Housing Authorities website: http://www.clpha.org/uploads/final_report_1.pdf

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, initial spending in the construction sector supports a larger multiplier than initial spending in the finance sector. The more self-sufficient the local economy is, the higher the multiplier will be. If many items are not produced locally and the region (i.e. the State) depends on the other outlying regions, the value of the multiplier will be smaller.

V. Conclusion

The THDA-related activities in 2011 had substantial economic impact on Tennessee's economy. To summarize,

- ✓ For every $100 dollar of business revenue, resulting from the THDA Programs, an additional $88 of business revenue was created throughout the economy.
- ✓ For every $100 dollar of personal income, related to the THDA programs, an additional $85 of personal income is generated throughout the economy.
- ✓ For every 100 jobs, related to THDA programs, an additional 72 jobs are created throughout the economy.

Appendix: Assumptions

The THDA programs vary in nature from increasing the affordable housing stock by creating new rental and ownership units or renovating the existing ones to making individuals first time homeowners to helping individuals and families pay an affordable rent. When entering the spending in different THDA programs to our economic impact model we made assumptions appropriate to the nature of the program. The following section explains those assumptions for each program, which there was program spending during calendar year 2011.

Single Family Mortgage Program

- THDA mortgages can be used to purchase a new or an existing home. Modeling the single family mortgage program in IMPLAN depends on whether THDA borrowers purchased a new or an existing home.
- For the new home purchases, we input the construction cost of building those new homes in the model. The cost of land acquisition is removed from the final price of the house because it is not part of the construction spending and it does not create a multiplier effect like spending on the other items. For IMPLAN, the purchase of land for building a new home is an asset exchange. There will not be a net change in the economy. However, we enter the spending for land purchase in IMPLAN as income for property owners even though it is not a direct spending in an industry. To determine the value of land in home prices for single-family homes, we used the home sales price data, which THDA annually compiles from the Comptroller's Office. According to this data, for the homes sold in Tennessee, the land value was estimated at about 18 percent of the sales price.
- Like the purchase of land for new home construction, the purchase of existing homes does not create a multiplier effect either. However, the fees and commissions paid in the home purchase process have to be included in the economic impact. We looked at the mortgages funded through THDA to find out the fees and commission paid by an average THDA borrower as related to the purchase price. Based on this data, we distribute the fees, commissions and expenditures among financial sector, real estate sector and state and local government (some of the fees are paid to the government and also property taxes paid at the closing go to government). This is done for all mortgages whether it is for a new or an existing home purchase.
- Individuals and families who purchased a home with THDA single family mortgage program are new homeowners, but they are not new to the region. They will not bring new spending to the state that was not there before. Therefore, we cannot add their spending as new homeowners to the local economy. However, homeowners' spending patterns are different than renters' spending. To deal with the changing spending pattern in the region, we subtracted the new homeowners' spending when they were renters and added to the sectors they would spend as homeowners. Bureau of Labor Statistics (BLS) surveys individuals to determine their spending habits and those are published regularly as Consumer Expenditure Survey (CES). The aggregate tables provide spending patterns of renter and homeowners (with and without mortgage payments). To determine the change in the spending pattern of THDA borrowers after they became new homeowners, we used these consumer expenditure surveys. We determined the sectors in which

homeowners and renters spend their income, excluding the housing related expenditures from both groups. For the income, we used the average income of the THDA borrowers in all homeownership programs.

Keep My Tennessee Home (Tennessee's Hardest Hit Fund) Program

This program provides forgivable loans to unemployed or underemployed homeowners to help pay their mortgages. We assumed that homeowners spend the money for consumption goods and services otherwise they would use for paying the mortgages. Money is distributed among the sectors based on homeowner spending patterns obtained from the Consumer Expenditure Survey as explained in the section about the single family mortgages. The counseling agencies that work directly with the homeowners receive administrative funds. Those funds are included in the economic impact model separately from the consumption spending of the borrowers.

