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Economic Impact of THDA Activities in Calendar Year 2015 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 state and local economies and add to state and local revenues.

In this study, we developed a comprehensive framework to estimate the economic impact of 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 2015

The 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 $802 million in 2015.
  - Of this total, $457 million was directly injected into the economy by THDA-related activities.
  - Every $100 of THDA-related activities generated an additional $75 in business revenues.

Personal Income

- ✓ THDA-related activities generated $237 million in wages and salaries in 2015.
  - Every $100 of personal income produced an additional $84 of wages and salaries in the local economy.

Employment / Job Creation

- ✓ THDA-related activities created 5,027 jobs in 2015.
  - Every 100 jobs created by THDA-related activities, primarily in the construction sector, generated 94 additional jobs throughout the local economy.

State and Local Taxes

The THDA-related activities accounted for $28 million in state and local taxes in 2015. THDA's program accomplishments in 2015 included in this study are as follows:

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

- Single Family Loan Program production reached $279 million. As a result, 2,275 households became homeowners.
- In addition, 2,174 second loans in the amount of $11 million were funded in 2015 for the Great Choice Program borrowers who needed assistance with downpayment and closing costs.
- The Medical Hardship Program[2] provided $967,717 in forgivable loans to assist 33 eligible Tennessee homeowners suffering from a long-term medical disability hardship with mortgage payments.
- Low Income Housing Tax Credits (LIHTC) in the amount of $222.7 million were allocated to create or rehabilitate 4,860 rental units.[3]
- The Multifamily Bond Authority[4] used $118.4 million to create and renovate 2,366 rental apartments[5].
- The Section 8 Rental Assistance programs helped 40,604 households with $194.4 million for paying rent and utilities.
- The Community Investment Tax Credit[6] (CITC) assisted lenders who made $84.9 million in below market loans or contributions to eligible non-profits to assist in creating or preserving 325 units of affordable owner housing and 1,647 units of affordable rental housing.
- The Housing Trust Fund supports several affordable housing programs. The Competitive Grants awarded non-profits, local communities and regional organizations $3.8 million to develop affordable rental housing across Tennessee, serving 280 households. The Set-Aside for Habitat for Humanity provided $491,694 to local Habitat affiliates to help 29 low-income home buyers. The Housing Modification and Ramps program provided $103,074 to make 79 homes accessible for persons with disabilities. In partnership with U.S. Department of Agriculture (USDA), the THDA/USDA Rural Housing Repair Program provided $421,494 to assist 82 elderly and disabled households. The Emergency Repair for the Elderly Program provided $2 million in home repair assistance for 284 eligible elderly or disabled households.

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[2] Attorneys General National Mortgage Servicer Settlement, Keep My Tennessee Home Long-Term Medical Disability Hardship Program provides forgivable loans to eligible Tennessee homeowners suffering from a long-term medical disability hardship. The first funds were distributed in 2012.

[3] For the LIHTC developments, the developers have three years to complete the development and place it in service. Most of the construction spending takes place in the second year and the remaining small portion is completed in the third year. Therefore, for the 2015 economic impact of LIHTC program spending, 80 percent of 2013 and 20 percent of 2014 total development costs are used.

[4] 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, 2014 total development cost is used for the 2015 economic impact of the consumption spending in this program.

[5] 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.

[6] CITC dollars represent the amount of below market loans made that are eligible for CITC rather than the tax credit amount received.

- The Emergency Solutions Grant (ESG) Program awarded $4.1 million to non-profits serving Tennessee to help area homeless and domestic violence shelters.
- The Foreclosure Prevention Program provided $563,850 to non-profits to assist 1,082 homeowners in preventing foreclosure and mitigating the impact of foreclosure.
- The Homebuyer Education Program provided area agencies $536,500 to counsel 2,196 families in their home purchase.
- With $513,657, the Weatherization Assistance Program helped an estimated 111 low-income families reduce their energy bills by making their homes more energy efficient.
- The Low Income Home Energy Assistance Program (LIHEAP) awarded $55.4 million to non-profits serving Tennessee to assist 97,823 low-income families with paying heating and cooling expenses.

I. Overview of the THDA Programs and Activities for the Calendar Year 2015

One of the primary ways THDA assists Tennesseans is by offering fixed-rate loans for low- and moderate-income homebuyers[7]. In addition to helping homebuyers, THDA also administers several other housing programs to help Tennessee families who are low- and moderate-income through various forms of housing and housing related assistance. 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 single family loan programs offer 30-year fixed-rate loans and downpayment assistance for mostly first-time homebuyers. In targeted areas, these loans are also available to homebuyers, without regard to first-time homebuyer status. The borrowers must meet certain income and credit requirements, and acquisition cost limits apply to both new and the existing homes.

- ✓ The Keep My Tennessee Home Program: Two funding streams were used for the Keep My Tennessee Home program: the U.S. Department of Treasury's Hardest Hit Fund and a portion of the Tennessee Attorney General's National Mortgage Servicer Settlement funds. The program provides forgivable loans to households who are in danger of losing their homes to foreclosure or struggling to stay current with their mortgage due to a reduction or loss of employment, divorce, or death of a spouse, long term medical disability, are military personnel or veterans who have suffered a significant reduction of their income and/or are delinquent on their mortgage, and being an active duty service personnel who receiving permanent change of station orders. The Keep My Tennessee Home Program makes payments on behalf of homeowners for 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 LIHTC program in Tennessee. The program is intended to encourage the construction and the rehabilitation of rental housing for individuals and families who are low-income. The LIHTC allocates a federal tax credit 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.

[7] THDA homeownership programs generally serve first-time homebuyers (those who have not owned their principal residence within the last three years), but serve all eligible homebuyers who are buying in federally targeted areas and who are veterans.

- ✓ The Multi Family Tax-Exempt Bond Authority: THDA makes the Multifamily Tax-Exempt Bond Authority available to local issuers for permanent financing of 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 applicants may apply for non-competitive tax credits within the same calendar year as the allocation for bond authority. Therefore, most of the multifamily bond authority deals are also counted in LIHTC unit counts.

