

Research on the Positive Economic Influence of Subsidized Housing in the U.S. and China

Mutian Wang^{1,a,*}

¹*Capital Normal University High School, Beijing, 100048, China*
a. teddywang2015@sina.com

**corresponding author*

Abstract: The subsidized housing policy is one of the main policies to solve the housing problem for low-income populations worldwide. This essay quickly explains how the growth of subsidized housing boosts consumption and jobs in the economies of China and the United States. In order to analyze the growth of the economy more specifically, this paper mainly emphasizes the growth in employment and the local labor market. After explaining the basic principles and general economic performance, this paper also analyzes the real cases of the United States and China in detail. The practices of reasonable subsidized housing policy, whether in the short-term or long-term, provide many low-income people with jobs and gives them more stable houses to live in. Combining the analysis, this paper concludes that subsidized housing has a significant positive effect on economic growth and social stability. Therefore, both in developed and developing countries, local and central governments should promote the implementation of subsidized housing policies.

Keywords: China, American, subsidized housing, employment, local economy

1. Introduction/Background

The practice of subsidized housing policy's impact on the economy in China and the U.S.

1.1. Problem Statement

The subsidized housing policy in China is more of a national policy carried out by the central government from a political perspective to "improve the living quality of the low-income population." Because the policy proposed by the central government is relatively general and does not provide specific measures, local governments are unwilling to implement a subsidized housing policy because of the significant short-term financial burden. This paper will study the short-term and long-term positive labor market impact of subsidized housing policy based on specific cases in China. As a representative of the western capitalist world, the United States can enlighten China's future subsidized housing policy by studying the positive role of its subsidized housing policy in promoting the labor market.

1.2. Purpose of the Research

Through systematic research on the positive impact of subsidized housing policy on regional economic development, local governments will be more willing to promote and implement subsidized

housing policy. In the future, more low-income people will benefit, and the economy of more regions will be more dynamic and favorable in the short and long term.

2. Research Method

2.1. Selection of the Method

This paper will use literature research and case study methods to analyze the situation. Literature research is a type of scientific study that presents current knowledge about a topic and includes substantive findings as well as methodological and theoretical contributions. Literature papers are intended to provide relevant information about a topic and, if any problems have been identified, to recommend any solutions. This article is divided into a thesis statement, an outline, a body, and a conclusion. Also, this article provides relevant information regarding subsidized housing to recommend solutions to confront those issues in subsidized houses.

2.2. Research Process

This paper prioritized the report content on the government website as the most fundamental reference because the government document defines the subsidized housing policy most directly. In addition, I searched the National Bureau of Statistics database to obtain relevant data and combined it with specific policy research to obtain more accurate and official data. In order to get a multi-angle analysis of the problem and a more academic analysis, this paper also considers relevant documents published by other reliable, relevant scholars. In addition, due to the high mobility of the subsidized housing population, it is not feasible to obtain big representative data. This paper also analyzes the impact of subsidized housing on the economy by referring to some media content.

3. Research on the U.S. Subsidized Housing Policy and Its Economic Benefit

3.1. Introduction of the U.S. Subsidized Housing Policy

In the United States, subsidized housing is administered by federal, state, and local organizations that provide discounted rent assistance to low-income families. Since public housing is much cheaper than market rates, residents can live in more convenient areas rather than leaving the city in search of lower housing prices. Most government-backed rental assistance programs cap monthly rent at 30 percent of household income. Public housing in the United States used to mostly consist of one or more concentrated low-rise and high-rise apartment buildings, but now increasingly offers housing in a variety of settings and styles. State and municipal housing authorities, approved and funded by the U.S. Department of Housing and Urban Development, are responsible for the management of these complexes (HUD). By 2020, there will be 1 million public housing units.

In order to move into public housing, a family must meet the requirements for subsidized housing, which include that they have a "poor income" (less than 80% of the local median income). It is required that at least 40% of the new families a housing agency accepts each year have "very low incomes" that are no more than 30% of the local median or the poverty level, whichever is higher; on average, agencies far surpass this standard.

