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The chain effects of property-led redevelopment in Shenzhen: Price-shadowing and indirect displacement

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ABSTRACT

Many Chinese cities are undergoing large-scale property-led redevelopment, which can result in both direct and indirect residential displacement. Although a number of studies on direct displacement have been carried out, insights into the mechanisms underlying indirect displacement are lacking. The present research investigated property-led redevelopment in Shenzhen and the induced chain effects of price-shadowing and indirect residential displacement. It was found that property-led urban redevelopment exhibits strong effects of price-shadowing on adjacent housing prices by creating property hot spots and bringing about changes in the housing market. A multilevel hedonic model quantitatively confirmed the price-shadowing effect of urban redevelopment, by showing that perceived or actual redevelopment increases housing prices in the vicinity. Interviews with residents of neighbourhoods adjacent to three typical redevelopment projects revealed that redevelopment-induced indirect displacement is closely related to rising property values and that residents suffer from both exclusionary displacement and displacement pressure. Residential displacement in China has gone beyond forced eviction and has taken on more indirect and latent forms. Property-led urban redevelopment is a key catalyst for this.

1. Introduction

For decades, urban redevelopment policies have been implemented in many countries because the continuous processes of industrialization, urbanization and deindustrialization have left a legacy of unused and/or underused sites in urban areas (de Sousa, 2008; Liu, van Oort, Geertman, & Lin, 2014). Both the USA and western European countries have introduced regulations governing the redevelopment of brownfield sites and deprived neighbourhoods (Atkinson, 2008; Li, 2011a). In China, urban redevelopment has also received increasing attention (Leaf, 1995). In 2013, the Chinese central government issued the *Special Plan for the Revitalization of Old Industrial-Base Cities* (2013 – 2022). One of the central focuses of this plan is the transformation of 'problematic' brownfield sites. More recently (February 2016), the Chinese government released the "*Opinions of the Central Committee of the Communist Party of China and the State Council on Further Strengthening the Administration of Urban Planning and Development*", in which it is stated that 'by 2020, the transformation and renovation of existing shantytowns, villages in the city [urban villages] and dilapidated houses in cities will be complete.' It is foreseeable that booming urban redevelopment will have enormous social impacts on urban areas in various forms of direct or indirect residential displacement. If direct displacement research places more emphasis on 'the spatial fact' of displacement, indirect displacement research is more concerned with the 'loss of sense of place' (Davidson & Lees, 2010, p. 403). Although indirect displacement is less noticeable than direct displacement, it has just as many negative impacts on residents and thus urgently needs the attention of scholars and policymakers. However, China's urban restructuring processes are characterized by property-led redevelopment and strong coalitions between local governments and developers to capture economic benefits (He & Wu, 2005). The main focus has been on the economic outcomes of urban redevelopment projects, whereas the induced residential displacement, especially indirect displacement, has received scant attention.

Similarly, in the academic literature, indirect displacement remains under-researched (Davidson, 2008). Studies on gentrification often fail to recognize indirect displacement as a serious consequence, and thus legitimize the implementation of pro-gentrification policies (Slater, 2006, 2009). Gentrification processes are, in many cases driven by urban redevelopment activities (Atkinson, 2004; Newman & Wyly, 2006). Urban redevelopment, and especially property-led redevelopment, can have price-shadowing effect on the value of adjacent

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properties, which further causes indirect residential displacement. Nevertheless, little knowledge is available on either the causes or the consequences of indirect displacement (Slater, 2006, 2009). It has been noted by many scholars (e.g. Slater, 2009) that as a result of the under-theorisation of indirect displacement, the price-shadowing of redevelopment activities is very often celebrated as an economic benefit, rather than seen as one of the main driving forces behind social dispossession. Moreover, this spill-over effect of urban redevelopment on housing prices/rents is very often taken for granted in the displacement literature and is rarely quantitatively investigated (Atkinson, 2002). This is especially the case with respect to China, where indirect displacement caused by large-scale property-centred redevelopment is largely absent from both academic and public discourses.

To bridge these gaps, the present research explored the chain effects of property-led redevelopment. The remainder of this article is structured as follows. In Section 2, we review the existing literature on indirect displacement and property-led redevelopment in China. In Section 3, we briefly introduce the study area, research methods and data. After that, in Section 4, we turn to the empirical study in Shenzhen and provide the background to and general characteristics of property-led redevelopment. Then, in Section 5, we discuss the chain effects of property-led redevelopment on the basis of both quantitative and qualitative methods. We present our main findings and policy implications in Section 6.

2. Literature review

2.1. Gentrification and indirect displacement

Residential displacement has been widely discussed in the gentrification literature. Grier and Grier (1978, p. 8) conceptualize displacement as:

> Displacement occurs when any household is forced to move from its residence by conditions that affect the dwelling or its immediate surroundings, and that: 1) are beyond the household's reasonable ability to control or prevent; 2) occur despite the household's having met all previously imposed conditions of occupancy; and 3) make continued occupancy by that household impossible, hazardous, or unaffordable.

Residential displacement can be caused either directly or indirectly. Building upon the Griers' widely accepted conceptualization of direct displacement, Marcuse (1985) proposed two types of indirect displacement, namely displacement pressure and exclusionary displacement. Displacement pressure refers to households' subjective fear of the possibility of displacement (Doucet, 2009). It emphasizes the psychological and emotional dimensions of displacement, which is experienced by residents although they are physically inhabiting the neighbourhood (Mazer & Rankin, 2011):

> When a family sees the neighbourhood around it changing dramatically, when their friends are leaving the neighbourhood, when the stores they patronise are liquidating and new stores for other clientele are taking their places, and when changes in public facilities, in transportation patterns, and in support services all clearly are making the area less and less livable, then the pressure of displacement already is severe. Its actuality is only a matter of time. Families living under these circumstances may move as soon as they can, rather than wait for the inevitable; nonetheless they are displaced (Marcuse, 1985, p. 207).

Exclusionary displacement is closely related with the dynamics in housing markets (Millard-Ball, 2002; Twigge-Molecey, 2014). It occurs when households cannot access dwellings because they have been gentrified:

> When one household vacates a housing unit voluntarily and that unit is then gentrified or abandoned so that another similar household is prevented from moving in, the number of units available to the second household in that housing market is reduced. The second household, therefore, is excluded from living where it would otherwise have lived (Marcuse, 1985, p. 206).

As noted by Bernt and Holm (2009), exclusionary displacement and displacement pressure focus more on changes at the neighbourhood level.