- ✓ 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 participants who want to rent from a private landlord but cannot afford the full monthly rental payment. Additionally, THDA is the contract administrator for the U.S. Department of Housing and Urban Development (HUD) and oversees rental properties with 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 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 Tennesseans with low-income, that assist Tennesseans with low-income in obtaining safe and affordable housing, that build the capacity of an eligible nonprofit organization to provide housing opportunities for Tennesseans with low-income, and any other low-income housing related activity approved by the THDA Executive Director and the Commissioner of Revenue.

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

    - *The Emergency Repair Program (ERP)* for the Elderly: A program to provide <u>grants</u> (not loans) to elderly homeowners who are low-income to 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 United Cerebral Palsy to provide grants to construct ramps for persons with disabilities to allow access to their home.

- *Competitive Grants*: A program that 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.

- *The Rebuild and Recovery Program:* It provides funds to cities and counties to repair homes hit by a weather-related disaster that are not eligible to access Federal Emergency Management Agency (FEMA) or Tennessee Emergency Management Agency (TEMA) funding.

- *Habitat Tennessee:* funds are allocated to Habitat for Humanity of Tennessee to assist Habitat affiliates across the State develop units for homeownership serving households at or below 60 percent of area median income.

✓ The Emergency Solutions Grant (ESG) Program: THDA administers the federally-funded Emergency Solutions Grant (ESG) Program on behalf of the State of Tennessee to help improve the quality of emergency shelters for the homeless; to help meet the costs of operating and maintaining emergency shelters; to provide essential services so that homeless individuals have access to the assistance they need to improve their situation; to provide street outreach services to the homeless; and to provide emergency intervention assistance and rapid re-housing services to prevent homelessness and to obtain permanent housing.

✓ The Foreclosure Prevention Counseling Program: This program provides area agencies funds to counsel homeowners who are 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 Weatherization Assistance Program (WAP): WAP assists low-income households in reducing their fuel costs while contributing to national energy conservation through increased energy efficiency and consumer education. Weatherization measures provided will reduce heat loss and energy costs by improving the thermal efficiency of dwelling units occupied by low-income households. Households that include young children, elderly or disabled members are given priority for service.

- ✓ Low-Income Home Energy Assistance Program (LIHEAP): LIHEAP is a federal program that assists households with income below 150 percent of the federal poverty standards, particularly those who pay a high proportion of household income for home energy bills, meet their immediate home energy needs. The funds are awarded to a network of 19 community service agencies serving all 95 counties in Tennessee, based on the availability of funding. The program is administered and funded at the federal level by the U. S. Department of Health and Human Services.

II. Economic Impact Results

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

The following table represents the direct, indirect, induced and total impact of THDA-related activities on the Tennessee economy in 2015. The impacts are provided for the employment, labor income and output (business revenue). Total multipliers[8] are also listed in the table. These are calculated by dividing the total impact by the direct effect. In 2015, for every $100 in direct industrial output created through THDA-related activities an additional $74 business revenues were generated.

Table 1: The Economic Impact of THDA-Related Activities on Tennessee Economy, 2015 (Dollar figures in millions)

	Direct	Indirect	Induced	Total	Multiplier*
Business Revenue	$457	$195	$150	$802	1.75
Personal Income	$129	$60	$48	$237	1.84
Employment	2,593	1,339	1,095	5,027	1.94
State and Local Taxes**	NA	NA	NA	$28	NA

**Multipliers are calculated by dividing total impact by direct impact*
***State and Local taxes are estimated from the model.*

In 2015, THDA-related activities injected into the economy a total of $457,308,968 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 2,592 employment opportunities making $128,876,032 in wages and salaries. These are direct impacts of 2015 THDA-related activities.

Next, all of those directly stimulated firms required increased inputs of $194,902,142 from the local economy, which further stimulated 1,339 jobs and $59,542,463 in labor income.

When the workers in the direct and indirect sectors converted their paychecks into household spending, they induced $150,277,989 in industrial output from industries that served these households, yielding 1,095 more jobs making $48,162,440 in wages and salaries. Added together, THDA-related activities supported $802 million in area industrial output, $237 million in labor income and 5,027 jobs.

The THDA-related activities also generated sizable tax revenues for state and local governments. The model estimated tax revenues due to THDA-related activities were $28 million.

[8] Multipliers are explained in the methodology section of this report in more detail.

2015 Economic Impact Compared to the Previous Years
Every year, economic impact results are driven by the volume and scope of the THDA's housing-related activities that change over time. The changes in the volume and scope of the administered activities during the year change the resulting additional economic activity and jobs created.

In 2015, for the first time, we calculated the economic impact of THDA-related activities at county, Congressional District and Metropolitan Statistical Area (MSA) level, in addition to the annual statewide analysis. All THDA activities were separated by county, Congressional District and MSA, and these activities were used as inputs for the county, Congressional District and MSA models that were created at IMPLAN. The results are the estimated impact of THDA activities in those counties, Congressional Districts and MSAs. The economic impact results by county, Congressional District and MSA are given in the Appendix.

In 2015, THDA-related activities created the highest economic impact in Shelby County in terms of additional jobs, business revenue and personal income, followed by Davidson, Knox and Williamson Counties. The lowest economic impact in terms of additional jobs and personal income was in Moore County where THDA-related activities only injected a total of approximately $51,000 through Housing Trust Fund, Section 8 Rental Assistance Program and LIHEAP. Other than the direct employment impact, THDA-related activities did not created any indirect or induced employment impact in Moore County. THDA-related activities in 2015 created the least business revenue in Union County.

In Shelby County, nearly $63 million was injected directly to the local economy through THDA-related investment that resulted in an estimated $103 million total business revenue. For every $100 dollar of business revenue, resulting from the THDA Programs, an additional $64 of business revenue was created throughout the local economy.

