Tennessee Housing Development Agency
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Economic Impact of THDA Activities in Calendar Year 2009 on the Tennessee Economy

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EXECUTIVE SUMMARY

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

Identified as one of the basic human needs, housing has a profound impact, both social and economic, on the individuals and the communities. Safe, sound, affordable housing is essential to a healthy home, educational achievement, successful employment, and the stability and safety of the neighborhood. Both the housing rehabilitation and the construction of the new homes generate jobs and income in the community and provide additional tax revenue.

Economic Impact of the THDA Activities in 2009

Business revenue

- ✓ The total contribution of the THDA-related activities to Tennessee's economy was estimated at $836 million* in 2009
    - Of this total, $486 million was directly injected into the economy by the THDA-related activities
    - Every $100 of the THDA-related activities generated an additional $72 in the business revenues

Personal income

- ✓ The THDA-related activities generated $293 million* in wages and salaries in 2009
    - Every $100 of personal income produced an additional $65 in personal income in the local economy

Employment / job creation

- ✓ The THDA-related activities created 7,550 jobs* in 2009
    - Every 100 jobs created by the THDA-related activities, primarily in the construction sector, generated 62 additional jobs throughout the local economy

State and local taxes

The THDA-related activities accounted for $26.4 million in the state and the local taxes in 2009.

**Direct, indirect and induced*

THDA programs' accomplishments in 2009 included in this study are as follows[1]

- ✓ The mortgage production reached $253 million. As a result, 2,411 low- to moderate-income families and individuals achieved the dream of homeownership.
- ✓ The Low Income Housing Tax Credits (LIHTC) 2009 allocations in the amount of $21.59 million will create an additional 3,445 rental units**.[2]
- ✓ The Multifamily Tax-Exempt Bond Authority 2009 allocations in the amount of $41.97 million will create and renovate 1,054 rental apartments.[3]
- ✓ HOME awarded $17.46 million to the local governments and the not-for-profit organizations to provide rehabilitation and homeownership services to 291 households and to develop 41 rental housing. The American Dream Downpayment Initiative (ADDI) grants provided $60,000 in downpayment assistance to 12 families.
- ✓ The Section 8 Rental Assistance Programs helped 36,367 households pay reasonable rent by providing $176.85 million in rent subsidies. Of this, the tenant-based assistance of $34.41 million in the form of vouchers aided 6,121 households across Tennessee and the project-based assistance of $142.06 million helped 30,280 families.[4]
- ✓ Lenders received Community Investment Tax Credit (CITC) for over $1.3 million in below market loans made to the eligible non-profits to help approximately 1,000 households in homeownership, home repair and rental housing.
- ✓ The THDA Housing Trust Fund funded three affordable housing programs. RAMPS provided $81,073 to make 117 homes wheelchair accessible. The Rural Housing Repair supplemented the USDA's rural repair program, providing $562,729 additional repair dollars for 145 families. $1.51 million of the Emergency Repair Program (ERP) helped 282 elderly households.
- ✓ The Emergency Shelter Grant Program awarded $1.62 million to the non-profits serving Tennessee counties to help the homeless and the domestic violence shelters.

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 the THDA program money is spent. We used the IMPLANpro input-output model to calculate these "ripple" effects.

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[1] Due to data limitations some housing-related expenditures, though important, are not incorporated in this study: the Homebuyer Education program, the Foreclosure Prevention Program, the Neighborhood Stabilization Program (NSP), the Tax Credit Assistance Program (TCAP), the Section 1602 Program, the Homelessness Prevention and Rapid Re-housing Program (HPRP), the benefits of accumulated home equity, and interest earnings throughout the life of the mortgages generated by the THDA homeownership programs. Additionally, no attempt was made to measure the social impact.

** Some multi-family developments receive funding through both the LIHTC and the Multi-Family Bond programs. For these developments, units are counted in the totals for both programs.