Unlike direct displacement, indirect displacement does not involve households being forcefully evicted from their current dwellings and is thus less visible in affected areas. In gentrification literature, there are ongoing debates on to what extent gentrification harms the poor, since direct displacement is proved to be limited or even absent in many cases (Hamnett and Whitelegg, 2007). For instance, in the UK, urban redevelopment often takes place on brownfield sites or on vacant or abandoned land, and this form of new-build gentrification does not lead to the direct displacement of residents (Davidson & Lees, 2010). In a longitudinal study in London, Hamnett (2003) argued that the slow reduction of the lower-income class in many inner-city neighbourhoods is a result of the shrinking working class population. In other words, what has often been interpreted as displacement is arguably a replacement process. Similarly, Freeman (2005) doubted the immediate link between gentrification and displacement, and stated that there is possibly gentrification without widespread displacement.

Hamnett and Freeman represent a body of knowledge (see others for instance: Vigdor, Massey, & Rivlin, 2002; Butler, 2007; Butler, Hamnett, & Ramsden, 2008) that, in Slater's (2009) words, “celebrate gentrification and/or deny displacement” (p. 294). Nevertheless, Slater (2009) pointed out that absence of direct displacement does not necessarily imply absence of displacement in general. For instance, low mobility among poor residents in gentrifying neighbourhoods, which is viewed as solid evidence of ‘absence of displacement’ in many studies, is actually a form of exclusionary displacement as conceptualized by Marcuse. Slater (2009) therefore strongly highlighted the importance of turning to Marcuse's conceptualization of indirect displacement. Indirect displacement provides new insights into the overall consequences of gentrification, aside from widely researched direct forms of displacement. As warned by Millard-Ball (2002), the impacts of gentrification can be significantly underestimated if indirect or ‘invisible’ forms of displacement are left out from the radar of researchers.

Davidson and Lees's (2005) research on new-build gentrification and displacement on the banks of the Thames in London is one of the few studies on indirect displacement. The authors presented qualitative evidence that long-term residents felt a growing sense of disconnection and displacement from their neighbourhood, with reduced accessibility to basic facilities. From the perspective of everyday life experience, Mazer and Rankin's (2011) research in Toronto's gentrifying neighbourhoods revealed substantial displacement pressure among local residents, caused by rising rents, the disintegration of community networks, a reduction in affordable services, and increasing hostility from the authorities and middle-class incomers. Similarly, linking to Marcuse's (1985) concept of displacement pressure, Stabrowski (2014) conceptualized ‘everyday displacement’, whereby worsening living conditions, a loss of sense of security and restricted access to local resources exert pressure on residents. Sakizlioğlu (2014) had spent five years observing a neighbourhood in Istanbul to investigate the residents' experiences of displacement threat before actual physical displacement. Residents experienced increasing pressure of displacement since housing prices in the area have been going up ever since the announcement of the renewal project. Reduced community livability pushed remaining residents to move out even before the implementation of actual demolition and eviction. More recently, Shaw and Hagemans's (2015) observations in a gentrifying neighbourhood in

Melbourne showed that low-income residents who managed to stay put experience a strong sense of loss of place that comes from the closure of low-cost shops, relocation of friends, and loss of meeting places. Overall, the small body of existing empirical research on indirect displacement reveals that indirect displacement can have serious consequences: when rents soar, friends and neighbours leave, and affordable services become unaffordable, households are already excluded in a variety of ways and experience a constant threat before the actual displacement (Marcuse, 1985).

2.2. Property-led redevelopment, price-shadowing and indirect displacement

In developing countries, gentrification process is, in many cases, driven by urban redevelopment activities. In this study, we limit the scope to property-led redevelopment in China and the induced indirect displacement. In existing research on indirect displacement reviewed above, it is indicated that among the multifaceted driving forces behind indirect displacement, the main impetus is still economic-oriented, namely the price-shadowing effect: urban redevelopment practices not only cause a sudden change in the housing market but also create property hot spots[1] that change the image, cultural value and desirability of the area (Lambert & Boddy, 2002). These factors together contribute to housing price increases in adjacent areas (Davidson, 2008; Rérat, Söderström, & Piguet, 2010). However, this issue is rarely quantitatively researched. As noted by Atkinson (2002), in the gentrification/displacement literature, in contrast to qualitative evidence of experiences of indirect displacement, the inherent cause of this process – namely the correlation between urban redevelopment activities and roaring housing prices/rents – is very often taken for granted by researchers, and the 'price increases are mentioned as a logical rather than researched outcome (p. 14)'. It is also noted that the price-shadowing of redevelopment is more pronounced for projects that are driven by real estate development, that is, property-led redevelopment. This brings us directly to the Chinese case.

China's urban restructuring processes in the post-reform era (i.e. since 1978) are characterized by property-led redevelopment (He & Wu, 2005). The concept of property-led redevelopment, which originated in the UK, is a redevelopment approach that relies on private-sector real estate development as the primary driving force (Turok, 1992). This approach is increasingly applied in the redevelopment strategies of many Chinese cities. Because local governments are strongly motivated to restructure their inner cities, and real estate developers are eager to reap profits by taking advantage of favourable policies, a strategic alliance is formed between the two parties (He & Wu, 2007). Research findings from western countries have already shown that property-led redevelopment can not only substantially shape rebuilt urban areas in terms of restructuring urban spaces and producing urban landscapes, but also spill over into surrounding neighbourhoods, which is manifested most evidently in surging housing prices (Vicario & Monje, 2003). Nevertheless, in China the current research focus is mainly on the social consequences of urban redevelopment for directly displaced residents or their legitimate right to decent compensation (He & Wu, 2005, 2007). Insights into the mechanisms underlying indirect displacement are generally lacking. The situation is similar in the public discourses: social conflicts as a consequence of direct eviction have attracted considerable public attention and have even resulted in criticism. In contrast, indirect displacement is largely accepted as or legitimated by the 'rule of the market'. With the prevalence of property-led redevelopment in many Chinese cities, this phenomenon deserves further exploration.

A review of the displacement literature revealed several research gaps. First, indirect displacement has been under-researched. This has caused the underestimation of the social consequences of gentrification process, which is in many cases driven by large-scale urban redevelopment activities. Second, the very few studies there are on indirect displacement have a disproportionate focus on qualitatively describing experiences of indirect displacement, whereas the relationship between urban redevelopment and rising housing prices is often not seriously researched. Third, compared with western countries, indirect displacement in China is severely under-researched. China's urban restructuring processes are characterized by property-led redevelopment (He & Wu, 2005) and the main focus is on the economic outcomes of urban redevelopment projects. Therefore, insights into the social effects of urban redevelopment are urgently needed in China. To bridge these research gaps, we adopted a more robust approach by first using quantitative methods to identify the relationship between urban redevelopment activities and housing prices, and then presenting qualitative evidence of indirect displacement in China.

