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Spending for affordable housing:

**How Lexington-Fayette Urban County, KY compares to similar
cities in the U.S.**

Chenglin Zhao

Capstone Project

Martin School of Public Policy and Administration

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Executive Summary

Objectives: The shortage of affordable housing in Lexington-Fayette urban county has become an important policy issue. The analysis in this study is designed to find out does Lexington-Fayette Urban County do better or worse in financing affordable housing for low-income residents.

Method: By comparing Lexington-Fayette Urban County with 11 similar cities in U.S., there may reveal options for the Lexington-Fayette Urban County government to improve housing supply financing assistance services, find new funding sources for affordable housing and ensure more low-income residents can find affordable housing.

Key finding: Nonprofit housing operations play meaningful roles in addressing the supply of affordable housing in some cities.

1. Problem Statement

As one of the largest cities in Kentucky, with 122,746 households, Lexington-Fayette Urban County experiences problems in achieving a sufficient amount of affordable housing. The current stock of housing includes 136,000 units with almost 10 percent vacant (13000 units) and 90 percent occupied (123,000 units). Of those 123,000 occupied housing units, 67,000 (54%) are owner-occupied and 56,000 (46%) are renter occupied. Approximately 58% of households live in owned homes, with 27% paying more than 30% of total household income in mortgage costs to own the home. About 47.5% of renters in Lexington-Fayette Urban County spent 30 percent or more of household income on housingⁱ.

ⁱ U.S. Census Bureau, 2012 American Community Survey

Statements by current city leaders indicate that the shortage of affordable housing in Lexington-Fayette urban county has become an important policy issue. Furthermore, the shortage of safe and affordable housing has multiple impacts on low-income people. Since building housing away from the city center pushes low-wage workers further from job opportunities: for people with tight budgets and limited transportation options, the location of housing limits their choice of jobs. Lack of affordable housing can contribute to poor mental health. Low-income families tend to move more frequently in their search for an affordable home, and this is detrimental to their health. An interesting phenomenon has been shown in many studies that homeowners usually achieve better mental health outcomes than renters. One possible reason for this phenomenon is that the stable and affordable characteristics associated with homeownership can help homeowners minimize disruptions caused by frequent and unwanted movesⁱⁱ.

The primary purpose of this research is to study spending for affordable housing in Lexington-Fayette Urban County. By comparing Lexington-Fayette Urban County with 11 similar cities in U.S., I hope to assess whether Lexington-Fayette Urban County has done better or worse in financing affordable housing for low-income residents. Also, there may reveal options for the Lexington-Fayette Urban County government to improve housing supply financing assistance services, find new funding sources for affordable housing and ensure more low-income residents can find affordable housing.

ⁱⁱ "The Impacts of Affordable Housing on Health: A Research Summary" Online Posting accessed on May, 2011, http://www.nhc.org/media/files/Insights_HousingAndHealthBrief.pdf

2. Conventional Definition

1) Federal housing programs for low-income people.

U.S. Department of Housing and Urban Development (HUD) is administers federal housing program. The main recipients for these housing programs are low- and moderate-income people. As defined by HUD, low-income people refer to whose annual income does not exceed 80 percent of the median income for the area and moderate income is below 115 percent of area median income. Here is an overview of federal programs providing housing assistance to low-income people.

| Table 1 Federal housing programs for low-income people | |
|--|---|
| Program Name | Brief Description |
| Public Housing | Public housing was established to provide decent and safe rental housing for eligible low-income families, the elderly, and persons with disabilities. It is the most commonly-known form of low-income, subsidized housing in the United States. Units are built, owned and managed by local housing agencies (PHAs). |
| Section 8 Housing Choice Vouchers | The housing choice voucher program is the federal government's major program for assisting very low-income families, the elderly, and the disabled to afford housing in the private market. Housing choice vouchers are administered locally by public housing agencies (PHAs). Vouchers subsidize rents charged by private landlords. |
| Home Investment Partnerships Programs | This provides formula-based grants to states and localities that communities use - often in partnership with local nonprofit groups - to fund a wide range of activities including building, buying, and/or rehabilitating affordable housing for rent or homeownership or for providing direct rental assistance to low-income people. |

| | |
|---|---|
| Low-income Housing Tax Credits (LIHTC) | The LIHTC Program is an indirect Federal subsidy used to lower the cost to private landlords for the development of affordable rental housing for low-income households. |
| Section 8 Project-Based Rental Assistance | The rents of some of the residential units are subsidized by HUD under the Section 8 New Construction ("New Construction"), Substantial Rehabilitation ("Substantial Rehabilitation") and/or Loan Management Set-Aside ("LMSA") Programs. All such assistance is "project-based", meaning the subsidy is guaranteed to developers who build low-income rental projects. |
| Section 202 Supportive Housing for elderly | HUD provides capital advances to finance the construction, rehabilitation or acquisition with or without rehabilitation of structures that will serve as supportive housing for very low-income elderly persons, including the frail elderly, and provides rent subsidies for the projects to help make them affordable. |
| Section 236 Rental Assistance Payments (RAP) projects | This combined Federal mortgage insurance with interest reduction payments to developers/landlords for the production of low-cost rental housing. Under this program, HUD provided interest subsidies to lower a project's mortgage interest rate to as low as 1 percent. |
| Section 8811 Supportive Housing for persons with disabilities | The program provides assistance to expand the supply of housing with the availability of supportive services for persons with disabilities and promotes and facilitates community integration for people with significant and long-term disabilities. |