[2] For the LIHTC developments, the developers have three years to complete the development and place 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 2009 economic impact of the LIHTC program spending, 80 percent of 2007 and 20 percent of 2008 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 2009 economic impact of the consumption spending in this program 2008 total development cost is used.

[4] The awarded applicants have three years to spend the HOME funds. Therefore for the 2009 economic impact of the consumption spending in this program 2008 total development cost is used.

I. Introduction

What role does housing play in the lives of people and communities? Identified as one of the basic human needs, affordable housing has profound impacts on the individuals and the communities. These impacts range from allowing people to succeed in jobs, education, or even in raising a healthy, happy family, to creating income, jobs, and taxes through the construction and the rehabilitation activities.

The condition of the 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 the overcrowded houses.

These housing conditions may affect people's life in many different ways[5]. 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 society.

Established in 1973, Tennessee Housing Development Agency (THDA) addresses the aforementioned housing problems by[6]

- ✓ 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 Tennessee Housing Development Agency (THDA) activities in terms of providing safe, sound, affordable housing options to low- and moderate-income households. To this end, this study reviews the THDA programs to determine the scope of each program's activities as well as the monetary flows.

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[5] 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

[6] Stated in "THDA Strategic Plan, 2010-2012" – Tennessee General Assembly, TCA §13-23-101, et seq.

The rest of the study is organized as follows: the second section offers a brief review of the THDA activities in the calendar year 2009. The third section deals with the economic impact results. The fourth section provides a conceptual framework, the methodological issues, and the study assumptions. The last section concludes the study.

II. Overview of the THDA Programs and Activities for the Calendar Year 2009

One of the primary ways THDA assists people is by offering fixed-rate mortgages for the first-time homebuyers. In addition to helping homebuyers, THDA also administers several other housing programs to help low-income families throughout Tennessee such 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) and the Emergency Shelter Grant (ESG). 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 the ow- and moderate-income borrowers, the THDA mortgage programs offer fixed-rate mortgages and the downpayment assistance for the first time homebuyers. The borrowers have to meet certain income and credit requirements, and the acquisition cost limits apply for the new and the existing homes.

- ✓ 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 low-income individuals and the families. 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 the short-term financing, the construction financing, "the bridge" financing, or any other financing which is not the permanent financing for the development, and it can be used for the construction of the new affordable rental housing units, for the conversion of the existing properties through adaptive reuse, or for the acquisition and the rehabilitation of the rental units.

- ✓ HOME Investment Partnerships Program: The US Department of Housing and Urban Development (HUD) provides federal funds to Tennessee and to the local participating jurisdictions[7] to carry out multi-year housing strategies through the acquisition, the rehabilitation, and the new construction of the 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. The 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 rental 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[8]. Additionally, THDA oversees properties with the Section 8 Housing Assistance Payment Contracts.

- ✓ Community Investment Tax Credit (CITC): Financial institutions may obtain a onetime 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 the eligible low income 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 addresses the housing needs of the very low-income, the very low income elderly and the very low income special needs populations of Tennessee. In the calendar year 2009, the Housing Trust Fund funded three programs to address the housing needs of these families and individuals:

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[7] 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).

[8] THDA administers the Section 8 Rental Assistance 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 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 (RHS)*: 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 RAMPS Program*: A partnership with the United Cerebral Palsy to provide grants to construct ramps for the persons with disabilities to allow access to their home.

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

III. Economic Impact Results

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).

Business revenue. In 2009, THDA-related activities injected into the economy a total of $485,732,229. This spending generated an additional economic impact of $350,600,974 (indirect and induced) through business revenue multipliers. Total contribution of the THDA-related activities to the Tennessee's economy is estimated at $836,333,188.

Personal income. The IMPLAN model also calculates personal income associated with the THDA-related spending. In 2009, individuals received $177,533,980 in wages and salaries through the THDA programs. Additional personal income generated through the ripple effect was $115,333,060. The total personal income generated by the THDA-related activities was $292,864,036.