Employment multiplier ranged from the lowest 1.00 in Moore County to 2.18 in Williamson County. Humphreys and Stewart Counties had the highest personal income and business revenue multipliers in the state. In Stewart County, the high multipliers were mainly the result of the fact that the majority of THDA investment in the county during 2015 went to an industry (electric power transmission and distribution) with a relatively high multiplier value, while in other counties with more THDA activity, such as Davidson County, investment was distributed among several different industries with varying multiplier values.

In the Nashville MSA, THDA-related activities created nearly 1,600 jobs and generated more than $85 million in wages and salaries. Every $100 of THDA-related activities generated an additional $74 in business revenues in the MSA county economies.

III. Methodology

When THDA helps a low- or moderate-income borrower buy a home or provides some relief to a cost-burdened renter, this affects the life of that person and overall society in several ways.[9] 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.[10]

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 family of low income. This is an important contribution to the well-being of that family who will be paying less for housing. This reduces the cost burden to renters and frees up funds for other necessities or discretionary items. The money a developer spends to build that additional rental unit will generate incomes and jobs for Tennesseans through rounds of spending. One dollar spent in the local and regional economies will support more than that one dollar, creating income for other people in the region. In the process, there will be some leakage. That is, some money will go to savings instead of being spent, some will go to taxes and fees, some 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." In economic impact models, multipliers measure the secondary effects of initial spending on local economies. Initial new spending in a local economy creates many rounds of re-spending within the region's economy and multipliers capture those rounds of spending.

During the construction of a new house or rehabilitation of an existing one, for example, the local economy benefits directly from the money spent on the production factors such as materials and labor. The builder/developer purchases cement, lumber, windows, doors and other construction related material from local suppliers. Indirect impact occurs when the suppliers spend money on additional materials and hire new workers to complete the orders from the builders/developers. Finally, the employees in construction companies and in the industries related to the construction sector spend a portion of their wages at the local grocery store or shopping mall, which demonstrates

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[9] 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.

[10] 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

induced effects. Taken together, the indirect and induced impacts of housing construction on the local economy are often called “ripple” or “multiplier” effects.

Multipliers are estimated by dividing the total impact (the sum of direct, indirect and induced impacts) by the initial direct spending in the economy. The income multiplier, for example, represents a change in total income (employee compensation and proprietary income) for every dollar change in income in any given sector. The employment multiplier represents the total change in employment resulting from the change in employment in any given sector. An income multiplier of 1.90, for example means that for every $1 of personal income generates an additional $0.90 of wages and salaries in the local economy.

The size of multipliers depends on the propensity of businesses and households to purchase goods and services from within the region versus from outside sources. Imports[11] are leakages from the local economy as income is sent outside rather than recirculating within the region's economy. The region will have a larger multiplier if it has large and diversified economies producing a variety of goods and services because households and business can find most of the goods and services they need locally. The size of the region also impacts the size of the multiplier. In a large geographic region, transportation costs are high enough to prevent imports so businesses and consumers will spend more locally. A region that serves as a central hub for the surrounding regions will also have higher multipliers than more isolated counties.

The size of multiplier also depends on the nature of the economic sectors under consideration. Those are the factors such as whether the available industries in the region use labor intensive or capital intensive techniques in the production of industry output and each sector’s propensity to buy goods and services from within the region. Rehabilitation/remodeling activities, for example, are more labor intensive than new construction and relies more on locally available labor force than capital, which is mostly imported from neighboring regions. Therefore rehabilitation activities will have larger induced impacts.

Another factor that will impact the size of the multiplier is whether the sector specific multipliers are reported or an average multiplier is reported. When a single multiplier is reported for a region for all the spending in different sectors, it represents an average value across many sectors. It is possible that a small county in which a large portion of initial spending is made on an industry with a high multiplier can have a larger aggregate spending multiplier than another larger county in which the additional initial spending is disbursed across different sectors with varying multiplier values. In this case, the small county with a relatively low industrial base might have a larger multiplier than the large county. For example, in 2015, Low-Income Home Energy Assistance Program (LIHEAP) was the major program THDA used to assist Stewart County residents. [12] The money spent for paying the energy bills of these families goes to electric power transmission and distribution sector, which has a very high business revenue multiplier

[11] Import, as used here, does not necessarily mean purchasing goods and services from another country. For the purpose of economic impact modelling, any purchase from outside the “region” defined in the IMPLAN Model is considered as import.

[12] Stewart County also received Low Income Housing Tax Credit (LIHTC) allocation in 2015. However, as it is explained in the following “Assumptions” section, because of the time lag between the LIHTC allocation and start of the construction, the impact of this allocation was not present in 2015 economic impact calculation.

(2.20 in Stewart County). When the total economic impact of THDA activities in the county is calculated, the business revenue multiplier is higher than other counties with a relatively larger and more diversified industry base in which THDA administered several different programs.

IV. Conclusion

The THDA-related activities in 2015 had substantial economic impact on Tennessee's economy. To summarize,

- ✓ For every $100 dollar of business revenue, resulting from the THDA Programs, an additional $75 of business revenue was created throughout the economy.
- ✓ For every $100 dollar of personal income, related to the THDA programs, an additional $84 of personal income is generated throughout the economy.
- ✓ For every 100 jobs, related to THDA programs, an additional 94 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 units, to helping individuals become first time homeowners, to helping households 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, where there was program spending during calendar year 2015. [13]

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. 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.[14] 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 these 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 through the THDA homeownership loan program are almost exclusively 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, to conservatively estimate the impact of the program, 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

[13] For more information about description of THDA Programs administered during 2015, please see 2015 THDA Program Summary, pages 4-7 at https://s3.amazonaws.com/thda.org/Documents/Research-Planning/2015-Program-Summary.pdf.

[14] It might lead to the construction of new homes in subsequent rounds if those people who sold their homes to THDA borrowers purchase a new home, but we did not make any assumption to quantify this.