Sources: U.S. Housing and Urban development <http://portal.hud.gov/hudportal/HUD>

Generally speaking, for subsidized housing, one part of subsidies of local assisted housing usually comes from the Housing Trust Fund, which is a new federal affordable housing production program that will complement existing efforts to increase and preserve the supply of affordable housing for extremely low- and very low-income households. The other part of subsidies is offered by the HUD programs mentioned above. The majority of

assisted housing is either subsidized by the public housing program or by Section 8 housing choice vouchers program.

2) Fair Market Rents

Fair market rents (FMRs) refer to the gross estimated rents that required to be paid in the housing market to obtain privately owned rental housing. The rents are set mainly for two uses. First, FMRs determine the eligibility of rental housing units for section 8 program. Section 8 rental program participants cannot rent units whose rents exceed the FMRs, Second, FMRs serve as the payment standard used to calculate the subsidies under the section 8 housing choice voucher programⁱⁱⁱ. FMRs include shelter rent and utilities (not including telephone, cable, and satellite television)^{iv}.

The fiscal year (FY) 2013 Fair Market Rent (FMR) for a two-bedroom unit within Fayette County is \$700, which is a 3 percent increase in rent from the FY2012 FMR for the same sized unit. The income needed to afford a two-bedroom unit at FMR is given at \$26,480. The median household income for renters in Fayette County is \$24,913, which falls short of the income needed to afford a two-bedroom unit at FMR by \$1,567^v.

3) Affordability

ⁱⁱⁱ http://www.hud.gov/offices/pih/ih/codetalk/negreg/handouts/2003/june/june03_31.pdf

^{iv} Lexington-Fayette Urban County Human Rights Commission. (2013). State of Fair and Affordable Housing Report for Lexington-Fayette Urban County, Kentucky

^v Lexington-Fayette Urban County Human Rights Commission. (2013). State of Fair and Affordable Housing Report for Lexington-Fayette Urban County, Kentucky

HUD defines affordable housing as that which requires a household to pay no more than 30 percent of its annual income for housing^{vi} Families who pay more than 30% of their income for housing are considered cost-burdened and may have difficulty affording other necessities such as food, clothing, transportation and medical care.

3) Public Housing Agencies

Generally HUD doesn't work directly with recipients benefiting from the federal housing programs Congress funds. States usually authorize public housing agencies (PHAs) at the municipal level to operate subsidized housing programs tailored to the local area. For example, a Section 8 housing voucher recipient living in Lexington-Fayette Urban County, Kentucky would work through Lexington-Fayette Urban County's PHA (Lexington Housing Authority) when it comes to her subsidized housing needs.

3. Literature Review

The literature reviewed for this study follows two themes. The first is housing studies and reports on low-income housing in Lexington-Fayette Urban County and Kentucky. These help determine if there is sufficient publically-available secondary data on housing to help LFUCG policy makers develop strategic plans for affordable housing.

^{vi} U.S. Department of Housing and Urban Development
http://portal.hud.gov/hudportal/HUD?src=/program_offices/comm_planning/affordablehousing

Among studies of this theme, the Lexington-Fayette Urban County Human Rights Commission (2013) released a report on fair and affordable housing. The report calculated total units of subsidized housing and gave an introduction of HUD programs that Lexington-Fayette Urban County has for low-income people. For the data, the report listed the specific number of total units for each kind of housing programs. Moreover, it also shows the locations of subsidized housing on a map of Fayette County.

Kentucky's statewide Housing Policy Advisory Committee (2012), in partnership with Kentucky Housing Corporation released another similar report summarizing available data to provide a concise look at many of the major factors affecting housing in general and affordable housing in particular. The study provides specific information on demographic, economic, housing and homelessness characteristics in Kentucky. For rental housing data, there is a detailed listing of the total units of housing choice vouchers and public housing by county as well as information on other subsidized rental housing projects. Based on the report, Lexington-Fayette Urban County has a total of 7,635 subsidized units, with 738 units of public housing and 2,551 units covered under the housing choice vouchers program. Then it employs different kinds of maps to show further information on rental housing including rental vacancy rates, the percentage of renter households by county, and the percentage of renters unable to afford FMR for a two bedroom unit.

Both of these two studies provided a large amount of primary data that could be of use may use, however, there isn't much information concerning secondary data on housing, such as the availability of subsidized housing, or the average number of people per subsidized unit. In order to acquire more information depicting affordable housing for low-income people in Lexington-Fayette Urban County, I also reviewed the official websites of Kentucky Housing Corporation, Lexington-Fayette Urban County Housing Authority, and U.S. Housing and Urban Development. The information available from these websites is same as the information mentioned above.

