The antipoverty effect of public rental housing in Hong Kong

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A B S T R A C T

This paper examines the antipoverty effect of public rental housing (PRH) in Hong Kong based on a comparison of estimated imputed rents from PRH through regression-based and stratified rental equivalence methods. Empirical analysis shows that stratified equivalence method tended to generate a larger effect of poverty rate reduction and smaller effect of poverty gap reduction than regression-based method. The study identified a trend towards upwardly biased estimate of public imputed rent in the implementation of stratified equivalence method in Hong Kong where limited strata was available for the estimation. The development of antipoverty measures may be misguided if the stratified equivalence method is used in its current form in Hong Kong. The paper suggests that the choice of estimation method has important implications for evaluating the pros and cons of PRH from both poverty reduction and budgetary perspectives.

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Introduction

Poverty has been widely recognized as one of the biggest challenges confronting human development in developed and developing economies (OECD, 2008). Although the world witnessed an unprecedented pace of poverty reduction over the last decades, fighting extreme poverty and promoting equitable development continue to remain at the top of the government agenda in both Global North and South. In addition to tax and cash transfer programs as a tool for reducing poverty, public policies related to education, health care and housing have attracted increasing attention in poverty and distributional studies, not only because these in-kind transfers constitute a significant and non-negligible component of non-cash income accruing to the resources of individuals or families, but also because the redistributional effect of in-kind income may not necessarily be the same as that of cash transfer, which in turn has important implications for the efficient targeting of resources towards poverty mitigation (Paulus, Sutherland, & Tsakloglou, 2010).

Among different in-kind public transfers, public housing is in particular noteworthy as it is largely targeted at low-income households with prominent housing needs and therefore tends to have an equalizing effect on income distribution. A growing body of research has been accumulated recently to investigate the relationship between housing benefits and disposable income as well as their impacts on economic well-being (Frick & Grabka, 2003; Frick, Grabka, Smeeding, & Tsakloglou, 2010; Smeeding et al., 1993; Yates, 1994). It has been recognized in the existing literature that cash incomes alone are not sufficient to fully capture the well-being of individuals and households without complemented by various non-cash incomes, including imputed rent. This paper aims to extend the literature beyond its dominant empirical focus on European and North American countries through a case study of the anti-poverty effect of public rental housing in Hong Kong, Asia’s global city with a sizable public housing sector and equally prominent group of poor people (Goodstadt, 2013).

Methodologically, how to calculate the non-cash income from publicly provided housing is an empirical question subject to intense debate in comparative social and policy studies. Scholarly analysis has been conducted to estimate the amount of imputed rent using such different methods as rental equivalence method, user cost method, and self-assessment approach (Saunders et al., 1992; Frick, Goebel, et al., 2007). Substantive research evidence on the impact of imputed rent has suggested that the empirical findings are susceptible to the method chosen and the way in which the method is implemented in concrete context (Frick & Grabka, 2003; Frick, Goebel, et al., 2007). Such methodological concern thus entails a contrast of results on the measurement of imputed rent from different methods in order to derive a robust assessment of the impact of public housing on poverty reduction.

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Against the above research background, this paper has two major objectives. One is to assess the antipoverty effect of PRH in 2001 and 2011 by comparing the results from two methods, namely regression-based rental equivalence and stratified rental equivalence method, in the Hong Kong context. The other objective is to evaluate the costs and benefits of the public housing programs vs. cash benefit programs regarding their poverty-reduction effects in Hong Kong. The paper is organized as follows. The next section provides a brief overview of public housing program and poverty conditions in Hong Kong. This is then followed by a discussion of empirical framework employed in this paper. After a presentation of empirical findings about the anti-poverty effect of PRH, the final section concludes the discussion.

**Hong Kong: poverty in the midst of affluence**

As one of the wealthiest places in the world, Hong Kong was often portrayed as a successful case of late developing economies managing to break out of poverty trap. The myth about Hong Kong's economic well-being had been dispelled by the recent release of “Hong Kong Poverty Situation Report 2012” by the reinstated Commission on Poverty of Hong Kong Special Administrative Region (HKSAR) Government, which acknowledged officially for the first time that 1.31 million of the city's citizens, accounting for 19.6% of the city's total population, could be classified as poor (CoP, 2012, 2013a, 2013b, 2013c). The report estimated that HK$28.8 billion\(^1\) in total and HK$4,400 per month per household would be needed in order to lift all poor households out of poverty (CoP, 2012, 2013a, 2013b, 2013c). If various recurrent cash transfer programs (e.g. CSSA, OAA, OALA, DA) was included, poor population and poverty rate could be reduced to 1.02 million and 15.2% respectively (CoP, 2012, 2013a, 2013b, 2013c). Such assessment of the incidence and change of poverty was made on the basis of a relative poverty line recently set at half of the median household income in Hong Kong. What is more contentious and less explicit in the examination of poverty condition in Hong Kong is the estimation of imputed rent from public rental housing (PRH hereafter), the share of which in total number of quarters in Hong Kong is considerably higher than that in many other developed economies. Previous studies of PRH in Hong Kong have examined its role in income inequality (Lui, 2007) and internal mobility (Lui & Suen, 2011). Relatively little has been done to examine specifically the poverty-alleviation effect of PRH in Hong Kong.