3.2. The U.S. Subsidized Housing Policy's Economics Benefit of Labor Employment in the Economy

Explanation of Basic Principles. Research consistently demonstrates that building subsidized housing generates jobs, just like building market-rate housing does, not only during construction but also

through new spending once the dwellings are occupied. The effect of building a specific type of subsidized housing is comparable to that of building an equivalent market-rate unit.

The money spent on materials, labor, and other expenses in the process of building affordable housing (or any type of housing) brings immediate economic benefits to the community. For example, if a builder buys doors and windows from a local supplier, the supplier may need to spend a lot of money on materials and hire extra workers to fill the order. The possibility that construction crews, glass makers, and gardeners will spend part of their money at the neighbouring supermarkets or shopping centre is another way that induced effects are established. "Ripple" or "multiplier" effects refer to the combined induced and indirect effects of home building on the neighborhood's economy. These benefits are strongest in areas with a high concentration of businesses and suppliers for the building industry. Jobs are still created in places with little commerce, services, or industry, but they are spread out further because the induced and indirect spending "leaks" to other areas.

Further analysis based on economic and employment models. Several well-known "input/output" models are used by academics, professionals, and proponents of affordable housing to evaluate the employment implications of their work.ⁱ The model "outputs" the amount of economic activity expected to come from investment using "inputs" that include statistics on the production of services and goods in the US industrial sector, the type and number of local business establishments, and a direct expenditure technique. These models take into consideration not only the direct costs associated with the actual building or remodeling of housing but also the costs incurred by suppliers (which have indirect effects) and the wages of those who are employed both directly and indirectly in the local economy (induced effects).ⁱⁱ The models estimate the total economic activity as well as the number of new local employment supported by it, the incomes these occupations will likely pay, and the taxes that will likely be paid to different levels of government.

The National Association of Home Builders [2] released a study showing the results of developing a 100-unit Low Income Housing Tax Credit (LIHTC) complex for families and seniors in a typical metropolitan area using the national average as model input. The model used in this study has been used by many local jurisdictions to measure the impact of housing construction within their borders (e.g., taxes, land costs, market values, fees). According to the National Association of Home Builders [2], the construction of 100 new LIHTC apartments for households creates 42 jobs under the induced effect of spending, in addition to the 80 jobs created directly or indirectly. The number of employment produced in senior development, in which units are frequently smaller, is somewhat lower (see Table 1).

The construction of 100 LIHTC family units will result in the long-term production of 30 new jobs that will sustain the ongoing consumption of the new tenants of these homes, in addition to these "live" jobs and economic activities. It is estimated that 32 jobs will be created for every 100 senior apartments to meet the growing customer demand. The National Association of Home Builders [2] predicts that the new residents will generate more than \$2 million annually for local employers and employees. The job creation potential of LIHTC developments is outlined in Table 1, which also shows that their impact on the workforce is comparable to that of a market-priced property of comparable size.

Table 1: Number of jobs created during and after the construction of a 100-unit multifamily property.

↵	Market-Rate Apartments↵	Family LIHTC↵	Senior LIHTC↵
Jobs Created Directly and Indirectly by New Construction↵	80↵	80↵	75↵
Jobs Supported by Spending Locally Earned Wages (Induced)↵	42↵	42↵	39↵
Jobs Supported by Households Occupying New Homes (Ongoing)↵	32↵	30↵	32↵

Source: National Association of Home Builders, 2010 and 2009a

As shown in Figure 1, different employment is supported by the demand for goods and services by households living in newly built houses and the increased spending power of those involved in construction (induced effects). Not surprisingly, the majority of jobs created by direct and indirect effects are in the construction sector. However, jobs created through induced and sustained economic activity are rising in the health and education, wholesale/retail trade, and eating and drinking establishments.