Low Income Housing Tax Credit (LIHTC) and Multifamily Bond Authority

- LIHTC leverages additional funds to complete the projects. Therefore, to calculate the economic impact of constructing multifamily housing units with LIHTC, we used the total cost of construction rather than the tax credit allocations developers receive.
- There is a lag time between the allocation of the Low Income Housing Tax Credit and the start-up of the housing developments. Therefore, to determine the impact of 2011 activities, we cannot use the 2011 LIHTC allocations.
- In terms of our model, the important stage is when the developer starts the new construction or rehabilitation so that the money is injected 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 the tax credit. Based on this prior knowledge and after reviewing the data on the annual tax credit allocations, we used LIHTC allocations of 2009 and 2010 for the LIHTC spending in calendar year 2011. We used an 80-20 percent division, which means that, of the total LIHTC spending in calendar year 2011, 80 percent comes from the 2009 THDA tax credit allocations and 20 percent from the 2010 THDA tax credit allocations.
- We have detailed cost data such as the land value, the site work, the architectural and engineering fees, and the financing fee expenses for the rental developments built with the LIHTC allocations. We directly inputted that land value to our IMPLAN model as income for the property owners. The rest of the spending related to building multifamily units is entered into the appropriate sectors in IMPLAN.
- Multifamily bond authority deals can apply for LIHTC and their impact is calculated the same as LIHTC deals. For the Multifamily Tax Exempt Bond

> Authority, the developers have one year for the rehabilitation and the acquisition projects to complete the project and place in service, while for the new construction projects, they have two years. Therefore, we used the 2010 allocations for the multifamily tax exempt bond authority developments.

The HOME Program

The HOME program grantees also have multiple years to complete the projects once they received the awarded grants. However, we did not have an accurate way of determining the spending year for the HOME awards. Therefore, we used the current year HOME awards as spending in the year for this program. HOME grants are used for new construction or rehabilitation of ownership or rental units. The spending in those categories is entered to the related sectors of the economy. The HOME program grantees also receive funds to administer the grants. Administrative funds are included in the economic impact model accordingly.

Section 8 Rental Assistance

Both the tenant-based housing choice vouchers and project-based rental assistance help renters pay affordable rent. The rent saving is treated as an increase in disposable income. We assumed that renters spend the money for the consumption of goods and services that they would otherwise use for rent. Money is distributed among the sectors based on renter spending patterns obtained from the Consumer Expenditure Survey as explained in the section about the single family mortgages.

Community Investment Tax Credit (CITC)

The investment amount for each project is used as input for the economic impact model. The activities include new construction and rehabilitation of rental and ownership units and the acquisition of buildings for rehabilitation. The spending for acquisition is treated the same way as explained in LIHTC. New construction and rehabilitation spending are entered to the appropriate sectors of the economy in the model.

Housing Trust Fund

Housing Trust Fund grants require matching funds from the grantees. Those matching funds can come from different sources. The assumption is made that without THDA involvement, those funds would not be available to complete those projects. Therefore, for any grant that requires matching funds to complete the project, total cost of project is used as the input for IMPLAN instead of the amount of grant received from Housing Trust Fund. The Emergency Repair Program, the Home Modifications and Ramps Program, and Rural Repair Program grants are spent in the same year they are awarded, while the competitive grant recipients have multiple years to spend the awarded grants. Even though no competitive grants were awarded in calendar year 2011, we used the amount of money expended during the year for the grants awarded in previous years as input for economic impact model.

The Emergency Shelter Grant (ESG) Program

The HUD funds given to THDA for this program are entered into the appropriate sectors in economic impact model.

The Foreclosure Prevention Program

Money distributed to the counseling agencies is entered to the appropriate sectors in economic impact model. The counseling agencies also receive administrative funds. This amount is also entered as a different category in the economic impact model.

Homebuyer Education Initiative

The money paid to area agencies by THDA on behalf of homebuyers who received homebuyer education and then THDA loan is entered to the appropriate sectors in economic impact model. THDA also spends money for training those educators and provides textbooks used in trainings. This spending is also entered to the model accordingly.

Neighborhood Stabilization Program (NSP)

The assistance distributed to state and local governments to acquire and redevelop foreclosed properties is entered to the appropriate sectors in the economic impact model such as new construction, maintenance, administrative expenses, and acquisition of existing buildings (we enter the spending for existing building purchases in IMPLAN as income for property owners even though it is not a direct spending in an industry. Please see the explanation for this assumption found in the single family mortgage program).

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