3. Methodology and data

3.1. Study area

Shenzhen city, in southeast China, was selected as the study area. The city has grown rapidly since China's central government designated it as a special economic zone (SEZ) in 1979: the area of urban built-up land increased from $< 3\ km^2$ in 1979[2] to $890\ km^2$ in 2014 (Statistics Bureau of Shenzhen Municipality, 2014). Shenzhen is also famous for its numerous 'villages in the city' (ViCs). After three decades of rapid urbanization, the city encountered an unprecedented development bottleneck: a shortage of land resources. Shenzhen therefore became a pioneer in the practice of urban redevelopment: it was one of the first cities in China to pursue urban renewal strategies, and it developed the country's first master plan for the redevelopment of ViCs (Chung, 2009; Lai & Zhang, 2015). As such, the process of residential displacement caused by urban redevelopment projects is more prominent in Shenzhen than in other cities in China.

In Shenzhen's *Urban Renewal Measures* (2009), the concept of the urban renewal unit (URU) was first used as the basic spatial unit for urban redevelopment (Lai & Zhang, 2015). To investigate the price-shadowing effect of urban redevelopment, we collected the information on URUs issued by the Urban Planning Land and Resources Commission of Shenzhen Municipality (Shenzhen UPLRC) in 2012 and 2013. A total of 101 URUs were entered into our database for quantitative research (Fig. 1).

To investigate the experiences of indirect displacement associated with rising housing prices/rents, residents of ViCs adjacent to three typical redevelopment projects were interviewed. In Fig. 2, the dark grey areas have been demolished, and the white areas are the neighbourhoods in which we conducted our interviews. We selected these three projects because they led to the creation of prominent property hot spots and the dispersal of large numbers of residents. The price shadowing effect of these projects is thus easier to observe.

The Dachong, Gangxia and Huangbeiling redevelopment projects are typical property-led projects in Shenzhen, in terms of their geographically central locations, the scale of reconstruction, their profit-oriented nature, and the widespread interest from the public and the media.

Dachong village is in Nanshan district. In 2011, this project was the largest redevelopment project in Shenzhen: 1500 old buildings were demolished and > 70,000 migrants displaced. In this area, a 300-m high office building, a 5-star hotel, two 4-star hotels, a shopping mall and numerous apartments will be built (Li, 2011b).

Gangxia village is the only ViC located within Shenzhen's CBD in the

[1] Urban areas with intensive property investment/development activities and usually high property values.

[2] Government news report: http://www.mlr.gov.cn/xwdt/jrxw/201012/t20101221_806581_3.htm (last visited 10/02/2017)

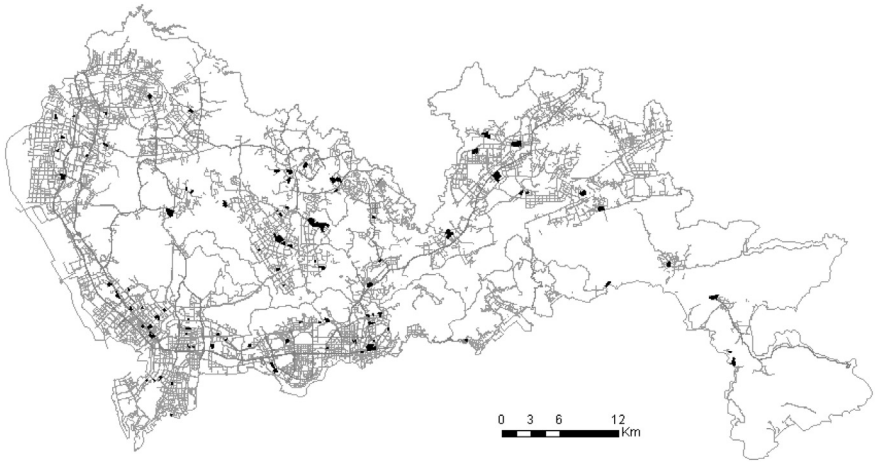

Fig. 1. Spatial distribution of 101 urban redevelopment sites.

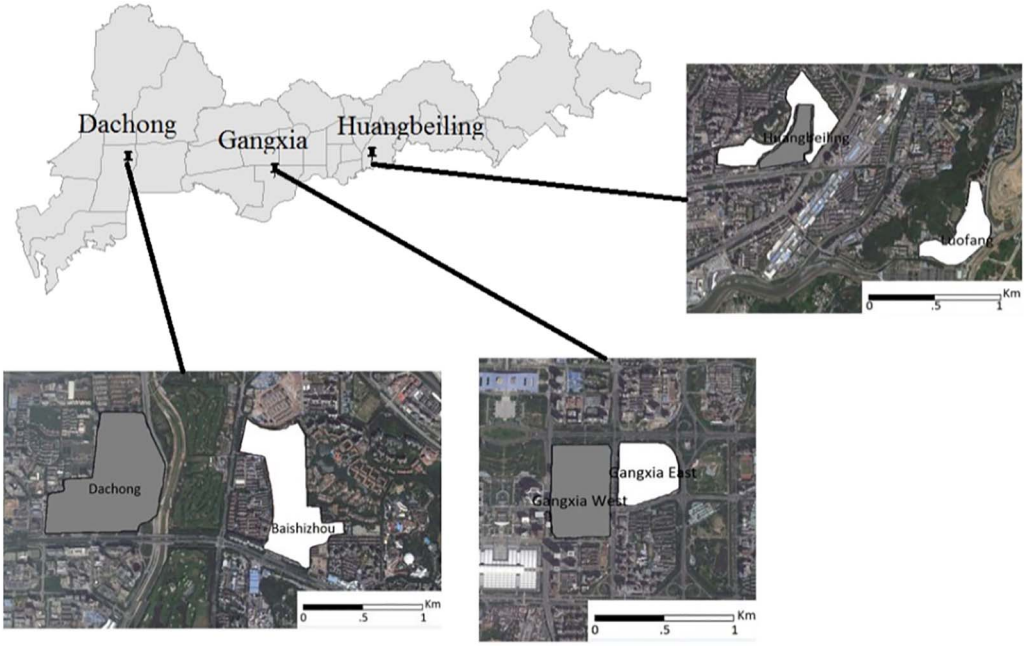

Fig. 2. Location of three urban redevelopment projects and the interviewed neighbourhoods.

Futian district. Therefore, the effect of property hot spots is likely to be more significant than it is for other villages. It consists of two parts: Gangxia West (Heyuan area) and Gangxia East (Louyuan area). Gangxia West has already been demolished, and a new multifunctional district, with shopping malls, apartments and office spaces, will be constructed. It is estimated that the demolition of Gangxia West involved a total area of 0.15 km^2 and the displacement of nearly 100,000 migrants (Li, 2010).

Huangbeiling village is the largest ViC in Luohu district. The project consists of two stages. During the first stage, the central part of the village (0.40 km^2) was demolished. This area will be transformed into an urban complex with both commercial and residential functions. More than 1400 buildings were demolished and approximately 30,000 migrants were uprooted from their neighbourhood.[3]

We conducted qualitative interviews in ViCs adjacent to the above three projects rather than in formal urban neighbourhoods because ViCs accommodate a substantial number of low-income migrants (Lin, de Meulder, Cai, Hu, & Lai, 2014), who have relatively fewer options and tend to suffer more from indirect displacement. As shown in Fig. 2, Baishizhou village is approximately 1 km from Dachong village; Gangxia East is adjacent to Gangxia West; and Luofang village is approximately 2 km southeast of Huangbeiling village.

