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Housing affordability: Beyond the income and price terms, using China as a case study

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ABSTRACT

A comprehensive understanding of housing affordability is essential for developing policies to deal with deteriorating housing affordability observed in major market economies in recent years. This paper proposes a broader housing appropriateness concept with four dimensions – affordability, accessibility, amenity and adequacy – which goes beyond the price and income terms widely used in research to measure housing affordability. It puts forward that trade-offs may occur in these dimensions, resulting in dynamic shifts of housing problems from one dimension to another. Then a case study in Wuhan, China is applied to exemplify how trade-offs happen in specific national contexts. The results show trade-offs between affordability and adequacy among income-constrained consumers and between adequacy and affordability as well as accessibility for an affordable housing policy. These findings suggest that a more dynamic and holistic view is needed when evaluating housing affordability problems and developing policy strategies accordingly.

Introduction

Housing has long been an important target of public policies in many societies. This involvement stems from a public reaction to the problems of poor housing conditions in the late 19th century and early 20th century in European countries which were closely associated with serious public health problems arising from insanitary conditions and overcrowding (Smith, Whysall, & Beuvrin, 1986). This concern was expressed through the introduction of building codes and slum clearance programmes that dated from this time.

In addition to the issue of housing quality, there was a mounting need to increase housing supply to meet the twin impacts of war damage both during the First and Second World Wars as well as population growth (Wendt, 1962). A notable policy response to war time and post-war housing shortage was the imposition of housing price and rent ceilings in countries such as Britain, France and America (Jenkins, 2009), to ensure that housing remained affordable to lower income households.

In more recent years when the exchange value of housing has been stressed more than the use value, the focus of discussion has shifted more towards housing affordability problems. This has come to the fore in the last two decades which have seen housing prices and rents increasing at a greater pace than in previous years. Consumers, especially low-income consumers, find it harder to access appropriate and adequate housing at an affordable cost in countries including Australia, Canada and China (Beer, Kearins, & Pieters, 2007; Chen, Hao, & Stephens, 2010; Purdy, 2003).

Governments have intervened to deal with the housing affordability problem through various policy strategies. However, the housing affordability problem seems to be embedded in the operation of a market driven housing system and has proved difficult to solve under prevailing policy settings. As a result, housing affordability continues to be one of the key themes of contemporary housing studies.

China, too, is now facing the problem of deteriorating housing affordability following the extensive housing reforms 35 years ago that transformed the housing system from an administrative allocation model to a model based on market mechanisms. Despite strong government commitment to deal with the housing affordability problem (Wang & Murie, 2011), this issue has produced major dilemmas for consumers and policy makers alike. Therefore, to inform further policy reforms in this area, this study explores the concept of housing affordability as it provides the basis for understanding and measuring housing affordability problems. Following a broad discussion on the housing affordability concept, this research

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uses a case study in Wuhan, China, to exemplify how consumers may respond to unaffordable housing costs and how housing policies may affect different dimensions of housing consumption.

Literature review: the concept of housing affordability

Housing affordability in income and price terms – the 'ratio' approach and the 'residual income' method

The 'ratio' approach

The most common method to understand and evaluate housing affordability has been the ratio approach, which directly compares housing costs to household income. This approach originated from the 19th century's 'rule of thumb' principle (Thalmann, 1999), which denotes that a week's income should be sufficient to pay for a month's rent.

Different housing expenditure-to-income ratio criteria have been applied in different countries and studies to judge housing affordability problems. Much Australian research has applied the 30/40 rule (housing costs should not exceed 30% of the bottom 40% income strata household's income) in identifying the development of the housing affordability problem in that country (Yates & Gabriel, 2006). In America, the 25%, 30%, 40%, and 50% thresholds have all been used at different times (Kutty, 2005). In Canada, under the 'core housing need' standard, a household that pays more than 30% of its income on housing and its income is insufficient to rent a suitable and adequate housing can be perceived as having a housing affordability problem (Gabriel, Jacobs, Arthurson, Burke, & Yates, 2005).

Another application of the ratio approach is to calculate the housing price to income ratio (PIR) to measure the affordability and accessibility of home ownership (Chen et al., 2010). One frequently quoted standard is the World Bank criterion, which proposes an acceptable PIR of between 3 and 6 (Lau & Li, 2006).