The second section of the literature review covers a group of studies that explore ways to increase affordable housing. The majority of these studies analyze funding sources for affordable housing. Mihir A (2008) examined the effects of the Low Income Housing Tax Credit (LIHTC) on subsidizing the development of low-income housing. LIHTC is financed by the federal government but administered by state housing authorities. Private developers can be subsidized by this program in acquiring, constructing, and rehabilitating the rental property. "Under this program, the Internal Revenue Service allocates non-refundable tax credits to housing agencies run by the state governments, which then award the credits to selected housing projects proposed by developers^{vii}." The author believes that a notable feature of the LIHTC program is that there is no budgetary

^{vii} Mihir A, D, Dhammika,D, & Monica, S. (2008). Tax Incentives for Affordable Housing: The Low Income Housing Tax Credit

uncertainty about the amount of resources committed by the government to low-income housing, which is seen as politically advantageous.

Alicia, S (2007) stated his idea of expanding access to affordable housing for low-income people by letting states administer their own rental voucher program to augment Section 8.

Rachel, B (2014) talked about this in detail. Due to rapid increase in the demand of affordable housing and the scarcity of federal housing assistance, states have increasingly had to develop alternatives to federal housing assistance to meet the affordable housing needs of low-income individuals and families. Beginning in 1990s and continuing today, many states created state funded housing assistance program to meet the affordable housing needs of low-income individuals with mental illnesses and other disabilities.^{viii}In

Alicia's statement, in terms of building new homes and improving the existing housing stock, allowing states to use locally collected revenues to provide more affordable housing is a way to increase public funding. However, "like the Section 8 program, state-funded voucher programs have been subject to program changes and budget cuts over the last decade."^{ix} Due to insufficient revenues, the total number of state-funded subsidized housing units has decreased rapidly. For example, the Massachusetts Rental Voucher Program (MRVP) provides both tenant-^x and project-^{xi}based vouchers to

^{viii} Rachel B, Kevin M, & Melany M. (2014). State Funded Housing Assistance Programs

^{ix} Alicia S, Bo Z, & Darcy Rollins S, (2007). The Lack of Affordable Housing in New England: How Big a Problem? Why Is It Growing? What Are We Doing About It?

^x Tenant-Based Rental Assistance: Rental assistance that is not attached to a structure and can move with the assisted household, within program limitations.

households whose income level does not exceed 200 percent of the federal poverty level. In the early 1990, MRVP subsidized roughly 15,000 households and almost 6,000 units in Massachusetts. As of January 2005, the program supported only one-tenth (1,544) as many tenant-based vouchers and only half (3,171) as many project-based vouchers in the state^{xii}

Instead of analyzing funding sources, some studies focus on other strategies to encourage affordable housing. First is state legislation. Burnett (2008) mentioned that some states, such as Rhode Island has passed “fair share” housing laws that mandate every local jurisdiction in the state to contribute their “fair share” toward meeting local affordable housing needs.^{xiii} Alicia recommends that ineffective policies intended to increase the supply of affordable housing units should be revised or removed. He considers policies are ineffective if communities are opposed to build new housings or regulatory barriers making new development impossible or difficult.

Another suggested strategy is the provision of better information. Burnett (2008) talked about providing information to stakeholders to facilitate the production of affordable housing. The information includes databases of affordable housing information, housing

^{xi}Project-Based Rental Assistance: Rental assistance that is committed to a specific unit in a building through a contract between the owner and a housing agency.

^{xii} Citizens' Housing and Planning Association 2005a

^{xiii} Kimberly Burnett, Jill Khadduri, Justin Lindenmayer, Research on State and Local Means of Increasing Affordable Housing

supply and demand, vacant building registries and the expense of utilities^{xiv}. He discussed different opinions on this strategy: People who support it think the information may help developers by identifying buildable lots and locating markets with housing demand; however, people who are opposed to the strategy think it doesn't directly produce or preserve affordable housing.

Learning from the above studies, I concluded that in order to analyze housing conditions of one area, I have to study its specific demographic and housing information. The goal of this study was to see if enough secondary information is there to allow a meaningful comparison of the housing markets of eleven cities similar to Lexington-Fayette Urban County. If the comparisons appear to be reasonably valid, then it could indicate that local officials can use secondary data for planning. However, if the comparisons are not usable, then it means that the data may not be specific enough for planning purposes.

4. Comparison cities

Eleven relatively similar cities were selected along three dimensions: area, population, and per capita personal income (PCPI). I choose these three as my selection criterion since they are most relevant to housing issues. PCPI is a good measure of the wealth of the population of a city, particularly in comparison to other cities. Furthermore, PCPI is a better measure of the size of the total city economy because it doesn't speak to how the

^{xiv} Kimberly Burnett, Jill Khadduri, Justin Lindenmayer, Research on State and Local Means of Increasing Affordable Housing

income is distributed. The city where Bill Gates lives would likely have a high PCPI, but could still have low average family income because most of the money goes to one individual. PCPI shows how much total income is received by individuals in the city simply divided by the number of people in the city. Population and area can give a general demographic profile of a city. For Lexington-Fayette Urban County, it consists of 283.6 land square miles with 305,389 residents. The per capita personal income for Lexington-Fayette Urban County is \$28,778^{xv}. According to this information, I select cities that have land areas from 52 square miles to 284 square miles with populations between 242,000 and 340,000. The eleven cities selected are shown in the table 2. They are ordered by the city name alphabetically.