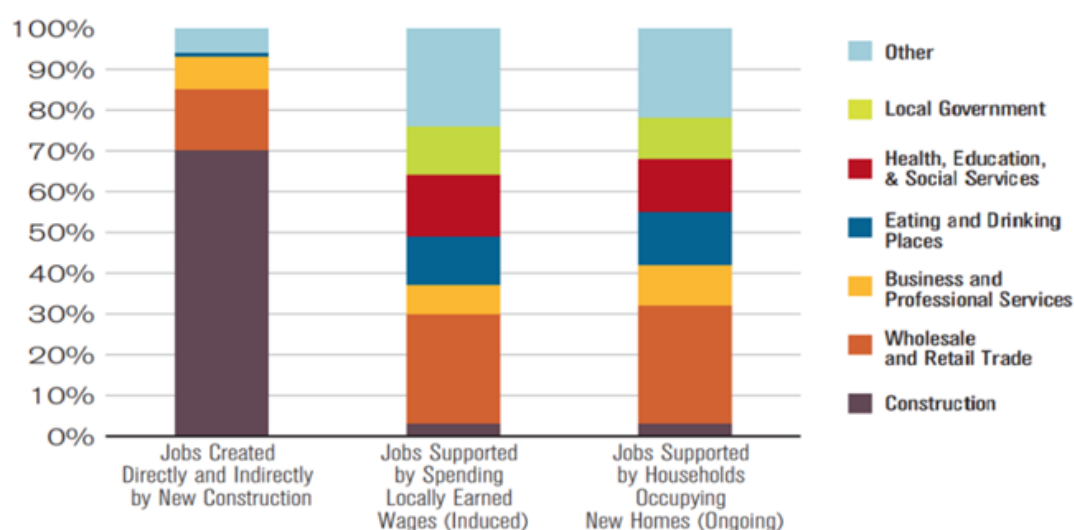


Figure 1: Types of jobs created during and after the construction of a 100-unit family LIHTC property.
Source: National Association of Home Builders, 2010 [2]

So far, studies provided by the National Association of Home Builders [2] have provided a good picture of how the creation of affordable housing may affect local economies, but they are not specific to any one place because of their national breadth. Here are some examples of the various ways scholars have applied related economic models to highlight the advantages of building affordable housing in certain locations.

3.2.1. Detailed Analysis in Specific Localities

Rhode Island. According to Hangen and Northrup [3], between fiscal 2007-2008, \$25 million of bonds were issued, triggering more than 200 million dollars in construction-related expenditures and

resulting in the construction of 582 reasonably priced rental and owner-occupied homes. To determine the cost of housing bonds in Rhode Island, they used a model. The indirect and induced effects of these housing bonds resulted in nearly \$400 million in new economic activity in the state. In this economic activity, affordable housing investments created or sustained 3,060 jobs and paid \$149 million in wages.

Minnesota. According to a study by the Minnesota Housing Finance Agency [4], \$260.6 million spent between May 2006 and May 2008 to subsidize housing rental assistance, construction, and reconstruction was able to leverage an additional \$471.1 million in private and public funds for the same purpose. Direct expenditures of \$731.7 million, plus \$0.91 for every dollar of indirect and guided expenditures, give a total economic output of about \$1.4 billion. This level of economic activity has sustained nearly 10,700 jobs in Minnesota over the past two years.

Pennsylvania State. The planned Pennsylvania state housing trust fund may spend \$1.28 more in indirect and induced spending for every dollar used to alter or renovate an existing home, according to Econsult [5]. Per \$1 million investment in the state's housing trust fund would result in the creation of somewhere around 14 to 20 jobs considering the impact on employment. Single-family development (\$0.62) and multifamily (\$0.69) have less but still large multiplier impacts.