Relying on such measures of housing affordability has become both an advantage and a disadvantage where the ratio approach is concerned. While successfully making the calculation simple and straightforward, this method falls short of accurately depicting the housing affordability situations of different households. The ratio standard was established on the basis of median housing price and the median household income. It disregards the income variations among different classes and fails to consider the adequacy of income left for non-housing expenditure which varies among different households (Feldman, 2002; Linneman & Megbolugbe, 1992). From this perspective, the ratio measure is an arbitrary way of identifying the housing affordability problem (Hulchanski, 1995).

Consequently, groups identified as confronted with housing affordability problems based on the ratio approach might not be classed as such if other methods of measuring affordability were used. The residual income method discussed next will show how divergence arises when a different method is used.

The 'residual income' method and concept of housing adequacy

Of the drawbacks mentioned in the ratio approach, non-housing expenditures have been most thoroughly accounted for in the residual income method, which considers the sufficiency of household income to meet both housing and essential non-housing costs such as food and clothing (Bramley, 2012; Chaplin & Freeman, 1999). The most notable research that encompasses the 'residual' idea is Stone's (1993) shelter poverty concept. This method proposes that, if there is not a housing affordability problem, household income should be able to fulfil the non-housing needs after housing costs are deducted (Bourassa, 1996). Empirical evidences from the UK and Australian housing markets all show that housing affordability is subject to changes in household size and income: larger and lower income households will be worse off than a conventional ratio standard would indicate, since non-housing costs may take a higher share of household income in this case (Stone, 2006a; Stone, Burke, & Ralston, 2011).

While the residual income measure is thought to be more reasonable because it takes account of non-housing needs, its applicability is compromised by many issues. First, as Stone (2006b) has pointed out, defining necessary non-housing costs is one of the principal issues for establishing the residual income standard. There are various non-housing cost standards that have been applied in the literature (Bradbury, Rossiter, & Vipond, 1987; Kutty, 2005). Consequently, the nature and composition of groups perceived as having a housing affordability problem diverge in different research.

Furthermore, as the residual income measure puts fulfilling housing needs before reaching a conclusion on housing affordability, the exact meanings of housing need should also be clarified beforehand. For instance, households would be considered as having a housing affordability problem if they lived in over-crowded housing even if they did not spend excessively on housing (Stone et al., 2011).

The two main measurements discussed above provide an insight into understanding dimensions of housing affordability, mostly in income and price terms. While the ratio approach is simple and straightforward, it is considered inadequate due to a tendency to overlook non-housing expenditures which relate in particular to household size. The residual income method brings into focus the response of income-constrained households in adjusting their housing expenditures to suit their needs for housing consumption and non-housing items. Understanding how the housing affordability problem affects housing choice enables a broader interpretation of the issue and is thus critical to housing policy making and implementation. Therefore, the next section will explore the trade-offs in various aspects of housing consumption and propose a broader concept of housing affordability which is illustrated through four dimensions of housing appropriateness.

Dimensions of housing appropriateness

Failing to fulfil a household's housing needs at an affordable cost can have significant implications for consumers as they may have to adjust the way they consume housing and non-housing goods. Consumers may simply choose to spend a high proportion of their income on housing and compromise their aspirations on other non-housing needs. Or alternatively, they may adjust their housing choice to reduce their housing costs and achieve a balance between housing needs and non-housing needs. This might be achieved through trade-offs between housing needs in different aspects. In housing research, the three most frequently discussed arenas where the trade-offs may occur are accessibility, amenity and adequacy (Burke et al., 2007). These three indicators, together with housing affordability, are referred to as the four dimensions of housing appropriateness in this research.

Housing accessibility

Housing accessibility generally refers to the extent to which the consumer has access to essential facilities (i.e. work place, school, hospital, etc.) that characterise their daily lives. This indicator is mainly evaluated through the amount of time and money spent on travel between these facilities. Consideration of housing accessibility comes from the spatially fixed attribute of housing and there is a wealth of research that has illustrated the relationship between housing cost and the location of housing such as Alonso (1964) and Bassett & Short (1980: 30-1). A general conclusion is that housing