Employment (jobs). The THDA-related activities provided employment opportunities for many individuals. The direct total employment impact was 4,675 jobs, primarily in the construction sector. In addition, 2,875 jobs were created through the ripple effect. Total employment impact was estimated at 7,550 jobs.

State and local taxes. The THDA-related activities also generated sizable tax revenues for the state and the local governments. The model estimated tax revenues due to the THDA-related activities were $26,352,916.

Table 1: The Economic Impact of The THDA Programs on the Tennessee Economy, 2009 (Dollar Figures in Millions)

Type	Direct	Indirect	Induced	Total	Multiplier*
Business Revenue (Million $)	$485.732	$143.606	$206.995	$836.333	1.72
Personal Income (Million $)	$177.534	$47.975	$67.355	$292.864	1.65
Employment (Jobs)	4,675	1,143	1,732	7,550	1.62
Estimated State and Local Taxes (Million $)[*]	N/A	N/A	N/A	26.353	N/A

*Multipliers are IMPLAN SAM Multipliers and calculated by dividing the total impact by the direct impact.

**Estimated state and local taxes is derived from the model.

Impact by the major industries. Even though THDA-related spending takes place primarily in the construction sector, that spending affects all industries through the ripple effect. Table 2 shows the economic impact of the THDA-related spending by major industries. According to Table 2, the largest impact is in the construction sector with $265,598,675 in business revenues, $117,660,804 in personal income, and 2,935 jobs. Other major sectors that substantially benefit from the THDA-related spending are manufacturing, retail trade, finance and insurance, real estate, professional services, health and social services, and government. “All others” represent the following major industries: agriculture, mining, utilities, wholesale trade, transportation, information, management of companies, administrative and waste services, educational services, arts, entertainment and recreation, accommodation and food, and other services.

Table 2: Impact of the THDA Programs on the Tennessee Economy by Major Sectors in 2009 (in Million Dollars)

Major Sectors	Business Revenue (in 2009 dollars)	Personal Income (in 2009 dollars)	Employment (Jobs)
Construction	$265.599	$117.661	2,935
Manufacturing	$54.730	$10.293	208
Retail Trade	$65.167	$25.170	903
Finance and Insurance	$55.045	$18.593	294
Real Estate	$32.651	$5.668	159
Professional Services	$36.991	$16.175	266
Health and Social Services	$49.780	$27.583	564
Government	$17.141	$4.130	50
All Others	$259.229	$67.591	2,172
TOTAL	**$836.333**	**$292.864**	**7,550**

IV. Methodology and Study Assumptions

Concept of the economic impact. When THDA helps a low-income borrower buy his/her first house or provides some relief to a cost-burdened renter, this affects the life of that person and overall society in several ways.[9] In addition to the benefits reaped by the individuals and the 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 the affordable housing. One additional low-income unit built with the incentives created through the tax credit will house a low-income family, and this is an important contribution to the well-being of that family that will be paying less than or equal to 30 percent of the area median income for housing. In addition to the social benefits, 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 economy 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, government will take some of it as 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 type of the initial spending, mostly related to the sector of the economy in which it is spent, and the strength of the local economy. For example, the spending in construction sector supports a larger multiplier than initial spending in the finance sector. The more self-sufficient the local economy is, the higher the multiplier will be. If many things are not produced

[9] For a detailed review of literature about health benefits of affordable housing see: Lubell, J., R. Crain, and R. Cohen, (2007). Framing the Issues - the Positive Impacts of Affordable Housing on Health, *Center for Housing Policy*, Enterprise and for a review of literature about education benefits of affordable housing see: Lubell, J. and M. Brennan, (2007). "Framing the Issues – the Positive Impacts of Affordable Housing on Education," *Center for Housing Policy*, Enterprise. 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

locally and the region (i.e. the State) depends on the other outlying regions, the value of the multiplier will be smaller.

The modeling approach and the definitions. THDA used the IMPLANpro input-output model to calculate the "ripple" effects on the Tennessee economy. The IMPLAN model calculates the total business revenues, the personal incomes, and the total employment. For each of these categories, the IMPLAN model provides the direct, the indirect, and the induced impacts. Here is a brief description of each of these concepts:

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

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

3. *Employment.* The number of jobs generated by the THDA programs and grants spending in the economy.