| Table 2 Eleven similar cities | | | |
|--------------------------------|--------------------|------------------|----------|
| City | Land area (sq. mi) | Total population | PCPI |
| Aurora, Colorado | 154 | 326,249 | \$23,139 |
| Chula Vista, California | 52 | 242,499 | \$24,067 |
| Cincinnati, Ohio | 78 | 297,314 | \$23,792 |
| Corpus Christi, Texas | 160 | 305,427 | \$23,340 |
| Fort Wayne, Indiana | 79 | 253,617 | \$22,166 |
| Greensboro, North Carolina | 104 | 270,619 | \$24,208 |
| Henderson, Nevada | 79 | 258,270 | \$29,823 |
| Lexington-Fayette Urban County | 283 | 305,489 | \$28,778 |
| Lincoln, Nebraska | 74 | 259,218 | \$25,565 |
| Pittsburgh, Pennsylvania | 55 | 306,430 | \$24,527 |

^{xv} Data comes from U.S. Census Bureau

| | | | |
|-----------------------|-----|---------|----------|
| Saint Paul, Minnesota | 56 | 286,171 | \$24,641 |
| Tampa, Florida | 112 | 339,391 | \$27,403 |

Sources: Land area data comes from city-data.com list. Total population data comes from American Community Survey 2008 5-year estimate. PCPI data comes from 2011 American Community survey.

5. Comparison

My comparison focuses on three aspects: the estimated number of people eligible low-income for affordable housing programs, the number of subsidized housing units, and the finances of nonprofit housing organizations in each city.

1) Eligible low-income people for affordable housing programs

When governments talk about affordable housing, it usually means affordable for people at the lower end of the income scale, which is low-income people. Starting from this point, in order to know how much money should be used in financing affordable housing, I think general information on the total number of low-income people who have eligibility for affordable housing programs is necessary. Especially after reviewing a lot of housing-related data, I found there is no direct data under this category. For the sake of comparability, the percentage of low-income in total population will be employed to compare Lexington-Fayette Urban County with similar cities to show whether Lexington-Fayette Urban County has a relatively large or small number of low-income people.

a. Income limits

Since housing costs and incomes vary from place to place, HUD programs have income limits for different areas and different family size^{xvi}. People who under the related income limit are eligible to apply for affordable housing support. Income limits are based on the area median income, which varies by community and by family size. Each affordable housing program uses the categories of low-income households, very low-income households, and extremely low-income households to determine which households qualify and what the rent can be.

| Table 3 Categories of income limits | |
|-------------------------------------|----------------------------------|
| Low-income households | 80 percent of area median income |
| Very low-income households | 50 percent of area median income |
| Extremely low-income households | 30 percent of area median income |

| Table 4 HUD FY 2014 income limits for different family size in Lexington-Fayette Urban County | | |
|--|--------------------------------|-----------------------------|
| Median Income | FY 2014 income limits category | Number of Persons in Family |

^{xvi} <http://www.huduser.org/portal/datasets/il.html>

| | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|-----------------|--|----------|----------|----------|----------|----------|----------|----------|----------|
| \$67800 xvii | Low (80%) income Limits | \$37,450 | \$42,800 | \$48,150 | \$53,500 | \$57,800 | \$62,100 | \$66,350 | \$70,650 |
| | Very Low (50%) Income Limits | \$23,450 | \$26,800 | \$30,150 | \$33,450 | \$36,150 | \$38,850 | \$41,500 | \$44,200 |
| | Extremely Low (30%) Income Limits | \$14,050 | \$16,050 | \$18,050 | \$20,050 | \$21,700 | \$23,300 | \$24,900 | \$26,500 |

Source: HUD FY 2014 income limits documentation system

b. Calculation

Since there is no direct data concerning the number of people who are eligible for affordable housing programs in each city, completed a series of calculations to estimate the number. First, based on the 2013 Federal poverty level, I calculated the housing income eligibility in terms of its percent of the 2013 federal poverty levels by number in household. The data on family size and family income as a percent of the poverty level for each city was taken from the American Community Survey five-year (2008-2012) PUMS data by city.

Table 5 2013 Federal Poverty Level

^{xvii} The median income HUD used (6\$7,800) is different from 2007-2011 5-year American Community Survey (ACS) data (\$47207). Because 2007-2011 5-year ACS data is used as the basis for calculating, for areas where there is a valid 1-year ACS median income result, HUD will use the 1-year ACS data as well.

| | | | | | | | | |
|----------------|----------|--------|--------|--------|--------|--------|--------|--------|
| Household size | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| 100% | \$11,490 | 15,510 | 19,530 | 23,550 | 27,570 | 31,950 | 35,610 | 39,630 |