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 Program (Tennessee's Hardest Hit Fund and Attorney General Medical Disability Hardship Program)
This program provides forgivable loans to homeowners to help pay their mortgages. We assumed that homeowners spend money for consumption goods and services that they would otherwise use for paying their mortgages. The Keep My Tennessee Home program pays arrears if the borrower has any, and makes the monthly payments on behalf of the homeowner for up to a total of $40,000. The money paid for arrears cannot be considered as money homeowners otherwise would spend for consumption. However, in the absence of a good measure of the actual amount of funds disbursed for arrears versus funds used to make monthly mortgage payments, we assumed all funds used in the year were new injections to the economy.

Low Income Housing Tax Credit (LIHTC) and Multifamily Bond Authority
In the LIHTC program, developers leverage additional funds to complete the projects. We assume that in the absence of the tax credit allocation, the property would not be built. 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 2015 activities, we cannot use the 2015 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 2013 and 2014 for the LIHTC spending in calendar year 2014. We used an 80-20 percent division, which means that, of the total LIHTC spending in calendar year 2015, 80 percent comes from the 2013 THDA tax credit allocations and 20 percent from the 2014 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. The rest of the spending related to building multifamily units is distributed into the appropriate sectors in IMPLAN.

Multifamily bond authority deals can apply for LIHTC and their impact is calculated the same as LIHTC deals. We assume, similar to the LIHTC developments, that without the multifamily bonds these properties would not be built. 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 2014 allocations for the multifamily tax exempt bond authority developments.

Section 8 Rental Assistance
Both the tenant-based housing choice vouchers and project-based rental assistance help renters pay affordable rent. The rent savings 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 paying rent. Money is distributed among the sectors based on household spending patterns in the IMPLAN model.

The economic impact of the rental assistance programs presented here is a conservative figure, including only an estimate of the household spending impacts related to the rental assistance benefits. To determine the impact the rental subsidy has on household spending, the annual difference between the income available after paying gross rent without a rental subsidy and the income available after paying gross rent with a rental subsidy was estimated for THDA's rental assistance populations. The gross rent that would be paid by THDA rental assistance participants if they did not receive a rental subsidy was estimated by using the Bureau of Labor Statistics U.S. 2014 Consumer Expenditure Survey for shelter and select utilities for the lowest 20th percentile. This percent was applied to the average gross income of rental assistance participants in 2015.

The gross rent with rental subsidy was calculated by using the average statewide total tenant payment after subsidy for the two programs. The estimated difference was then multiplied by the number of participants in the programs during 2015. This method of calculating rent saving through the rental assistance program is similar to the 2011 City of Norfolk HCV Economic Impact study.[15]

Community Investment Tax Credit (CITC)
The investment amount for each project is used as input for the economic impact model. This is assuming that the loans would not be made in the absence of CITC. The CITC projects could take multiple years to complete. However, in our modeling, we did not address this possibility. The activities for CITC projects include new construction and rehabilitation of rental and ownership units and the acquisition of buildings for rehabilitation. New construction and rehabilitation spending are distributed into 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, the total cost of the 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. We used the amount of money allocated in the year for the competitive grants as

[15] City of Norfolk Economic Impacts of the NRHA Housing Choice Voucher Program. (2011), Retrieved on March 2015 from Norfolk Redevelopment and Housing Authority website: http://www.nrha.us/sites/default/files/Study-2-HCV.pdf

input for economic impact model. We included the awarded amount for the Rebuild and Recovery Program as input in the model even if they were not all spent during the year.

The Emergency Solutions Grant (ESG) Program
The HUD funds given to THDA for this program are distributed into the appropriate sectors in the economic impact model.

The Foreclosure Prevention Program
Money allocated to the counseling agencies is distributed to the appropriate sectors in economic impact model. The counseling agencies also receive administrative funds. This amount is also included 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 a THDA loan is distributed into the appropriate sectors in the economic impact model. THDA also spends money for training those educators and provides textbooks used in trainings. This spending is also distributed into the model accordingly.

The Weatherization Assistance Program (WAP)
The WAP provides grants for repairs, renovations and retrofits based on a home's energy consumption, technical assistance, and information tools to states for their energy programs. The total allocated amount was included in the model as rectification spending in the construction sector.

The Low Income Home Energy Assistance Program (LIHEAP)
The LIHEAP provides assistance to the families by paying their energy bill. The LIHEAP Weatherization Program provides weatherization and energy-related minor home repairs. Therefore, the total assistance provided was distributed into the sectors related to utility provision.

APPENDIX

ECONOMIC IMPACT RESULTS

	Business Revenue				
	Direct	Indirect	Induced	Total Impact	Multiplier
Anderson	$8,511,356	$2,403,066	$1,213,979	$12,128,401	1.42
Bedford	$6,180,243	$1,721,101	$958,964	$8,860,308	1.43
Benton	$420,050	$154,038	$41,086	$615,174	1.46
Bledsoe	$224,615	$21,911	$11,749	$258,275	1.15
Blount	$3,140,645	$567,497	$375,558	$4,083,700	1.30
Bradley	$18,235,683	$4,628,411	$3,479,753	$26,343,847	1.44
Campbell	$406,963	$103,729	$70,550	$581,242	1.43
Cannon	$80,463	$6,956	$4,798	$92,217	1.15
Carroll	$1,349,566	$351,998	$137,874	$1,839,438	1.36
Carter	$2,380,044	$421,414	$167,954	$2,969,412	1.25
Cheatham	$758,726	$162,124	$69,847	$990,697	1.31
Chester	$302,272	$34,220	$27,402	$363,895	1.20
Claiborne	$1,188,380	$305,419	$131,453	$1,625,252	1.37
Clay	$127,920	$14,324	$7,007	$149,251	1.17
Cocke	$497,318	$151,154	$46,301	$694,773	1.40
Coffee	$1,429,824	$378,996	$234,997	$2,043,817	1.43
Crockett	$103,320	$17,362	$13,935	$134,617	1.30
Cumberland	$9,631,203	$2,896,361	$1,355,596	$13,883,160	1.44
Davidson	$53,847,686	$18,164,018	$12,401,231	$84,412,935	1.57
Decatur	$595,952	$124,651	$59,991	$780,594	1.31
DeKalb	$277,220	$39,335	$33,352	$349,907	1.26
Dickson	$277,220	$39,335	$33,352	$349,907	1.26
Dyer	$748,273	$180,641	$147,899	$1,076,814	1.44
Fayette	$754,758	$137,578	$66,068	$958,404	1.27
Fentress	$370,813	$40,205	$25,682	$436,700	1.18