HOPE VI sites across the U.S. The one-time economic effect of nine HOPE VIⁱⁱⁱ locations around the nation is examined by Zielenbach, Voith, and Mariano [6]. From 246.6 million dollars in Seattle to 29.9 million dollars in Kansas City, the total amount of indirect, direct, and induced economic activity at the nine locations fluctuated. According to the authors' calculations, the nine projects supported between 76 (Kansas City) and 786 (Seattle) new jobs during reconstruction, with pay for local workers accounting for a fraction of this economic activity.^{iv}

10 Large Metropolitan Areas. For every dollar that the federal government spends directly on capital and maintenance, suppliers, vendors, and wage earners generate an additional \$1.12 in induced and indirect spending. This finding comes from studies on public housing's economic benefits in ten significant metropolitan regions. Each metro region supports 244 jobs on average thanks to these expenditures [5].

Other Studies. Several studies have also looked at the economic effects of spending money on running subsidised housing buildings after they are built, as opposed to just developing and maintaining them. For instance, besides its findings regarding capital spending, Econsult [5] calculates that ongoing operations of public housing support 1,187 job positions in each metropolitan region it studied, and every dollar spent on operating expenses for public housing produces an extra \$0.93 of economic growth in the neighbourhood. In order to examine the effects of non-construction state and federal housing subsidies on the economy and employment in Utah, Wood [7] classified the \$61.4 million that the U.S. Department of Housing and Urban Development (HUD) paid to landlords and other housing providers in 2003 as income in the form of operating and capital funds as well as voucher assistance. According to Wood [7], these expenditures supported 1,100 jobs and brought \$17.2 million growth in different kinds of wages into the economy of Utah. Similar to this, the author counts the \$6.2 million of down payment assistance provided by the state to recipient households as income. Spending this money in Utah results in an economic impact of \$2.4 million in salaries and 95 employment positions for the state.

Another study used a completely different technique. A study of the housing needs of workers in St. Paul and Minneapolis did not examine the impact of operating or capital expenditures on the local economy, focusing instead on the economic impact working families could have on the area if subsidized housing were available for workers to rent or buy [8]. The area's unmet requirement for worker housing is estimated by the authors to be 5,000 units, which will need to be built. If these apartments were built, they would offer working families that are now unable to relocate their housing choices. According to the authors' calculations, the region loses \$128 million in consumer spending

and local businesses lose \$137 million in revenue each year because of job vacancies. This is because there isn't enough affordable housing available for these potential households. They do this by relying on a few basic presumptions regarding the number of employees in each family, the wage each worker would make from neighbourhood businesses, and the amount of money each worker would spend locally.

4. Research on China's Subsidized Housing Policy and Its Economic Effects

4.1. Introduction of PRC's Subsidized Housing Policy

Chinese subsidized housing policy for low-income population is categorized mainly into two categories: Cheap rental housing and Public rental housing.

Cheap Rental Housing Policy. From the Ministry of Construction in 1999 "Urban Cheap Rental Housing Management Measures" to now has experienced more than 20 years. The cheap rental housing system is a kind of indemnification housing supply system for the lowest income people in cities and towns. It refers to the government and units performing social security functions in the housing sector, providing low-income housing for permanent urban households with the lowest income. Specifically, the cheap rental housing system refers to the housing production, supply, management system, operation procedures, and rules established by the government to solve housing difficulties for vulnerable urban residents by taking the leading role of rent subsidies and renting in kind. It has social security and social welfare.

The Cheap Rental Housing Policy primarily consists of financial aid and actual rentals. The term "financial subsidy" refers to the practise of local people's governments at or above the county level providing rental housing subsidies to low-income families having trouble finding home in metropolitan areas who apply for and successfully get Cheap Rental Housing. When a low-income family with housing needs applies for Cheap Rental housing, it is considered to be "physically rented" by local people's governments at or above the county level, who then supply accommodation and collect rent in line with set norms. According to the survey, the low-rent housing type is set with one-bedroom, two-bedroom, building area in principle according to the one-bedroom apartment building area of 35 square meters, two-bedroom apartment building area of 45 square meters, three-bedroom apartment building area of 55 square meters.