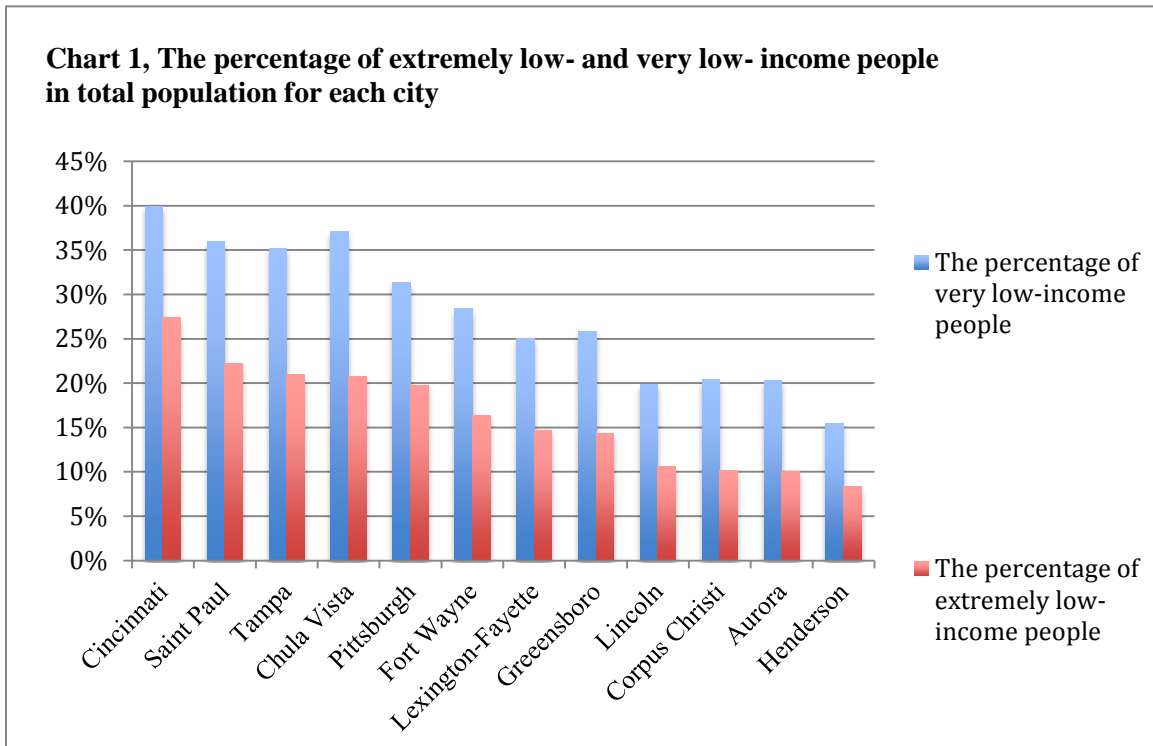
Second, Stata was used to make two estimations: 1. The percentage of the population in each city that lives in families of various size. 2. The percentage of the population in each city that live in a particular sized family **and** have incomes of a specified percent of the poverty level. 3. By multiplying the two numbers, I estimated the percentage of people in each city who live in particular sized families that have incomes below specified percent of the poverty level. I then applied resulting percentage to the total population to estimate the number of people in each category.

| Table 6 The estimated number of people in Lexington-Fayette Urban County by family size and family | | | | | | | | | |
|--|-------------------|--------|--------|--------|-------|-------|-------|-----|---------|
| FY 2014 income limits category | Persons in Family | | | | | | | | |
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | Total |
| Low income | 52,784 | 22,353 | 12,721 | 15,379 | 6,085 | 3,322 | 2,328 | 886 | 115,859 |
| Very-low income | 41,603 | 11,726 | 4,978 | 8,632 | 4,978 | 1,993 | 1,552 | 886 | 76,349 |
| Extremely low income | 27,886 | 6,084 | 2,764 | 4,092 | 1,106 | 1,329 | 776 | 886 | 44,923 |

c. Results

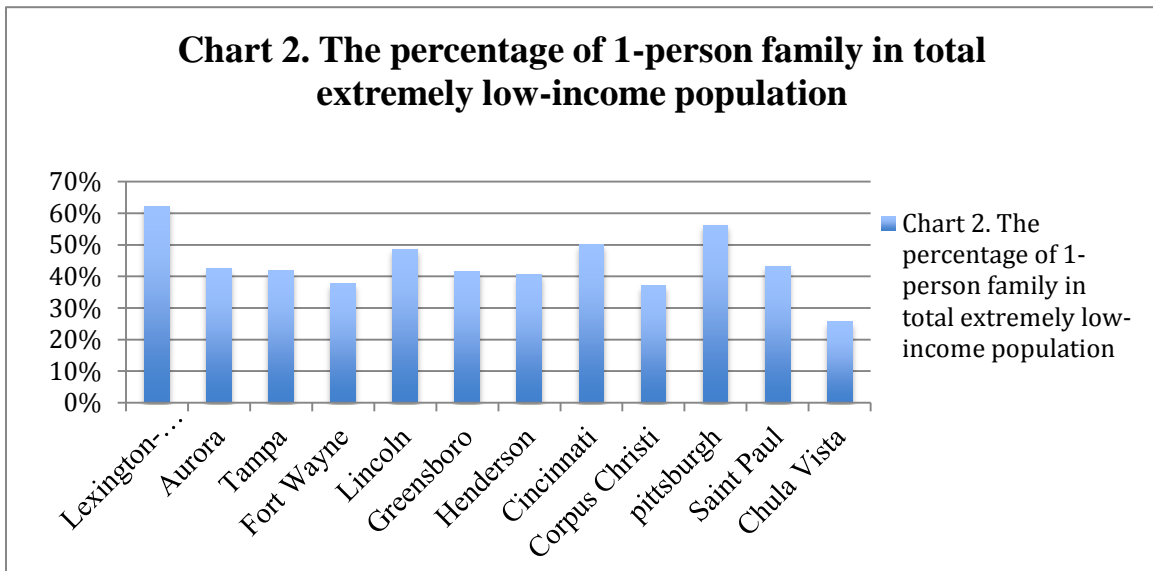
It is estimated that there are 44,923 extremely low-income people in Lexington-Fayette Urban County. Although the total number of extremely low-income people of Lexington-Fayette Urban County seems large, the percentage of extremely low-income people in total population for Lexington-Fayette Urban County is only 15%. As shown in