	Business Revenue				
	Direct	Indirect	Induced	Total Impact	Multiplier
Franklin	$471,937	$69,655	$47,178	$588,769	1.25
Gibson	$4,784,028	$1,178,835	$589,467	$6,552,329	1.37
Giles	$8,511,356	$2,403,066	$1,213,979	$12,128,401	1.42
Grainger	$564,891	$117,162	$24,763	$706,817	1.25
Greene	$617,376	$138,172	$94,538	$850,086	1.38
Grundy	$262,017	$27,459	$11,741	$301,217	1.15
Hamblen	$6,173,456	$1,627,839	$907,688	$8,708,982	1.41
Hamilton	$7,628,271	$3,545,031	$1,796,853	$12,970,155	1.70
Hancock	$714,984	$102,791	$19,218	$836,993	1.17
Hardeman	$876,946	$239,975	$92,974	$1,209,895	1.38
Hardin	$301,592	$91,611	$32,115	$425,317	1.41
Hawkins	$691,343	$348,569	$75,705	$1,115,618	1.61
Haywood	$449,970	$187,480	$49,431	$686,880	1.53
Henderson	$393,095	$172,467	$51,619	$617,180	1.57
Henry	$6,330,228	$1,986,812	$1,054,227	$9,371,267	1.48
Hickman	$357,760	$35,961	$19,942	$413,663	1.16
Houston	$182,344	$20,018	$7,095	$209,456	1.15
Humphreys	$225,592	$170,474	$24,423	$420,489	1.86
Jackson	$125,656	$8,572	$5,190	$139,418	1.11
Jefferson	$1,602,037	$245,929	$136,837	$1,984,803	1.24
Johnson	$8,511,356	$2,403,066	$1,213,979	$12,128,401	1.42
Knox	$33,281,028	$12,284,860	$11,841,666	$57,407,554	1.72
Lake	$173,821	$37,429	$11,713	$222,963	1.28
Lauderdale	$527,451	$78,702	$40,223	$646,376	1.23
Lawrence	$4,579,205	$1,484,538	$545,394	$6,609,137	1.44

	Business Revenue				
	Direct	Indirect	Induced	Total Impact	Multiplier
Lewis	$2,954,292	$787,676	$214,691	$3,956,659	1.34
Lincoln	$370,620	$118,468	$43,478	$532,565	1.44
Loudon	$5,623,879	$1,543,977	$712,159	$7,880,016	1.40
Macon	$1,914,825	$520,325	$217,940	$2,653,090	1.39
Madison	$3,157,142	$982,817	$601,705	$4,741,664	1.50
Marion	$355,351	$89,886	$31,173	$476,410	1.34
Marshall	$2,723,038	$564,259	$290,866	$3,578,163	1.31
Maury	$5,851,331	$1,220,786	$1,019,967	$8,092,084	1.38
McMinn	$1,061,403	$342,377	$163,709	$1,567,489	1.48
McNairy	$980,505	$161,039	$88,888	$1,230,433	1.25
Meigs	$166,357	$11,882	$5,527	$183,766	1.10
Monroe	$552,026	$65,242	$41,746	$659,014	1.19
Montgomery	$5,037,512	$1,136,674	$831,696	$7,005,882	1.39
Moore	$50,467	$1,598	$1,173	$53,238	1.05
Morgan	$341,959	$28,137	$16,779	$386,875	1.13
Obion	$4,480,291	$1,322,652	$788,732	$6,591,676	1.47
Overton	$357,526	$54,945	$25,254	$437,725	1.22
Perry	$1,044,773	$173,235	$84,931	$1,302,939	1.25
Pickett	$61,347	$3,744	$2,750	$67,841	1.11
Polk	$126,840	$45,681	$6,756	$179,277	1.41
Putnam	$14,960,687	$4,750,281	$2,473,522	$22,184,491	1.48
Rhea	$2,377,860	$741,259	$210,124	$3,329,243	1.40
Roane	$1,406,827	$526,672	$157,238	$2,090,736	1.49
Robertson	$10,969,889	$2,346,295	$1,359,661	$14,675,845	1.34
Rutherford	$18,541,389	$3,406,914	$3,597,942	$25,546,245	1.38

	Business Revenue				
	Direct	Indirect	Induced	Total Impact	Multiplier
Scott	$411,862	$63,338	$46,666	$521,866	1.27
Sequatchie	$186,578	$23,562	$12,299	$222,439	1.19
Sevier	$1,179,670	$302,463	$192,662	$1,674,795	1.42
Shelby	$62,587,361	$21,106,864	$19,011,461	$102,705,686	1.64
Smith	$168,430	$17,870	$12,913	$199,213	1.18
Stewart	$155,492	$128,306	$15,645	$299,443	1.93
Sullivan	$9,412,089	$1,895,521	$1,414,112	$12,721,722	1.35
Sumner	$5,831,243	$1,518,692	$1,217,399	$8,567,333	1.47
Tipton	$1,097,541	$156,091	$97,319	$1,350,951	1.23
Trousdale	$313,857	$27,979	$18,089	$359,925	1.15
Unicoi	$200,230	$58,650	$16,776	$275,656	1.38
Union	$40,931	$6,154	$4,010	$51,095	1.25
Van Buren	$53,035	$4,449	$2,563	$60,047	1.13
Warren	$784,160	$126,752	$103,183	$1,014,094	1.29
Washington	$7,183,201	$2,148,693	$1,697,801	$11,029,695	1.54
Wayne	$256,137	$10,305	$11,223	$277,665	1.08
Weakley	$775,974	$285,219	$97,150	$1,158,343	1.49
White	$321,126	$60,990	$23,036	$405,151	1.26
Williamson	$29,874,206	$8,935,534	$8,548,555	$47,358,295	1.59
Wilson	$3,701,298	$904,394	$630,570	$5,236,262	1.41
State	$457,308,968	$194,902,142	$150,277,989	$802,489,099	1.75
Congressional District 1	$32,612,675	$9,174,336	$6,642,636	$48,429,647	1.48
Congressional District 2	$47,054,501	$16,075,744	$15,916,994	$79,047,239	1.68