3.2. Research method and data

We used a combination of quantitative and qualitative research approaches.

We first investigated the general characteristics of Shenzhen's property-led urban redevelopment. Here, we presented government documents to demonstrate policy support for property-led redevelopment and used land supply and housing transaction data obtained from the Shenzhen UPLRC, as well as photographs, to describe the property hot spots created by these projects.

We then used quantitative methods to investigate the spill-over effect of urban redevelopment on housing prices/rents. Drawing upon previous studies (e.g. de Sousa, Wu, & Westphal, 2009; Kaufman & Cloutier, 2006), we applied a hedonic price model to quantify the relationship between urban redevelopment and housing prices. The hedonic price method considers that goods or services can

[3] Information obtained from Huangbeiling subdistrict office.

be seen as a bundle of characteristics or attributes and are valued for these characteristics (Rosen, 1974). These inherent attributes are generally classified into structural attributes, neighbourhood attributes and locational attributes. Instead of the traditional hedonic model, we applied a multilevel hedonic model (MLM, or a hierarchical linear model), which can recognize the hierarchical features of variables and separate the effects of different levels of the hierarchical data on housing prices (Brown & Uyar, 2004; Jones, 1991). Although MLM has advantages in handling nested data, it is not without limitations. For instance, in MLM the dependent variable is restricted to the lowest level and it requires larger sample sizes to ensure sufficient statistical power, which have to a certain extent limited the application of this approach (Castro, 2002; Kreft, Kreft, & de Leeuw, 1998).

We chose MLM mainly based on the following considerations: first, purchasing a house is a hierarchical decision-making process since households first choose a city to live in, then choose a neighbourhood and finally choose a house, whereas the traditional hedonic model, using ordinary least squares (OLS) to estimate regression coefficients, has ignored this hierarchical nature (Brown & Uyar, 2004; Djurdjevic, Eugster, & Haase, 2008; Quigley, 1985); second, in the traditional hedonic model, the fundamental OLS assumption of independent observations is violated, since apartments within the same neighbourhood tend to have very similar prices (Hu, Geertman, & Hooimeijer, 2014; Mihaescu & vom Hofe, 2012). This is especially so for China, where gated communities[4] are prevalent in big cities. MLM can account for these limitations, and generate unbiased modelling results (Goldstein, 2011; Raudenbush & Bryk, 2002).

In our data, we have two levels: the apartment level (level 1) and the neighbourhood level (level 2). Our multilevel hedonic model takes the following random intercept form:

$$LN\ (P_{ij}) = \gamma_{00} + \gamma_{01} N_j + \gamma_{02}\ LN\ (L_j) + \gamma_{03}\ LN\ (U_j) + \gamma_{10}\ S_{ij} + \mu_{0j} + \varepsilon_{ij} \quad (1)$$

where $LN\ (P_{ij})$ represents the natural logarithm of the transaction price of residential property at level 1; S_{ij} represents structural house characteristics at level 1; N_j represents neighbourhood characteristics at level 2; $LN\ (L_j)$ represents the natural logarithm of the locational variables at level 2; also at level 2, $LN\ (U_j)$ represents the natural logarithm of our focus variable, distance to nearest URU; ε_{ij} is residual at level 1; μ_{0j} is residual at level 2. The variance of the residual error ε_{ij} is specified as σ^2, and the variance of the residual errors μ_{0j} is specified as τ_{00}. The extent to which observations within a group are related can be expressed as an estimate of the ratio of the between-group variation relative to the total variation, which is called the intra-class correlation coefficient (ICC):

$$\rho = \frac{\tau_{00}}{\sigma^2 + \tau_{00}} \quad (2)$$

For the dependent variable, apartment transaction data were collected from the database of Shenzhen UPLRC. In order to ensure the significance of the effects of urban redevelopment on property values, we selected those transactions within 2 km of the 101 URUs in the database. In total, we obtained 7287 transactions in the year 2014, when those URUs were announced or carried out. These apartments are all located in large-scale newly built gated communities. We focused on large-scale newly built communities for several reasons. First, new-build housing is not affected by depreciation, which made our model more reliable. Second, as our research was focused on the impacts of urban redevelopment on housing prices, large-scale communities, with a substantial number of apartments, can reflect this spill-over effect better than small-scale communities can. Finally, compared with the transaction price of second-hand housing, that of new-build housing is relatively more real, because in China people often sign 'yin-yang' (under-the-table) contracts in order to evade taxes when buying and selling second-hand housing, and thus the reported prices can be very low.

Regarding the independent variables, as mentioned, there are three types of variables in hedonic models: structural variables, neighbourhood variables and locational variables. In the literature, frequently used structural variables are floor area, age of house, floor level, number of bathrooms and number of bedrooms (Hamilton & Morgan, 2010; Hu et al., 2014). In China, whether or not an apartment, especially a new-build apartment, is furnished and decorated has a significant impact on its price (Tian, 2006). We signalled collinearity between floor area and the number of bedrooms. Eventually, we included three structural variables: floor area, floor level and furnishment (furnished and decorated, or not).

Neighbourhood quality can be related to both characteristics within the neighbourhood and those outside but in proximity to the neighbourhood (Hu et al., 2014). In that, school quality is an important factor affecting housing prices (Haurin & Brasington, 1996). We measured whether or not a community is located within a good school district. Moreover, it is suggested in the literature that proximity to water bodies has a positive effect on neighbourhood qualities (Chen & Jim, 2010). To control for this effect, we included proximity to the beach as an independent variable. Lastly, Shenzhen is well known for its numerous ViCs. Emerging from informal construction activities by indigenous villagers and home to numerous rural migrants, these ViCs are constantly criticized by the media or local governments for their unregulated houses, untidy street profiles and unhealthy living environment (see for instance: Zhang, Zhao, & Tian, 2003; Zhu, 2004; Tian, 2008; Liu, He, Wu, & Webster, 2010). Related to the housing prices, there is evidence in the literature that property values can be lower for housing in the proximity of ViCs (Chen & Jim, 2010; Song & Zenou, 2012). Therefore, the presence of ViCs in the vicinity was included in the model as a disamenity effect on adjacent residential properties.

The influence of accessibility on housing prices has long been recognized in the literature (McMillan, Jarmin, & Thorsnes, 1992; Palmquist, 1992; Ridker & Henning, 1967). Accessibility is often interpreted as accessibility to public transport, to workplace and to various urban amenities, such as open spaces. To measure accessibility, we included three accessibility variables: access to bus stops, access to metro stations and access to job opportunities. It is worth noting that accessibility to workplace was approximated by job opportunities of large manufacturing enterprises. In that, it is good to be aware of the fact that job opportunities offered by large manufacturing enterprises are very diversified, including both low-skilled and high-skilled jobs. Therefore, we believe that job opportunity of large manufacturing enterprises is an acceptable indicator that sufficiently represents the impact of job accessibility on housing prices. For our focus variable, since it is the presence of URUs that will have impacts on housing prices (Eiser, Stafford, Henneberry, & Catney, 2007; Mihaescu & vom Hofe, 2012), we calculated the Euclidean distance of a gated community to the nearest URU.