Cheap rental housing has several features. First, subsidized housing has the property of quasi-public goods. Subsidized housing is social welfare aimed at the specific lowest income group. It is only sold but not rented, with certain exclusivity and non-competition, and belongs to the category of quasi-public goods. The second is government dominance in the construction and supply of cheap rental housing. The urban cheap rental housing system is a social security system that provides housing to the lowest income families in cities and towns. The purpose of institutional innovation is to improve the housing conditions of low-income families who are unable to solve housing problems by themselves through market transactions. The government plays an important role in building and supplying cheap rental housing. Third, cheap rental housing has distinct social security. The purpose of the cheap rental housing system established by the government is to protect the basic housing rights of low-income families in urban areas. Cheap rental housing is guaranteed to the lowest income families in urban areas, and the rent of cheap rental housing must be lower than the market price and cost price due to the restriction of their economic capacity. The fourth is the non-profit operation of cheap rental housing. As low-income housing is provided by the government, the operation of cheap rental housing must reflect the public welfare. In the planning, design, construction, management, maintenance, and other aspects of cheap rental housing, operation managers should not be for the purpose of profit, should try to reduce the cost, and reduce the economic burden of residents.

Public Rental Housing Policy. Public rental housing is defined as housing that is rented out by the government or government-approved organisations to low- and middle-income families who are experiencing housing challenges at market rental rates. The government also provides the families with comparable monthly rental assistance at the same time. Public housing is often held by the public or government institutions and rented to newly hired workers at costs that are below market value or within the means of the renters. The goal is to provide a solution for low-income families that would otherwise be able to afford affordable rental accommodation but are unable to do so due to their family income.

Public rental housing is available for low- and middle-income families who are having trouble finding housing, including those who have passed the qualification audit for affordable housing and price-limited housing but are still looking for a place to live, as well as recent college graduates, migrant workers, and other families with housing difficulties. Public rental housing is an emerging affordable housing and an essential part of affordable housing in China, which can effectively solve the housing difficulties faced by the current "sandwich layer population."

There are several features of public rental housing. The first is government leadership. It is invested and built by the government, and it holds the property right to ensure public attributes. Second, rent concessions. The rent only considers the construction loan interest, housing maintenance costs, and other factors. The rent is not more than 60% of the same location, the same quality of commodity housing rent. Third, extensive coverage. The public rental housing has broken down the urban-rural and internal and external differences. There is no household registration restriction, and all qualified people working in the local area who do not have housing or have housing difficulties can apply for it.

4.2. China's Subsidized Housing Policy's Economics Benefit of Labor Employment in the Economy

China's general economic situation and the impact of subsidized housing on the economy. In a modern market economy, three factors affect economic growth measured by GDP: export demand, investment demand, and consumer demand. Export demand means that the international market needs to accommodate a country's export products for a certain period. Investment demand refers to the investment demand of the country for the construction of basic facilities such as economy, culture, and social development in a certain period. Consumption demand refers to the consumption demand of urban and rural residents in a certain period. Currently, the class distribution in China is pyramid-like, the consumption tendency of the middle and upper-income people has been saturated, and 56.1 percent of the rural population will need some time to consume because of the lack of infrastructure. Therefore, while improving rural infrastructure, stimulating the consumption of urban low-income people is also a priority. The housing security system in China is not perfect, which leads to an increase in the marginal saving tendency of low-income earners and insufficient consumption. Therefore, it is crucial to expand the scope of subsidized housing security and bring the "sandwich population" into the security system to promote economic development.

Further Case Study in Specific locations. This paper does a case study in Beijing Shijingshan District to detail analyze the positive economic benefit of subsidized housing in China.

Yuanyang-Qinshanshui Public Rental Housing. Yuanyang-Qinshanshui Public Rental House is located at the northwest corner of the intersection of Yuquan Road and Lianchi Road in the Shijingshan District. When you walk near Lianchi Bridge on Lianchi Road from east to west, you can see the horizontal yellow-brown blocks spliced together into a "mountain" -shaped building, which is Yuanyang-Qinshanshui Public Rental House with its main apartment design oriented to the east and west. Due to the total construction area of nearly 40,000 square meters, the number of building floors is 12 to 24. In mid-January 2012, the first batch of families from the Haidian District moved

into the Yuanyang-Qinshanshui public rental housing community through an open lottery, becoming the first batch of public rental housing families in Beijing.