	Business Revenue				
	Direct	**Indirect**	**Induced**	**Total Impact**	**Multiplier**
Congressional District 3	$39,549,679	$15,871,920	$9,140,696	$64,562,294	1.63
Congressional District 4	$58,113,813	$14,689,529	$11,028,138	$83,831,479	1.44
Congressional District 5	$62,467,129	$21,640,656	$15,265,560	$99,373,344	1.59
Congressional District 6	$53,560,184	$15,491,571	$10,086,429	$79,138,183	1.48
Congressional District 7	$58,179,097	$19,278,699	$13,393,690	$90,851,486	1.56
Congressional District 8	$89,827,155	$34,011,323	$26,961,264	$150,799,742	1.68
Congressional District 9	$62,587,361	$21,106,864	$19,011,461	$102,705,686	1.64
Chattanooga, MSA	$8,203,335	$4,102,875	$1,970,263	$14,276,473	1.74
Clarksville, MSA	$5,037,512	$1,136,674	$831,696	$7,005,882	1.39
Cleveland, MSA	$17,955,245	$4,650,254	$3,521,655	$26,127,154	1.46
Jackson, MSA	$3,702,326	$1,072,416	$715,282	$5,490,025	1.48
Johnson City, MSA	$9,893,701	$2,451,076	$2,004,308	$14,349,085	1.45
Kingsport-Bristol, MSA	$9,916,486	$2,060,442	$1,535,056	$13,511,984	1.36
Knoxville, MSA	$55,490,747	$21,225,950	$17,803,715	$94,520,412	1.70
Memphis, MSA	$62,498,472	$23,345,066	$19,076,000	$104,919,538	1.68
Morristown, MSA	$7,887,915	$2,064,318	$1,190,803	$11,143,036	1.41
Nashville, MSA	$151,383,905	$57,837,689	$54,690,629	$263,912,223	1.74

	Personal Income				
	Direct	Indirect	Induced	Total Impact	Multiplier
Anderson	$2,557,129	$731,465	$338,491	$3,627,085	1.42
Bedford	$1,500,518	$441,767	$231,207	$2,173,492	1.45
Benton	$71,405	$27,024	$9,810	$108,239	1.52
Bledsoe	$36,004	$3,853	$2,092	$41,949	1.17
Blount	$582,952	$142,323	$109,983	$835,258	1.43
Bradley	$4,734,170	$1,419,775	$1,086,512	$7,240,457	1.53
Campbell	$120,653	$22,634	$16,932	$160,219	1.33
Cannon	$12,617	$1,615	$1,056	$15,287	1.21
Carroll	$198,263	$76,752	$33,783	$308,799	1.56
Carter	$300,570	$81,565	$39,750	$421,884	1.40
Cheatham	$144,933	$38,002	$17,966	$200,902	1.39
Chester	$65,111	$7,148	$6,914	$79,173	1.22
Claiborne	$200,599	$79,422	$33,547	$313,569	1.56
Clay	$13,354	$2,800	$1,429	$17,583	1.32
Cocke	$79,773	$23,447	$10,637	$113,856	1.43
Coffee	$381,181	$97,650	$64,755	$543,585	1.43
Crockett	$33,539	$4,761	$4,182	$42,482	1.27
Cumberland	$1,721,960	$772,027	$331,881	$2,825,868	1.64
Davidson	$17,254,726	$6,757,522	$4,643,711	$28,655,959	1.66
Decatur	$129,198	$31,752	$15,513	$176,463	1.37
DeKalb	$61,825	$9,623	$8,145	$79,592	1.29
Dickson	$61,825	$9,623	$8,145	$79,592	1.29
Dyer	$243,247	$45,339	$41,574	$330,159	1.36
Fayette	$141,671	$28,754	$15,868	$186,294	1.31
Fentress	$40,741	$8,701	$6,408	$55,850	1.37
Franklin	$82,580	$13,624	$11,683	$107,886	1.31

	Personal Income				
	Direct	Indirect	Induced	Total Impact	Multiplier
Gibson	$937,020	$298,313	$154,980	$1,390,313	1.48
Giles	$2,557,129	$731,465	$338,491	$3,627,085	1.42
Grainger	$65,822	$21,044	$5,333	$92,198	1.40
Greene	$160,566	$33,358	$25,240	$219,164	1.36
Grundy	$27,278	$5,637	$2,561	$35,477	1.30
Hamblen	$1,315,643	$457,928	$249,061	$2,022,633	1.54
Hamilton	$1,990,358	$949,623	$578,561	$3,518,542	1.77
Hancock	$38,337	$22,177	$3,172	$63,687	1.66
Hardeman	$216,658	$42,546	$22,952	$282,157	1.30
Hardin	$56,169	$16,760	$8,395	$81,324	1.45
Hawkins	$127,326	$69,989	$17,089	$214,404	1.68
Haywood	$80,786	$39,367	$11,438	$131,592	1.63
Henderson	$90,103	$20,733	$12,781	$123,616	1.37
Henry	$1,669,674	$582,624	$296,457	$2,548,755	1.53
Hickman	$47,325	$6,513	$3,930	$57,768	1.22
Houston	$16,122	$3,871	$1,478	$21,471	1.33
Humphreys	$35,259	$29,627	$5,051	$69,937	1.98
Jackson	$14,487	$1,706	$1,329	$17,522	1.21
Jefferson	$217,959	$56,898	$31,896	$306,752	1.41
Johnson	$2,557,129	$731,465	$338,491	$3,627,085	1.42
Knox	$11,394,372	$4,224,274	$3,736,611	$19,355,258	1.70
Lake	$42,156	$4,182	$2,236	$48,574	1.15
Lauderdale	$90,498	$15,021	$8,626	$114,145	1.26
Lawrence	$716,483	$370,359	$133,363	$1,220,205	1.70
Lewis	$364,806	$180,176	$46,216	$591,199	1.62
Lincoln	$87,827	$22,342	$10,673	$120,842	1.38