Table 1 gives definitions and descriptive statistics of the dependent and independent variables in the multilevel hedonic model.

Finally, we used various materials from government reports, newspapers and our interviews to investigate the consequences of indirect displacement, which are closely associated with rising housing prices/rents. During two periods of in-depth fieldwork (December 2013–February 2014 and March–May 2015), residents of the aforementioned neighbourhoods adjacent to urban redevelopment projects were interviewed; the main focus was on the experiences of rising housing prices/rents and the impacts on their daily lives and dwelling decisions. In addition, we used field observations and photo documentations to establish the living conditions in neighbourhoods in which rents were increasing.

It should be noted that although the residents of ViCs also include local villagers (i.e. landlords who own properties in ViCs), our inter-

[4] A gated community is 'a walled or fenced housing development with secured and/or guarded entrances' (Huang, 2006, p. 508).

Table 1
Descriptive statistics of the variables in the multilevel hedonic model.

Variable	Description	Level	Minimum	Maximum	Mean	Standard deviation
Dependent variable						
LN_price	Logarithm of gross price (10^4 RMB)	Level 1	3.633	6.771	4.979	0.434
Structural characteristics						
Floor	Floor level	Level 1	1	47	15.440	9.743
Area	Floor area of an apartment (m^2)	Level 1	34.000	310.000	93.002	27.354
Furnishment	Dummy: 1 when an apartment is furnished	Level 1	0	1	0.338	0.473
Neighbourhood characteristics						
School	Dummy: 1 when an apartment is in a high-quality school district	Level 2	0	1	0.150	0.359
Beach	Dummy: 1 when the beach is within 1000 m	Level 2	0	1	0.048	0.214
Village	Dummy: 1 when there is a ViC within 100 m	Level 2	0	1	0.577	0.494
Accessibility						
Bus	Dummy: 1 when there is a bus stop within 500 m	Level 2	0	1	0.724	0.447
Metro	Dummy: 1 when there is a metro station within 500 m	Level 2	0	1	0.191	0.393
LN_job	The negative value of the logarithm of route distance to the nearest job opportunity (m)	Level 2	−7.831	−3.974	−6.416	0.861
Focus variable						
LN_URU	Logarithm of Euclidean distance to nearest urban renewal unit (m)	Level 2	0.693	7.549	6.012	2.000

views about indirect displacement mainly focused on the situation of migrant renters. First, local villagers constitute only a very small proportion of residents of ViCs. For instance, in Gangxia village, there were only 1000 local villagers, in contrast to 100,000 migrant renters. It is estimated that in many ViCs, the ratio of original villagers to migrants could be < 1:100 (Li, 2010). Second, unlike migrants, local villagers have a very strong position during redevelopment: they are the main stakeholders and are entitled to considerable compensation for displacement. After the redevelopment, local villagers may even choose to move back to their original neighbourhood. In the case of Gangxia village, 59,200 m^2 of land was used for the construction of new properties to compensate villagers.[5] Therefore, for many local villagers, redevelopment is a once in a lifetime opportunity to acquire a large fortune. Moreover, as for indirect displacement, rising housing prices/rents are the main source for both exclusionary displacement and displacement pressure, in which situation local villagers are actually the beneficiaries rather than the victims. Based on these considerations, in Section 5.2 we limit the discussion to the situation of migrants in ViCs. In the following section, we present the general background to property-led urban redevelopment in Shenzhen.

4. Property-led urban redevelopment in Shenzhen

Shenzhen is a leading city in the implementation of urban redevelopment strategies. As early as 2004, the municipal government started exploring urban renewal policies. The issuing of Shenzhen's *Urban Renewal Measures* in 2009 marked the more systematic operation of urban renewal projects. By August 2013, > 300 urban renewal projects had been approved by the government, whose main concern is the redevelopment of ViCs. As noted by He and Wu (2007), property-led redevelopment is characterized by removing supply-side constraints to attract private investment during urban redevelopment. Therefore, local governments usually provide private investors with substantial policy support. In the case of Shenzhen, in order to encourage the participation of private capital in redevelopment projects, the municipal government enacted a number of preferential policies. For instance, the *Provisional Regulations for Redevelopment of Villages in the City in Shenzhen* (Shenzhen UPLRC, 2005) allow local authorities to transfer land in ViCs that is targeted for redevelopment to developers at reduced prices or even free of charge. In addition, substantial special support funds have been established for urban redevelopment initiatives (Shenzhen UPLRC, 2007). To simplify approval procedures, in June 2016 a new department within the municipal government – the Urban Redevelopment Bureau – was established and tasked with managing and administering urban redevelopment projects. These preferential policies have boosted the number of urban redevelopment projects, which have become an important source of commercial housing supply in Shenzhen. For instance, whereas land supply from urban redevelopment for commercial housing construction comprised around 20% of the total land supply in 2011, the figure increased to nearly 50% in 2015.

These projects are primarily profit-oriented and create prominent property hot spots. Many of them are flagship projects that play a catalytic role in attracting new financial capital. Table 2 gives an overview of flagship redevelopment projects in Shenzhen. As can be seen, the housing prices of these projects are substantially higher than the average housing prices during the same period in Shenzhen, representing typical characteristics of property hot spots.

The mechanisms underlying the creation of these property hot spots are multifaceted. First, the nature of these projects is primarily profit-oriented, since many of these sites occupy central locations in the city and the rent gaps are enormous. Private developers, the main actors in property-led redevelopment, are eager to capture the huge rent gaps by developing real estate. After redevelopment, housing prices/rents can double or even triple. For instance, in the case of Caiwuwei village, annual rental yields increased from 18 million yuan before the redevelopment to 60 million yuan following it (Wang, 2011). Second, unlike real estate development on agricultural land, the redevelopment of old residential areas requires developers to pay high levels of compensation to relocated owner-occupiers. In extreme cases like Gangxia village, the only ViC within Shenzhen's CBD, the redevelopment created > 20 billionaire families and 10 billionaire individuals (Qian, Peng, Luo, Wu, & Du, 2015). No doubt these high compensation costs contributed to the high housing prices after redevelopment.

By creating contrasting and distinct urban landscapes, property hot spots represent a strong image of urban revitalization and thus raise the expectations of investors. Many landmarks in Shenzhen are a result of urban redevelopment. For instance, in the Caiwuwei redevelopment project (Fig. 3), a 442-m high skyscraper was erected. The ongoing redevelopment projects of Dachong, Gangxia and Huangbeiling villages are also aimed at changing the areas into high-end urban complexes with commercial and residential functions.