PRH has been described as one of the largest welfare programs in Hong Kong (Lee, 2010). After more than five decades of development, by the end of 2011, 30% (2.1 million) of the Hong Kong population lived in PRH (Hong Kong SAR Government, 2011). The objective of PRH is to help low-income households gain access to affordable housing. To prevent high take-up of housing subsidies, the eligibility criteria for PRH include means testing and a residency requirement; the monthly income and asset limits for a four-person household in 2012 were HK$20,710 and HK$418,999, respectively, and at least half the members of the family must have resided in Hong Kong for seven years. Nevertheless, due to the high cost of housing in Hong Kong, the demand for PRH remains strong. In 2012, there were about 189,000 qualified applicants on the waiting list. The average waiting time to be allocated a PRH flat in the 2011/2012 financial year was 2.6 years (Hong Kong Housing Authority, 2013).

Since households living in PRH are paying below-market rent, they are actually receiving in-kind income from governmental welfare expenditure in the form of subsidized housing. If this is included in the calculation of PRH tenants' household income, the pattern of income distribution is likely to be altered. The estimation of imputed rent from PRH can also facilitate the comparison of public housing in-kind benefits vs. cash benefits provided by the government. During the period 2001 to 2011, the average annual expenditure on PRH was HK$18.2 billion (Census and Statistics Department, 2006, 2012). Given the large amount of government spending on PRH and the high proportion of the Hong Kong population benefiting from it, it is imperative that that the impact of PRH be evaluated from both poverty reduction and budgetary perspectives.

**Research methodology**

To approach this task, the imputed rent as the cash value of Government subsidies to PRH tenants has to be estimated. According to the definition of imputed rent, the potential beneficiaries of imputed rent include owner-occupiers and tenants who do not report paying full rent. Given that the aim of this study is to evaluate the anti-poverty effects of PRH, this study will focus mainly on the imputed rent of PRH, although to attain this objective involves the calculation of private imputed rent for owner-occupiers in empirical analysis.

Different approaches, such as rental equivalence method, user cost method (Garnier & Verbrugge, 2009; Henley, 2000) and self-assessment approach (Frick, Goebel, et al., 2007; Junitto & Reijo, 2010), have been proposed in the existing studies. The most commonly utilized approach is the rental equivalence or opportunity cost method which is accordingly adopted here (Frick & Grabka, 2001; Frick et al., 2010; Frick, Grabka, & Groh-Samberg, 2007; Henley, 2000; Lillard, 2001). Rental equivalence approach estimates the market rent that homeowner or below-market rate tenants should pay if they have to rent their residences at full price in private rental market. It can be calculated using two methods: regression-based rental equivalence and stratified rental equivalence methods. The former one utilize multivariate regression models to account for variation of rental prices in the private market, while the latter one estimates the variations in rental prices by a stratification of data on the rent paid by actual tenants either within the same dataset or as given in external rental statistics. For the regression-based rental equivalence method, a wide range of characteristics of the dwelling will be used as independent variables to construct a hedonic regression model to estimate coefficients for private tenants. Similar coefficients are then extended to public housing tenants to estimate the normal market rent of their residence if their rental payments were not subsidized. For the stratified rental equivalence method, size of housing unit, year of construction, and regional information are the most popularly used stratification variables employed to assign public housing units to relevant strata and the average private market rent in each stratum is utilized to estimate the equivalent market rent of PRH unit. The stratified rental equivalence method has been used by the Poverty Commission in Hong Kong to estimate the imputed rent using data available from the Department of Rating and Valuation. It should be pointed out that both regression-based and stratified rental equivalence methods do not differ in concept but in terms of how they account for variation in rental prices in the private market. If stratified rental equivalence method is used with sufficiently big sample size and the most relevant characteristics, the two methods should logically produce similar results (Frick & Grabka, 2001; Frick et al., 2010; Frick, Grabka, et al., 2007; Henley, 2000; Lillard, 2001). The concrete outcomes, of course, depend on how they are applied empirically in the Hong Kong context.

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\(^{1}\) The HK dollar is linked to the US dollar under the linked exchange rate system with the exchange rate as USD 1 to HKD 7.75–7.85.