	Personal Income				
	Direct	Indirect	Induced	Total Impact	Multiplier
Loudon	$1,182,272	$426,520	$175,032	$1,783,824	1.51
Macon	$307,196	$140,677	$49,947	$497,820	1.62
Madison	$884,637	$270,569	$182,260	$1,337,466	1.51
Marion	$51,076	$16,435	$7,052	$74,563	1.46
Marshall	$615,218	$155,265	$66,495	$836,978	1.36
Maury	$1,409,524	$351,987	$299,164	$2,060,675	1.46
McMinn	$225,755	$64,771	$40,475	$331,001	1.47
McNairy	$168,517	$40,137	$21,038	$229,692	1.36
Meigs	$17,957	$2,197	$1,053	$21,207	1.18
Monroe	$76,320	$15,197	$9,298	$100,815	1.32
Montgomery	$1,193,481	$295,840	$222,217	$1,711,538	1.43
Moore	$5,227	$446	$279	$5,951	1.14
Morgan	$45,986	$5,617	$4,326	$55,930	1.22
Obion	$1,074,840	$398,729	$203,736	$1,677,305	1.56
Overton	$46,473	$10,740	$5,626	$62,839	1.35
Perry	$183,718	$43,899	$19,773	$247,390	1.35
Pickett	$7,933	$736	$636	$9,305	1.17
Polk	$15,583	$6,992	$1,420	$23,995	1.54
Putnam	$3,876,632	$1,494,556	$750,366	$6,121,554	1.58
Rhea	$405,844	$168,857	$50,674	$625,375	1.54
Roane	$296,019	$121,054	$41,062	$458,135	1.55
Robertson	$2,562,928	$664,404	$353,499	$3,580,831	1.40
Rutherford	$4,448,241	$1,017,229	$1,076,954	$6,542,423	1.47
Scott	$126,968	$13,068	$11,175	$151,211	1.19
Sequatchie	$30,948	$5,025	$2,631	$38,604	1.25
Sevier	$249,899	$80,709	$51,281	$381,889	1.53

	Personal Income				
	Direct	Indirect	Induced	Total Impact	Multiplier
Shelby	$22,452,877	$7,748,912	$6,308,171	$36,509,960	1.63
Smith	$26,638	$4,755	$3,101	$34,494	1.29
Stewart	$27,776	$23,721	$3,442	$54,939	1.98
Sullivan	$2,138,486	$558,925	$397,246	$3,094,657	1.45
Sumner	$1,830,288	$435,643	$333,622	$2,599,553	1.42
Tipton	$229,777	$31,877	$20,544	$282,199	1.23
Trousdale	$38,676	$8,120	$5,101	$51,897	1.34
Unicoi	$51,215	$9,528	$3,700	$64,443	1.26
Union	$13,873	$1,302	$849	$16,024	1.16
Van Buren	$10,402	$1,100	$499	$12,002	1.15
Warren	$169,389	$30,679	$27,186	$227,254	1.34
Washington	$2,023,129	$660,191	$488,125	$3,171,446	1.57
Wayne	$32,416	$2,270	$2,853	$37,539	1.16
Weakley	$120,131	$64,039	$25,258	$209,428	1.74
White	$41,811	$9,746	$5,598	$57,155	1.37
Williamson	$9,792,253	$3,594,010	$3,311,755	$16,698,018	1.71
Wilson	$873,471	$253,624	$170,627	$1,297,722	1.49
State	$128,876,032	$59,542,463	$48,162,440	$236,580,935	1.84
Congressional District 1	$7,253,843	$2,508,525	$1,827,180	$11,589,547	1.60
Congressional District 2	$14,823,004	$5,318,653	$4,881,858	$25,023,515	1.69
Congressional District 3	$10,531,793	$4,670,701	$2,764,384	$17,966,877	1.71
Congressional District 4	$14,015,279	$4,133,299	$3,143,378	$21,291,956	1.52
Congressional District 5	$19,951,956	$7,947,120	$5,657,043	$33,556,119	1.68
Congressional District 6	$13,033,900	$4,531,363	$2,732,579	$20,297,843	1.56

	Personal Income				
	Direct	Indirect	Induced	Total Impact	Multiplier
Congressional District 7	$15,554,162	$5,997,733	$4,314,348	$25,866,244	1.66
Congressional District 8	$28,730,554	$11,138,829	$8,581,922	$48,451,305	1.69
Congressional District 9	$22,452,877	$7,748,912	$6,308,171	$36,509,960	1.63
Chattanooga, MSA	$2,062,300	$1,052,291	$626,509	$3,741,100	1.81
Clarksville, MSA	$1,193,481	$295,840	$222,217	$1,711,538	1.43
Cleveland, MSA	$4,635,982	$1,413,984	$1,091,194	$7,141,160	1.54
Jackson, MSA	$1,014,665	$288,685	$215,779	$1,519,129	1.50
Johnson City, MSA	$2,344,642	$707,662	$556,216	$3,608,520	1.54
Kingsport-Bristol, MSA	$2,169,429	$581,171	$420,306	$3,170,906	1.46
Knoxville, MSA	$17,346,213	$6,738,449	$5,452,496	$29,537,158	1.70
Memphis, MSA	$20,702,920	$8,021,433	$6,221,139	$34,945,492	1.69
Morristown, MSA	$1,469,947	$535,310	$310,447	$2,315,705	1.58
Nashville, MSA	$46,073,800	$20,347,770	$19,266,158	$85,687,727	1.86