Besides the creation of property hot spots, the redevelopment of residential areas (especially ViCs) often leads to a change in the housing market because large-scale direct displacement is initially generated. For instance, as mentioned, the demolition of Dachong, Gangxia and Huangbeiling villages caused the displacement of large populations of migrants. Thousands of displaced residents need to find new accommodation, and they prioritize nearby places (Liu, Lin, Fu, Geertman, & van Oort, 2016).

[5] Information provided by Retumu, a local NGO in Shenzhen.

Table 2
Flagship redevelopment projects in Shenzhen.
Source: Shenzhen UPLRC.

Redevelopment project	Housing price after redevelopment (yuan/m^2)	Average housing price in Shenzhen[a] (yuan/m^2)	Completed[b]
Huawei science park	20,653	18,175	December 2012
Xiasha village	43,712	22,141	August 2013
Saigerili old industrial area	72,000	21,821	September 2013
Dachong village	**43,255**	**22,198**	**October 2014**
Xingheyabao science park	43,527	26,536	November 2014
Shuiwan village	55,728	25,758	December 2014
Xinlaoxi village	36,704	26,370	April 2015
Gangxia village	**89,000**[c]	**34,832**	**July 2015**
Ludan village	89,763	42,476	December 2015
Huangbeiling village	**61,212**	**49,876**	**April 2016**

Statistics of the three case villages in the qualitative section (section 5.2) were marked as bold in this table.
[a] This is the average housing price in Shenzhen at the time of completion of each project.
[b] For most projects, by the time shown in the table, only part of the project had been completed and put into the market.
[c] This is the list rather than the transaction price.

Table 4
Estimation results of MLM specification.

Fixed effects	Coefficient	Std. error	t-ratio
Intercept	4.513***	0.272	16.565
Floor	0.001***	0.000	3.293
Area	0.009***	0.000	19.309
Furnishment	0.168	0.093	1.795
School	0.232**	0.083	2.777
Beach	0.387**	0.134	2.882
Village	− 0.123	0.065	− 1.900
Bus	0.287**	0.083	3.472
Metro	0.119	0.076	1.562
LN_job	− 0.081	0.041	− 1.958
LN_URU	− 0.041*	0.018	− 2.244
Random effects	Variance components	df	Chi-square
τ_{00}	0.064***	46	69,070.025
Level 1 σ^2	0.006		
Deviance	− 16,598.879		

Note: the dependent variable is natural logarithm of gross price, $N = 7287$.
* $p < 0.05$.
** $p < 0.01$.
*** $p < 0.001$.

commercial and residential buildings which generate a property 'hot spot'.

Fig. 3. Contrasting landscape between the redeveloped part and the remaining part of Caiwuwei village (Photo by Zhiwen Zou).

Table 3
Estimation results for the null model.

Fixed effects	Coeff.	Se	t-ratio
γ_{00}	5.020***	0.057	87.610
Random effects	Variance components	df	Chi-square
τ_{00}	0.179***	53	17,286.790
Level 1 σ^2	0.056		
Deviance	26.088		

*** $p < 0.001$.

Overall, a shock in the lower-end housing and rental market, together with the effect of property hot spots, is likely to induce price-shadowing effects on surrounding neighbourhoods, leading to indirect displacement. As noted by Davidson (2008, p. 2390):

> Indirect displacement therefore associates 'price shadowing' (Atkinson, 2002; Hall & Ogden, 1992; Vicario & Monje, 2003) not only with housing market change, but also with the related influx of economic and cultural capital. This includes the gentrification of surrounding housing and the development of new high-status

In the following section, we describe the chain effects of property-led redevelopment in the case of Shenzhen, namely the price-shadowing effect and the induced indirect displacement.

5. Chain effects of property-led redevelopment in Shenzhen

5.1. Price-shadowing of urban redevelopment projects: results from a multilevel hedonic model

In this section, we present the results from the MLM. We first ran a null model to calculate the ICC. As shown in Table 3, in terms of random effects, the chi-square test is statistically significant, indicating that there is variance in housing prices by neighbourhood groupings. The ICC is very high (0.760), indicating that 76.0% of the variance in housing prices is caused by neighbourhood differences. This result is consistent with the situation in Chinese cities because apartments within the same gated community have very similar prices. The estimation of the full MLM is presented in Table 4. For coefficients that are statistically significant, floor level and floor area, school district quality, proximity to the beach and access to bus stops are positively related to housing prices. The results are consistent with the hedonic literature (Chen & Jim, 2010; Haurin & Brasington, 1996; Hu et al.,

2014). Apartments on higher floor levels generally enjoy better views and thus have higher prices. Apartments situated in a good school district are worth more since better educational resources are capitalized in higher property values. Proximity to the beach not only translates into proximity to water bodies but also indicates better views and therefore leads to higher housing prices. Finally, apartments within 500 m of a bus stop have higher market values because accessibility is a positive factor of housing prices.

In terms of our focus variable, the MLM results show that after the announcement of a redevelopment plan or the commencement of redevelopment activities, there is a statistically significant negative relationship between distance from URUs and housing prices: a 10% decrease in the distance to the nearest URU leads to a 0.41% increase in housing prices. That is, for apartments within 2 km of a redevelopment project, as the proximity of the apartment to the project increases, the price increases, when controlling for all other independent variables in the model. This is a clear price-shadowing effect of urban redevelopment projects, which is viewed as the main driving force behind indirect displacement. As discussed in the previous section, the price-shadowing effect is closely related to the nature of property-led redevelopment projects, which are often aimed at stimulating an influx of capital by creating property hot spots of high-end commercial/residential spaces for the upper middle class (Davidson, 2008). Moreover, for the redevelopment of residential areas, in particular ViCs, the rising housing prices/rents in adjacent areas are a result not only of the property hot spots but also of the sudden change in the housing market due to the induced large-scale direct displacement.

In brief, we quantitatively identified the main cause of indirect displacement, namely the price-shadowing effect of urban redevelopment. It then became important to establish whether this effect is subjectively experienced at the individual level, and what impacts are felt. In the following section, we zoom in on the three redevelopment projects and discuss the consequences of redevelopment-induced indirect displacement. The main focus is on the experiences of rising housing prices/rents and the impacts on residents' daily lives.