Chart 1, cities are ranked by the percentage of extremely low-income people from high to low; orange columns represent the percentage of extremely low-income people in total population. Cincinnati with highest percentage of extremely low-income people (27.39%) ranks first. Henderson has the lowest percentage of extremely low-income people, which is 8.3% in total population. Lexington-Fayette Urban County ranks seventh among all the 12 cities, which means compared with similar cities, the percentage of extremely low-income people in total population is moderate. For the percentage of very low-income people (blue columns), Lexington-Fayette Urban County with about 25% ranks eighth in 12 cities.



When calculating the total number of people living in particular sized families that have incomes below specified categories of income, I find that 1-person families take up the

majority of the low-income population in all of these 12 cities. As shown in Chart 2, nearly for all the 12 cities, the percentage of 1-person families in total population is around 50%. For Lexington-Fayette Urban County, this number is as high as 62%. This information is important for government when deciding what type of affordable housing unit should be built, efficiency, one-bedroom, or two-bedroom.



2) Subsidized housing units

Almost all affordable housing is subsidized. The government used to build and run affordable housing all by itself, through public housing developments. Newer generations of affordable housing programs rely on partnerships between the government and the private sector, which includes developers, landlords, and investors^{xviii}. Affordable housing programs for low-income people are listed and briefly explained in Table 1.

^{xviii} A guide to subsidized and regulated housing in NYC
http://www.welcometocup.org/file_columns/0000/0011/cup-fullbook.pdf

The subsidized housing units used for comparison among these cities are under two housing programs: public housing programs and Section 8 housing choice voucher programs. They are the most important and commonly known programs. The fact that I only choose these two programs instead of choosing all related programs to compare is due to the data limitation: only the data of these two programs is uniform and can be found for most of the compared cities. In this section, the compared objects are local public housing agencies (PHAs) instead of cities. As no data was published for Chula Vista, CA, Henderson, NV, and Cincinnati, OH, the comparison below only contains 9 cities.

a. General information for subsidized housing in Lexington-Fayette Urban County

On the basis of an assisted rental directory published in 2013 by Kentucky Housing Corporation, there are a total of 7,594 assisted rental housing units in Lexington-Fayette Urban County. All of the assisted rental units are subsidized by HUD programs. There are a total of 1,303 public housing units and 4,589 Section 8 housing units in Lexington-Fayette Urban County. For the 4,589 Section 8 housing units, they consist of 2,588 Housing Choice Voucher units and 2,001 project-based units^{xix}.

b. The availability of subsidized housing

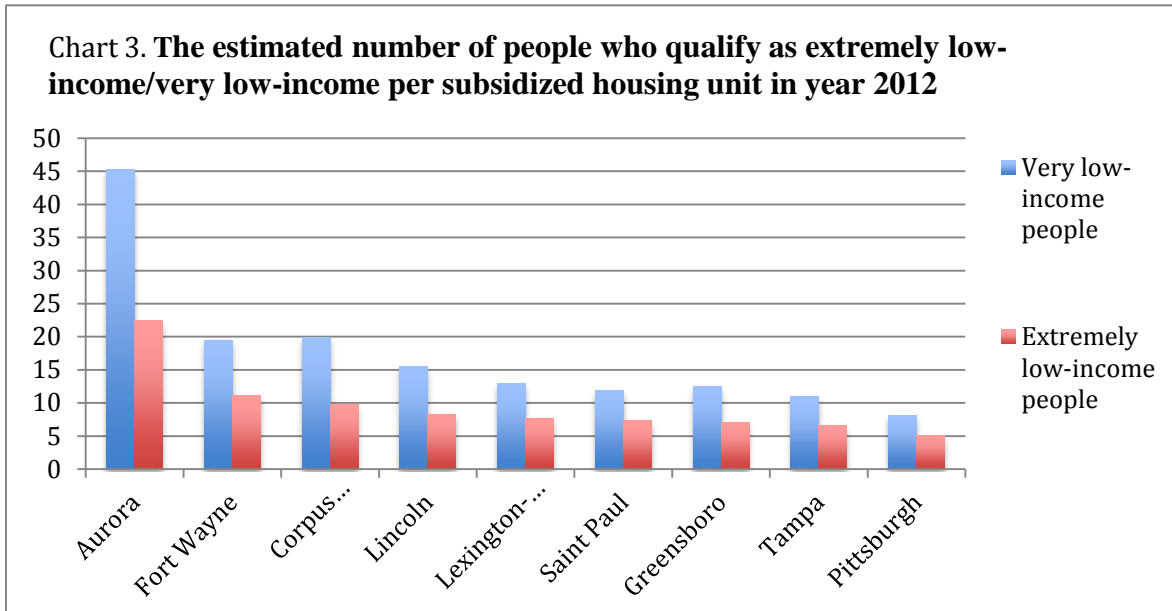
^{xix} Data comes from assisted rental housing published by Kentucky Housing Corporation