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

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

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

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

Study assumptions and data. Critical to any economic impact analysis is to assemble and process the required data. This requires extensive cooperation among different units administering programs and grants as well as generating program and grant data. After completing this process, we develop several assumptions to subgroup general data categories into appropriate sectors that are suitable for the IMPLAN analysis.

Some of the THDA programs and grants involve THDA fund allocations as well as leveraged funds from either industry or other grant funds. We briefly lay out assumptions by program below.

(1). The Homeownership Program. In 2009, more than $44 million was spent for the construction of the new homes, of which $8 million was modeled as the land acquisition and $36 million for the construction spending. A total of $30 million of the closing costs was associated with 2,411 mortgages that included both new and existing home purchases. The closing cost data were further distributed to appropriate sectors for

modeling purposes. In addition to the construction and the closing costs, we estimated the economic impact of the shift in the spending pattern of the households when their status changed from the renters to the homeowners. We used Consumer Expenditure Survey (2008) data to identify the spending patterns of both renters and homeowners.

(2). The LIHTC program. We estimated that $184.7 million is spent in 2009 for construction of new multifamily units, of which $15 million was from THDA allocation and $169.7 million was leveraged from the industry.

(3). The Multifamily Tax Exempt Bond Authority. We estimated that approximately $92 million was spent in 2009 for the rehabilitation of the multifamily units.

(4). HOME program. In 2009, the total spending for the new units was estimated at $3.7 million (both residential and rental). An estimated $13.8 million was spent for the rehabilitation within the framework of this program. $60,000 worth of *ADDI* was given to 12 households, which was assumed to be used to pay the closing cost expenses.

(5). Section 8 direct rental assistance. This program provides direct rental assistance to the low income renters and thereby frees up their income (rent saving) to spend on other goods and services such as health care, childcare, food, clothing, and transportation. With the direct rental assistance, being able to pay lower than market rate increases residents' "net disposable income." The residents who use the direct rental assistance contribute to a diverse local economy through their additional spending power distributed across major expenditure categories. In 2009, rental savings were estimated at more than $138 million.

(6). Community Investment Tax Credit (CITC). The program created additional $9 million spending in 2009.

(7). The Emergency Repair Program (ERP). In 2009, $2.8 million was used to stabilize the elderly homeowner's residence by making rapid, essential repairs to make the home livable.

(8). The Rural Housing Services. In 2009, THDA allocated $562,729. Additional $851,975 was leveraged from other grant funds. A total of $1.415 million was modeled as maintenance and repair spending.

(9). RAMPS provided $81,073 to make 117 homes wheelchair accessible.

(10). The Emergency Shelter Grant Program (ESG) awarded $1.62 million to non-profits serving Tennessee counties to help homeless and domestic violence shelters.

V. Conclusion

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

- ✓ For every dollar of business revenue, resulting from the THDA Programs, an additional $0.72 of business revenue was created throughout the economy.
- ✓ For every dollar of personal income, related to the THDA programs, an additional $0.65 of personal income is generated throughout the economy.
- ✓ For every 100 jobs, related to THDA programs, an additional 62 jobs are created throughout the economy.

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

1. The Homebuyer Education Program: THDA requires homebuyer education for all Great Start and Great Advantage loan applicants and encourages it for all consumers considering homeownership. THDA's purpose not only is to assist people with purchasing homes, but also to help them become long-term, successful homeowners. Education and training aim to prepare consumers — emotionally and financially – for the commitment and investment of buying a home. In some economic impact studies[11] homebuyer education is also included in calculations of impact, because it helps borrowers to buy their homes more quickly than otherwise. Even though we were not able to include the value of homebuyer education in our model as an input, we acknowledge its value as making the borrowers more financially savvy and even later helping them keep their houses (not to default or go through foreclosure).