5.2. Redevelopment-induced exclusionary displacement and displacement pressure

Indirect displacement (in the form of both displacement pressure and exclusionary displacement) occurs when the price-shadowing effect of urban redevelopment increases the rents and prices in adjacent areas (Davidson, 2008). Housing that was once affordable for certain groups becomes unaffordable (Shaw & Hagemans, 2015) and therefore these groups are excluded from that housing (exclusionary displacement) or are under the threat of being priced out (displacement pressure) (Marcuse, 1985). Indirect displacement is most likely to have a serious impact on low-income residents, as affordable housing is particularly limited and they have relatively fewer resources with which to deal with displacement. In light of this, the qualitative section mainly focuses on the price-shadowing effect of urban redevelopment projects on the lower-end of the housing market, i.e. the impacts of the lower-income groups. In Shenzhen, the majority of low-income residents (mostly migrants) live in ViCs (Hao, Sliuzas, & Geertman, 2011). It is therefore thought that, compared to the redevelopment of brownfield sites, the effect of indirect displacement is more prominent and severe in the redevelopment of ViCs.

We conducted interviews, field observations and photo documentations in Baishizhou village, Gangxia East, the remaining part of Huangbeiling village, and Luofang village to investigate the impact of indirect displacement caused by the redevelopment of nearby Dachong, Gangxia West and Huangbeiling villages. All the interviewees are migrant workers renting rooms in ViCs. They have diversified occupations, ranging from self-employment and white-collar work, to salesman and construction workers. 25 out of 28 interviewees said that these areas had undergone a significant increase in housing rents after redevelopment, which has verified the price-shadowing effect of urban redevelopment, as captured in the quantitative model.

As aforementioned, exclusionary displacement is closely related with the dynamics in housing markets. Specifically, many of the low-income migrants are excluded from once-affordable areas since they can no longer afford the rents. This type of indirect displacement is well illustrated in the Huangbeiling case. Upon the demolition, 30,000 migrants needed to find new accommodation, and they prioritized the remaining part of the village. As recalled by a migrant:

> We wanted to stay in the remaining part of Huangbeiling village when they demolished the central part. However, that area was packed at that time since everyone wanted to stay there. After searching for about ten days, eventually, we managed to find a place in Luofang village (Interview, May 2015).

A sudden change in the demand side of the housing market has in a sense directly driven the rise of rent in this area. A migrant who moved out of the remaining part of Huangbeiling village reported the following:

> Before the demolition, the rent for a one-bedroom apartment in the remaining part of Huangbeiling village was only several hundred yuan, whereas right after the demolition, the rent immediately rocketed. I heard that last December, the rent had risen to 1300 or 1400 yuan per month. We really cannot afford the rent anymore (Interview, January 2014).

Although the price-shadowing effect in this case is most prominent in the remaining part of Huangbeiling village, it also trickles down to other adjacent villages:

> The housing rent in Luofang village was equally cheap before the demolition of Huangbeiling village, but has substantially risen since then (Interview, January 2014).

Six out of seven interviewees in Luofang village described similar experiences.

These cases clearly show that after the demolition, many low-income migrants were deprived of the opportunity of living in the remaining part of Huangbeiling village because of the increasing rent levels, engendering an indirect effect of exclusionary displacement. As expressed by an interviewee:

> It costs more than one thousand yuan for a one-bedroom apartment in Huangbeiling village now. How can we afford the rent with such a low income level? Not to mention that I also have young children and elderly parents to support… (Interview, February 2014).

Furthermore, it shows that adjacent villages (e.g. Luofang village) experienced a rent rise too, due to the demolition of the central part of Huangbeiling village.

In addition to causing exclusion from certain areas, exclusionary displacement can also lead to a situation of entrapment, whereby the most disadvantaged social groups are ‘trapped’ in certain deprived neighbourhoods since better alternatives are not available to them (Slater, 2006; van Criekingen, 2006). In fact, when we visited the remaining part of Huangbeiling village in 2015, there were plenty of complaints about rents increasing after the demolition. However, when asked why they had stayed in the village, most said that they had no other options. This evidence has confirmed Slater's (2009) argument that absence of direct displacement cannot simply be translated into the absence of displacement. In the case of Huangbeiling village, the qualitative materials show that low residential mobility among low-income migrants in the rapidly gentrifying neighbourhood is due to their experienced exclusionary displacement, i.e. a direct consequence

of the shrinking pool of affordable housing.

Aside from exclusionary displacement, for those migrants who manage to stay in the neighbourhood by resorting to various strategies, they also suffer from great displacement pressure, fearing that they will eventually be priced out of the area if the rent keeps rising. According to a migrant in Luofang village who had been displaced from Huangbeiling village:

> The houses in ViCs, especially those within the SEZ, are becoming more and more unaffordable to us. Among ViCs within SEZ, the village I am living in now is already relatively less accessible, while the rent for a one-bedroom apartment has also increased to more than one thousand yuan. It feels like we will eventually be forced back to our hometown (Interview, April 2015).

Street interviews in Baishizhou village also revealed that since the demolition of Dachong village, rents in Baishizhou village had increased significantly. Concerns about affordability prevailed among migrants living in this neighbourhood. The same situation applies to Gangxia village:

> Ever since they started demolishing Gangxia West, rents in Gangxia East have soared. Before that, landlords normally increased rents once a year, but now, they increase rents two or three times every year. If you cannot bear the high rent, then you just move out, since the landlord can easily let it out.[6]

In addition to concerns about affordability, pressures can also result from the departure of friends and neighbours or the unaffordability of once-affordable public and commercial facilities as a result of rising rents. According to a migrant in Luofang village:

> Many migrants I know chose to leave, since they can no longer afford to live here. Before the demolition, a one-bedroom apartment normally accommodated two families. However, under current soaring rents, it is no longer possible. So they left Shenzhen and went to cities such as Chongqing and Chengdu, where they get higher chances of survival… If it was not for my children's education, I might have left as well (Interview, January 2014).

Owing to the redevelopment, incumbent residents witness dramatic changes that are taking place in their neighbourhoods. For instance, the informal market in Huangbeiling village that sold cheap meat and vegetables was replaced by a formal supermarket with higher rents and prices; and a popular gourmet street in Gangxia West no longer existed. Changes like this contributed to a sense of loss of place and made the neighbourhood less and less livable for these residents. Nevertheless, even under such a disadvantaged position, we see that these low-income residents utilize various strategies to mitigate the impacts of indirect displacement. Economically, to cope with increasing rents, they resort to group renting (*qunzu*), which is currently prevalent in ViCs within the SEZ. It is very common for ten or more people to share a two-bedroom apartment, and migrants have extremely poor living conditions in such arrangements (Fig. 4). A migrant reported the following:

> In Huangbeiling, normally three or four families, sometimes even five families, live in a three-bedroom apartment. It is so common to house two families in the living room. Since every family has their own gas cooker, there are often five or six gas cookers in one apartment (Interview, April 2015).

Socially, migrants are actively engaged in place-making for social encounters despite the radically changing situation. For instance, when an old meeting place is no longer there due to the redevelopment, a new one might emerge somewhere else. According to a migrant in Huangbeiling village:

> There was a place in the demolished area where people went there to have a chat or exchange information about job opportunities every morning and evening. After the demolition, we now have a new place to meet, right in front of the Jialetong supermarket (Fig. 5) (Interview, April 2015).