Initially, there were relatively few local shops, only a big public park and some office buildings, and the commercial atmosphere was relatively weak. After more citizens moved into the public rental housing, the local labor market in Shijingshan District in Beijing improved significantly.

When the government constructed those Public Rental housing, they hired many building workers, directly providing locals with thousands of jobs. Besides, they bought large quantities of building materials, including steel, concrete, and glass, promoting the development of secondary industry and providing plenty of jobs in Shijingshan District's traditional construction material factory. Due to the population provided by public rental housing, the secondary industry in the region has grown prominently, increasing from 127,820 million RMB in 2012 to 146,140 million RMB in 2016.

Beijing Taiwan Theme Cultural Commercial Street (BTTCC) is near the Yuanyang-Qinshanshui Public Rental Housing and is one of the local leading entertainment places. With the infusion of the new labor, more kinds of restaurants, coffee shops, and fashion bakeries are on the street. As businesses thrive, more people move here, providing more demand. In turn, more enterprises are attracted to invest -- set up various kinds of business, thus providing more jobs for locals. With the virtuous growth in the labor market, the annual GDP of Shijingshan District increased continuously for five consecutive years, both tertiary and secondary industries. Due to the population provided by public rental housing and its geographical location, the tertiary industry in the region has grown most significantly, increasing from 210,390 million RMB in 2012 to 336,000 million RMB in 2016.

Table 2: Shijingshan District GDP and GDP of tertiary and secondary industry.

	Shijingshan District GDP (100 million RMB)	Shijingshan District GDP of tertiary industry (100 million RMB)	Shijingshan District GDP of secondary industry (100 million RMB)
2016	482.14	336.00	146.14
2015	430.16	288.24	141.92
2014	400.91	264.77	136.14
2013	365.19	231.88	133.32
2012	338.21	210.39	127.82

Source: <https://gdp.gotohui.com/data-609>

5. Conclusion

Combining the result of the literature research and case study in the U.S. and China, the implementation of subsidized housing significantly increases employment and spending in the surrounding secondary and tertiary economy in both China and the U.S. The practices of reasonable subsidized housing policy, whether in the short-term or long-term, provide many low-income people jobs and gives them more stable houses to live in. In conclusion, the subsidized housing policy has a significant positive effect on economic growth and social stability. Therefore, both in developed and developing countries, local and central governments should promote the implementation of subsidized housing policies.

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Appendix

- i. The Regional Input-Output Modeling System (RIMS II), the Impact Analysis for Planning (IMPLAN) model, and the exclusive model created by the National Association of Home Builders are the most popular ones.
- ii. All forms of economic activity are contained in the total economic production. The cost of materials and the added value of these materials are used as measures (for example, wages paid to workers, profits, interest, and indirect taxes). See Hangen and Northrup for a detailed explanation of the output unique to the IMPLAN model (2010). Total sales resulting from the initial capital investment, including expenditures themselves, can also be included in the definition of total economic production (Minnesota Housing Finance Agency, 2009).
- iii. Since older adults are more willing to spend their income locally, especially given Medicare payments for health care services, the ongoing employment impact of older LIHTC buildings is larger than that of home LIHTC properties and is the same as estimated for market-price multifamily properties (National Association of Home Builders 2010,2009a).
- iv. A government programme called HOPE VI provides funding for the renovation of underutilised public housing.
- v. Zielenbach, Voith and Mariano (2010) contrasted the expected consequences of operating public housing before the HOPE VI renovation with the ongoing economic impact of operating subsidized apartments in the renovated building. The continued influence of the rebuilding process on the economy is weakly negative, as federal spending on HOPE VI operations is lower post-reconstruction than before.