In order to measure the availability of subsidized housing for each city, I employed the estimated number of people who qualify as extremely low-income/very low-income per subsidized housing unit; the larger the number, the more likely that the supply of the two programs is inadequate to meet demand according to the HUD definitions. In Chart 2, cities are also ranked by extremely low-income people per subsidized housing unit from high to low. For Lexington-Fayette Urban County, the estimated number of people who qualify as extremely low-income per subsidized housing unit is 8, which ranks right in the middle among the nine cities. For this number, the highest value is Aurora, at an estimated 22 extremely low-income individuals per subsidized rental unit in the city. The lowest value is Pittsburgh at only 5. The estimated number of people who would be qualified as very low-income per subsidized housing unit for Lexington-Fayette Urban County is 13, which also ranks fifth among the 9 cities. Compared with other 9 cities, Lexington-Fayette Urban County appears to have a moderate demand for subsidized housing units (public housing and housing choice voucher complex). However, this result does not take other related affordable housing programs into consideration. There is still the possibility that, compared to similar cities, Lexington-Fayette Urban County has relatively large amount of subsidized housing units under other programs. Pittsburgh appears to have the least demand pressure for subsidized housing; I think the most important reason for this is that the total amount of subsidized housing units under these two programs is large. As shown in table 7, cities are ordered by the city name alphabetically. For Pittsburgh, there are 4745 units of public housing and 7078 units of

housing choice voucher, much more than what it is in Lexington-Fayette Urban County. According to this table, all of these nine cities have much more units under housing choice voucher program than public housing program. This is due to a lower cost of section 8 housing, since governments do not need to pay large amount of building expenses.

| Table 7 units of public housing and housing choice voucher program and extremely-and very-low income people | | | | | |
|---|-------------------------------|---|--------------------------------|--|---|
| City | Total units of public housing | Total units of housing choice voucher program | Total units under two programs | Estimated total number of very Low-income people | Estimated total number of extremely Low-income people |
| Aurora | 121 | 1,343 | 1,464 | 66,271 | 32,845 |
| Corpus | 1,836 | 1,312 | 3,148 | 62,412 | 30,931 |
| Fort Wayne | 747 | 2,976 | 3,723 | 72,044 | 41,536 |
| Greensboro | 2,394 | 3,173 | 5,567 | 69,744 | 38,755 |
| Lexington-Fayette Urban County | 1,303 | 4,589 | 5,892 | 76,349 | 44,923 |
| Lincoln | 320 | 3,003 | 3,323 | 51,316 | 27,336 |
| Pittsburgh | 4,745 | 7,078 | 11,823 | 96,079 | 60,531 |
| Saint Paul | 4,248 | 4,460 | 8,708 | 102,897 | 63,602 |
| Tampa | 2,975 | 7,916 | 10,891 | 119,496 | 71,079 |

Source: HUD 2012 picture of subsidized households by public housing agency level



3) Non-profit Organization Spending

Local non-profit organizations also offer assistance to low-income people to access affordable housing. The National Taxonomy of Exempt Entities (NTEE) system classifies nonprofit organizations into 26 major groups. I think the most related two major groups of nonprofit organizations for my study are L20 and L80. L20 – Housing Development, Construction & Management refers to organizations that build, rehabilitate, manage or provide rental housing or financial assistance for low-income individuals and families, older adults and people with disabilities. L80 - Housing support refers to organizations that provide supportive services which help people obtain and remain in suitable housing^{xx}. All of these types of organizations are relevant to my comparisons. I compare 12 cities in five aspects including the total number of organizations, total revenues, total program expenses, program expenses as a percent of revenues, and the per capita program

^{xx}<http://nccsdataweb.urban.org/PubApps/nteeSearch.php?gQry=L80&codeType=NTEE>

expenses (PCPE). As shown in table 8, cities are sorted according to the per capita figure highest to lowest. Per capita program expenses are calculated by dividing the total program expenses for all the nonprofits in each city by the estimated number of extremely low-income people in each city.