These examples indicate that although vulnerable and disadvantaged in the face of displacement, low-income migrants actively resort to various tactics to minimize the negative impacts. However, the resources (no matter economic, social, or political) this social group possesses to deal with indirect displacement are particularly limited. Therefore, when resources are exhausted, they might eventually leave the city. In fact, this is already happening against large-scale property-led redevelopment in Shenzhen, as revealed in our interviews. This explains the migrants' general pessimism in terms of their future in the city. It is also interesting to notice that, for low-income migrants, although they suffer a lot from rising expenses and declining living conditions, cases of resistance are very rare. Of the 28 interviewees, only one migrant expressed the intention of resisting the landlord's unreasonable demands for higher rent. While others mainly think they had no choice but to grin and bear this situation, by paying what the landlord asked without any negotiations.

Overall, interviews in low-income neighbourhoods adjacent to the three redevelopment projects revealed residents' experiences of both exclusionary displacement and displacement pressure. They were either excluded from once-affordable areas or experiencing a constant threat from rising rents, the departure of friends and neighbours, and drastic changes in the neighbourhood. Qualitative evidence presented in this section has also verified the price-shadowing effect of urban redevelopment, as captured in the MLM.

6. Conclusion

Many countries have implemented urban redevelopment. From a government's point of view, redevelopment projects are expected to induce an inflow of capital to the target area, generating various benefits. However, these benefits are often accompanied by profound social costs, in particular, the subtler forms of indirect displacement. In the literature, indirect displacement has long been under-researched because the processes are less radical and less visible than direct forms of displacement. Moreover, the handful of studies that have been carried out on indirect displacement primarily focused on qualitative descriptions of the consequences of this process on the affected residents. The present research has provided in-depth insights into the underlying mechanisms and the chain effects of property-led redevelopment in Shenzhen, China.

The contributions of this article are as follows: empirically, this research has presented rare evidence of the consequences of indirect displacement after gentrification in urban China; theoretically, the study has elaborated on the driving forces behind the significant spill-over effects of property-led redevelopment, and has quantitatively confirmed the price-shadowing of urban redevelopment; more importantly, new evidence of indirect displacement has contributed to the ongoing gentrification/displacement debate over whether pro-gentrification policies, which are in many cases implemented through large-scale redevelopment activities, really substantially harm the poor. It is without any doubt that Marcuse's (1985) conceptualization of indirect displacement has provided an important yet often neglected perspective on gentrification processes. This perspective can help urban researchers to uncover the full consequences of gentrification processes.

In this study, it is revealed that property-led redevelopment can not

[6] This interview material is from a report on Nanfang Metropolis Daily (28/10/2009).

Fig. 4. Group renting in ViCs (Photo taken by the first author).

Fig. 5. A new meeting place for migrants after the demolition (photo taken by the first author).

only change the social and physical landscapes of rebuilt areas, but also has spill-over effects on surrounding urban areas, which further engenders indirect displacement in these areas. We have shown that the price-shadowing effects of property-led redevelopment can be identified, and that these effects are substantial. This is important, since current research on indirect displacement presents predominantly qualitative interpretations. We addressed this limitation by quantitatively confirming the logical hypothesis that there is a relationship between urban redevelopment activities and rising housing prices in adjacent areas. And our case studies of three urban redevelopment projects have shown that residents living in the vicinity were profoundly affected by indirect displacement. As a result of soaring housing rents, many migrants are excluded from once-affordable areas; for those who manage to stay put, these neighbourhoods become less and less livable, and residents experience a gradual loss of sense of place. This new evidence for China sheds light on the issue of indirect displacement, which remains under-researched in academia.

Regarding redevelopment-induced indirect displacement, the Chinese context differs substantially from the western context. First, although private developers are the main investors in urban redevelopment in China, local governments are usually more actively involved and provide strong policy support to promote property-led redevelopment. Second, in contrast to the strong focus on economic outcomes, the social consequences are largely neglected in public discourses. This has resulted in the absence of public policies for tackling indirect displacement, a situation that is rare in the western context. Third, unlike displacees in western countries, low-income residents affected by indirect displacement in Chinese cities are particularly vulnerable: they are either deprived of affordable housing in central urban areas or are under constant threat of displacement as a result of changes and of losses of the comfort and security of familiar surroundings. Affected residents can only resort to various individual strategies (such as group renting) to tackle the impacts of indirect displacement, and there is a tendency towards a consolidation of poverty in these areas. In other words, urban redevelopment has led to low-income migrants becoming even more firmly trapped in ViCs.

Overall, this research has revealed that residential displacement in China has gone beyond forced eviction and has taken on more indirect and latent forms, and that nearby urban redevelopment is a key catalyst for this phenomenon. For policymaking on urban redevelopment, it is imperative to start considering these forms of social consequences in order to take measures to counteract the negative impacts they may have. A critical issue raised by this study is that in contrast to the huge demand, the pool of affordable housing actually shrinks as a result of urban redevelopment. This has raised critical questions concerning the extent to which it is legitimate to pursue economic development/revitalization at the expense of the social welfare of the disadvantaged. In light of this, policymakers should be cautious about the acceleration of this ‘accumulation by dispossession’ process and adopt more inclusive and incremental approaches that do not lead to sudden changes in the lower end of the housing market. In addition, social housing in most Chinese cities is currently provided only to local

residents. As a result, millions of migrants must resort to informal rental markets such as ViCs. Due to a lack of regulation, these informal markets are usually subject to severe rent speculation. Therefore, to alleviate the impacts of indirect displacement, access to subsidized public housing needs to be provided to those who are in greatest need (e.g. low-income migrants) and regulations on housing markets in informal neighbourhoods need to be strengthened to protect the interests of tenants, who are particularly vulnerable to rising rents.

The present research has two limitations. First, the redevelopment projects we used for our quantitative model were officially approved and announced by the municipal government in 2012 and 2013. Data on the exact implementation stages of these 101 projects in 2014 were not available. Therefore, we were unable to distinguish actual redevelopment from anticipated redevelopment. However, considering that redevelopment projects usually have a long implementation period (a main reason is the negotiating process of relocation and compensation), all the projects up till 2014 will be at the early stage of redevelopment. Therefore, it is safe to assume that the price-shadowing effect captured in our model is likely to be undervalued. Second, due to a lack of available data, we could not model the price-shadowing effect of urban redevelopment projects on rent levels in informal neighbourhoods such as ViCs. Considering that these neighbourhoods accommodate mainly low-income migrants, who are in urgent need of affordable housing and are extremely vulnerable to indirect displacement, greater attention needs to be paid to these informal communities. Moreover, because urban redevelopment activities are the main accelerators of profound urban transformations, many of which are taking place on brownfield sites and thus do not cause direct displacement, more research on indirect displacement is needed. Finally, future studies should shed more light on alternative urban redevelopment approaches that address various forms of displacement issues, insights into which can provide empirical input for further institutional reforms.

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