2. The Foreclosure Prevention Program provides funds to the non-profits to assist the homeowners in preventing foreclosure and mitigating the impact of the foreclosure

3. The Neighborhood Stabilization Program (NSP) awards funds to the non-profits and the local governments to purchase foreclosed properties for renovating into rental and owner occupied homes.

4. The Tax Credit Assistance Program (TCAP) provides funding assistance for affordable rental housing developments that received a Low-Income Housing Tax Credit allocation and need additional equity.

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

5. The Section 1602 (Grants in Lieu of Tax Credits) Program provides a cash-out of unused low income housing tax credits from the U.S. Treasury.

6. The Homelessness Prevention and Rapid Re-housing Program (HPRP) awards funds to the non-profits that serve the State to provide temporary housing services to the individual and the families who are homeless or at risk of being homeless.

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

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

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

The cost of land acquisition is removed from the final price of the housing because it is not part of the construction spending and it does not create a multiplier effect like spending on the other items. For the single-family housing, we used the 2005 home sales price data, which THDA annually compiles from the Comptroller's Office. According to this data, for the homes sold in 2005, the land value was estimated at about 18 percent of the sales price. The land value on rental housing is different from single family because of the higher density. In the same amount of land, more rental units can be built than the single-family units. Therefore, it comprises the smaller portion of the rental housing prices. A study financed by the Council of Large Public Housing Authorities (Econsult Corporation, 2007)[12] uses 10.4 percent of the total development costs as the national estimate of the land acquisition. In another study conducted by Enterprise Foundation[13]; the land acquisition cost is calculated as about six (6) percent of the total development costs. In our previous economic impact studies we inputted 10 percent of the total development cost for the land value. However, this year we had 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 low-income housing tax credit allocations. We directly inputted that land value to our IMPLAN model. It also yielded around seven (7) percent of the total development cost.

Production period to complete the housing units. There is a lag time between the allocation of the low income housing tax credit, the multifamily tax-exempt bond authority and the HOME grants and the start-up of the housing developments. This becomes an issue because, for example, for the 2009 LIHTC allocations, developers are required to submit their initial applications for the year by late March. The developers get their allocation of the tax credits after all units in the development are placed in service. Therefore, to determine the impact of 2009 activities, we cannot use the 2009 allocations. Most probably, the developments rewarded with the tax credits in 2007 and 2008 will comply with the requirements and place the units in service in 2009. In terms of our model, the important stage is the time they start the new construction or the rehabilitation so that they inject the money into the economy. Using the available data, it is established that developers mostly act on their LIHTC commitments in the second year after they receive their right to obtain the tax credit. Based on this prior knowledge and after reviewing the data on the annual tax credit allocations we made the following assumptions:

- ✓ LIHTC allocations of 2007 and 2008 will be spent in the calendar year 2009.

[12] Econsult Corporation (January, 2007), "Assessing the Economic Benefit of Public Housing", Submitted to the Council of Large Public Housing Authorities, available at: http://www.clpha.org/uploads/final_report.pdf

[13] Enterprise Foundation (1999), "Developing Multifamily Housing with New Construction, available at: http://www.practitionerresources.org/cache/documents/36615.pdf

- ✓ We used an 80-20 percent division, which means that of the total LIHTC spending in the calendar year 2009, 80 percent comes from the 2007 THDA tax credit allocations and 20 percent from the 2008 THDA tax credit allocations.

- ✓ For the multifamily tax exempt bond authority, the developers have one (1) 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 (2) years. Therefore, we decided to use the 2008 allocations for the multifamily tax exempt bond authority developments.

- ✓ In terms of the HOME program, we used the 2008 allocations to represent the HOME grant spending because of the difficulties of obtaining actual spending amounts in a certain year (i.e. 2009) and comparing the allocations and the withdrawing of the grant dollars. We acknowledge that the grantees may choose to spend their 2008 allocations later than 2009, but in the absence of better tracking of the actual spending, this will be the way to resolve that issue.

References

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