	Employment				
	Direct	Indirect	Induced	Total Impact	Multiplier
Anderson	63	19	10	92	1.44
Bedford	32	17	7	57	1.77
Benton	3	1	0	4	1.46
Bledsoe	1	0	0	1	1.20
Blount	11	4	3	18	1.58
Bradley	87	49	26	163	1.86
Campbell	3	1	1	4	1.34
Cannon	0	0	0	1	1.25
Carroll	6	3	1	10	1.72
Carter	8	3	1	13	1.52
Cheatham	4	2	1	6	1.62
Chester	2	0	0	3	1.29
Claiborne	9	3	1	13	1.48
Clay	0	0	0	1	1.50
Cocke	2	1	0	3	1.43
Coffee	8	3	2	13	1.59
Crockett	1	0	0	1	1.43
Cumberland	50	32	11	92	1.86
Davidson	255	136	84	476	1.86
Decatur	3	2	1	5	1.59
DeKalb	1	0	0	2	1.38
Dickson	1	0	0	2	1.38
Dyer	8	2	1	11	1.36
Fayette	4	1	1	6	1.43
Fentress	1	0	0	2	1.50
Franklin	2	0	0	3	1.38

	Employment				
	Direct	Indirect	Induced	Total Impact	Multiplier
Gibson	21	12	5	38	1.79
Giles	63	19	10	92	1.44
Grainger	2	1	0	3	1.44
Greene	5	1	1	7	1.37
Grundy	1	0	0	1	1.38
Hamblen	33	17	7	57	1.73
Hamilton	41	17	14	71	1.74
Hancock	4	1	0	6	1.41
Hardeman	4	1	1	6	1.56
Hardin	2	0	0	2	1.41
Hawkins	3	1	1	5	1.58
Haywood	2	1	0	3	1.48
Henderson	2	0	0	3	1.36
Henry	41	19	9	68	1.67
Hickman	1	0	0	2	1.38
Houston	1	0	0	1	1.30
Humphreys	1	0	0	2	1.60
Jackson	0	0	0	0	1.33
Jefferson	6	3	1	10	1.62
Johnson	63	19	10	92	1.44
Knox	266	97	90	452	1.70
Lake	1	0	0	2	1.31
Lauderdale	3	1	0	3	1.28
Lawrence	22	16	4	42	1.94
Lewis	18	9	2	29	1.62
Lincoln	2	1	0	3	1.43

	Employment				
	Direct	**Indirect**	**Induced**	**Total Impact**	**Multiplier**
Loudon	29	13	5	47	1.62
Macon	12	6	2	19	1.61
Madison	24	7	5	35	1.49
Marion	1	1	0	2	1.64
Marshall	15	6	3	24	1.57
Maury	36	12	9	56	1.56
McMinn	5	2	1	8	1.56
McNairy	5	2	1	7	1.42
Meigs	1	0	0	1	1.33
Monroe	2	1	0	3	1.42
Montgomery	29	9	7	44	1.52
Moore	0	0	0	0	1.00
Morgan	1	0	0	1	1.33
Obion	25	13	7	45	1.81
Overton	1	0	0	2	1.42
Perry	7	2	1	10	1.40
Pickett	0	0	0	0	1.50
Polk	1	0	0	1	1.40
Putnam	88	51	21	160	1.82
Rhea	10	6	2	18	1.78
Roane	6	2	1	9	1.57
Robertson	54	24	10	88	1.63
Rutherford	97	29	27	153	1.59
Scott	5	1	0	5	1.17
Sequatchie	1	0	0	1	1.27
Sevier	6	3	2	10	1.77

	Employment				
	Direct	**Indirect**	**Induced**	**Total Impact**	**Multiplier**
Shelby	395	161	140	696	1.76
Smith	1	0	0	1	1.33
Stewart	0	0	0	1	2.00
Sullivan	66	17	11	94	1.43
Sumner	36	10	9	55	1.54
Tipton	7	1	1	9	1.28
Trousdale	1	0	0	1	1.40
Unicoi	2	0	0	2	1.25
Union	1	0	0	1	1.20
Van Buren	0	0	0	0	1.33
Warren	6	1	1	7	1.31
Washington	57	21	14	92	1.61
Wayne	1	0	0	1	1.17
Weakley	3	2	1	6	1.88
White	1	0	0	2	1.45
Williamson	116	80	58	253	2.18
Wilson	19	9	5	33	1.74
State	2,593	1,339	1,095	5,027	1.94
Congressional District 1	214	81	53	348	1.63
Congressional District 2	341	130	120	591	1.73
Congressional District 3	212	105	68	385	1.81
Congressional District 4	320	133	85	538	1.68
Congressional District 5	306	165	105	577	1.88
Congressional District 6	300	146	79	524	1.75

	Employment				
	Direct	**Indirect**	**Induced**	**Total Impact**	**Multiplier**
Congressional District 7	292	158	98	549	1.88
Congressional District 8	569	248	203	1,020	1.79
Congressional District 9	395	161	140	696	1.76
Chattanooga, MSA	43	19	15	76	1.77
Clarksville, MSA	29	9	7	44	1.52
Cleveland, MSA	90	49	27	165	1.85
Jackson, MSA	27	7	6	40	1.50
Johnson City, MSA	69	25	16	110	1.59
Kingsport-Bristol, MSA	65	18	12	95	1.45
Knoxville, MSA	401	156	133	690	1.72
Memphis, MSA	396	170	141	706	1.78
Morristown, MSA	39	20	9	68	1.77
Nashville, MSA	759	447	379	1,586	2.09

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