| Table 8 Comparison of non-profit organizations in each city | | | | | |
|---|-----------------------------------|------------------------|---------------|--|-----------------------------|
| City | The total number of organizations | Total Program Expenses | Total Revenue | Program expenses as a percentage of revenues | Per capita program expenses |
| Pittsburgh | 29 | 61,555,50 | 97,131,050 | 63% | \$1,017 |
| Chula Vista | 2 | 34,755,12 | 36,331,318 | 96% | \$692 |
| Saint Paul | 34 | 31,005,01 | 35,532,187 | 87% | \$488 |
| Greensboro | 9 | 10,090,46 | 12,093,383 | 83% | \$260 |
| Cincinnati | 25 | 19,532,55 | 22,144,145 | 88% | \$240 |
| Lexington Fayette Urban County | 20 | 9,611,666 | 12,211,727 | 79% | \$214 |
| Lincoln | 14 | 4,521,106 | 5,530,547 | 82% | \$165 |
| Tampa | 17 | 9,950,919 | 10,934,268 | 91% | \$140 |
| Fort Wayne | 5 | 1,453,345 | 2,737,547 | 53% | \$35 |
| Corpus Christi | 4 | 214,940 | 2,844,058 | 8% | \$7 |
| Aurora | 3 | 169,216 | 179,384 | 94% | \$5 |
| Henderson | 0 | 0 | 0 | 0% | \$0 |

Source: GuideStar nonprofit reports and 2012 990 Form

By comparing the total number of organizations, total program expenses, and total revenues, Pittsburgh and Saint Paul have relative higher values in all of these categories compared to other cities.

By employing per capita program expenses, I want to see if I can assess whether there are differences in the cities as to how significantly involved nonprofits might be in addressing the affordable housing problem. Pittsburgh, Chula Vista, and Saint Paul have the highest three values of per capita program expenses among the 12 cities. When looking at the comparison of the availability of subsidized housing, Pittsburgh has the least apparent excess demand for subsidized housing, however its percentage of extremely low-income people/very low-income people in total population is much higher than Lexington-Fayette Urban County. For those cities, which have higher percentages of extremely low-income people/very low-income people, due to their large amount of nonprofit housing organization spending, their availabilities of subsidized housing are much easier than Lexington-Fayette Urban County. In my opinion, more non-profit organizations involving in affordable housing with more money spent, more affordable housing units will be built and low-income people tend to have easier access to subsidized units. Lexington-Fayette Urban County still ranks in the middle of 12 cities, which means, compared with similar cities, the spending of local non-profits on affordable housing is moderate. LFUCG officials may want to investigate how nonprofit organizations in Pittsburgh may be partnering with government officials to better meet the demand for low-income housing.

6. Conclusion

1) By calculating the total number of people living in particular sized families that have incomes below specified categories of income, I find that 1-person families take up the majority of the low-income population in these 12 cities. Since more than half of the low-income people in Lexington-Fayette Urban County live alone, LFUCG officials may consider targeting development of more single-person subsidized rental units.

2) Lexington-Fayette Urban County has relatively low percentages of extremely low- and very low- income people. Although the availability of subsidized housing units for people still seems to be difficult compared to Pittsburgh, I think Lexington-Fayette Urban County has done much better in financing affordable housing among 12 cities. Since Pittsburgh with strong demographics and intense industrialization would attract many nonprofit organizations. If the estimates of the number of people who would qualify divided by the number of units available is a reasonable proxy for demand, Lexington-Fayette Urban County likely has a relatively low unmet demand for subsidized rental units.

3) It is seemed that nonprofit housing operations may be playing a meaningful role in addressing the supply of affordable housing in some cities. It appears that, per capita, such organizations have expended meaningful amount of money on housing programs in Pittsburgh, Chula Vista, and St. Paul. These cities may offer Lexington-Fayette Urban

County usable models for developing workable public/private partnerships in increasing the supply of affordable rental housing units.

4) I think the secondary data is not very sufficient for planning use by LFUCG officials. One important reason is that there is no data concerning local government expenses for affordable housing each year. If knowing this kind of information would help LFUCG officials better use their money: what portion of money should be used to built new affordable housing, what portion of money should be used to rehabilitate current housing units. Also, if funding sources of affordable housing information is given, it may provide a way for LFUCG officials to expand their funding sources to enlarge available affordable housing units.

5) The city comparisons are reasonable accurate. Although I use different years of data, the yearly change of data is too small to alter the results. I think local officials could use my findings to better understand low-income housing in Lexington-Fayette Urban County. Moreover, on the basis of my study, local government officials could improve their planning by combining other related information they already have.

7. Limitations:

1) Timing difference

When comparing the percentage of extremely low- and very low- income people in total population, the data for the total population of each city and the HUD income limits is taken from year 2014. However, the poverty levels are for 2013, and the estimate of the number of people with incomes at various percentages of the poverty level are drawn from the combined 2008-2012 American Community Survey public use micro data set for each city. Different time series may result in inaccurate estimation of total number of extremely low- and very low- income people.

Also, the nonprofit organization information was collected from 2012 990 Form, since the 2012 990 form is available for the majority of organizations. For organizations which do not have a 2012 990 form, I use their latest 990 Form. But the total number of extremely low-income people is for year 2014.

2) It's difficult to get uniform data. Different areas have their own name for federal affordable housing programs. So it's very confused when searching for the total units of one particular affordable housing program.

3) It's also difficult to find data on all elements of the low-cost housing market, particularly that provided by the private sector without government subsidies and also for particular programs offered by the local governments themselves.

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