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# Immigration and the Neighborhood: New Evidence from Recent Immigrants in Hong Kong

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This study examines the causal effect of the recent inflow of high-skilled immigrants on the housing value of the properties of Hong Kong natives. We categorize homebuyers into local, Mainland Chinese, and other foreigners, and construct neighborhood-level housing profiles based on housing transactions from 2011 to 2016. We estimate the impact of immigrants on housing value at the neighborhood level. By using instrumental variable estimation, we find that recent immigrant inflow does not generate significant impact on the willingness of Hong Kong natives to pay for housing units.

**Keywords**

Immigration, Housing Price, Neighborhood, Externality, Hong Kong

# 1. Introduction

Immigrants are an important human capital resource for local economic development. Although they bring economic benefits, they also create social issues by raising the level of competition with native residents for employment, housing, and social services. Existing studies find that immigrants tend to generate a positive, sizable impact on raising housing value and rent at the city level (Gonzalez and Ortega, 2013; Ottaviano and Peri; 2007; Saiz 2003 and 2007). This is a logical result due to increases in housing demand. Another explanation is that the cultural diversity of immigrants can increase the productivity of natives (Ottaviano and Peri,2006; Bakens *et al.* 2013). In contrast, other studies find that immigrants tend to reduce the neighborhood value within cities (Accetturo *et al.*, 2014; Saiz and Wachter, 2011). Immigrants tend to exhibit clustered living patterns and follow their ethnic networks to settle in certain neighborhoods (Clark, 1986; Charles, 2006; Gross and Schmitt, 2003; Munshi, 2003). If natives and immigrants have different preferences in ethnic and socioeconomic segregation, the immigrants may crowd out native residents to other areas of the city.

However, virtually all of the existing literature in this area examines inflows of less-skilled immigrants. The effect of high-skilled immigrants on neighborhood housing value is unclear. If high-skilled immigrants can bring positive externalities such as knowledge spillover to neighborhoods, they are likely to generate a positive rather than negative effect on neighborhood housing value. To address the knowledge gap, this study examines the causal impact of high-skilled immigrants on housing value in Hong Kong at the neighborhood level.

Hong Kong is an ideal venue to study intra-metropolitan housing dynamics considering its inelastic supply of land due to geographic constraints and strict government controls. In the 2010s, the Hong Kong government launched new immigration policies to attract high-skilled immigrants from Mainland China. Consequently, recent immigrants to Hong Kong often belong to the high-skilled and high-income groups. Owing to the limited living space, perfect social segregation within the city is not possible. All neighborhoods are therefore a mix of immigrants and local residents, giving us the opportunity to examine the relationship between the immigrant inflow within a neighborhood and the housing value of the properties of the natives who are living there.

We use a data set that includes over 240,000 housing transactions between 2011 and 2016. We construct neighborhood-level housing data based on the address of each housing unit transacted and the name of the homebuyer. To avoid the potential endogeneity of immigration inflow due to reverse causality and other omitted variables, we use the distribution of early immigrants among neighborhoods as an instrumental variable to predict immigrant settlement patterns. The results show that the inflow of recent immigrants in Hong Kong

do not generate negative impacts on neighborhood value and reduce the willingness of Hong Kong natives to pay for housing units.

The next section of this paper provides the background on the immigration policies and housing market conditions in Hong Kong. Section 3 describes the data and summarizes migration settlement patterns. Section 4 lays outs the empirical strategies, and Section 5 shows the empirical results. Finally, Section 6 concludes.

## 2. Immigration Policies and Housing Market in Hong Kong

Hong Kong is an immigrant society created by several waves of immigration. The earliest immigration policy dates back to the 1950s. Owing to social and political unrest on the Chinese mainland, the Hong Kong government began a daily quota system to restrict the massive inflow of immigrants from Mainland China. Later, this system became the One Way Permit Scheme (OWPS), which mainly facilitates family reunions and regulates the entry of Mainland residents into Hong Kong for settlement. The current quota is 150 permits per day, and most Mainland Chinese immigrants who arrive through the OWPS are low-income individuals. After the reunification in 1997, the relationship between Hong Kong and Mainland China became remarkably close. In early 2000, the Hong Kong government established several new immigration schemes to attract high-skilled immigrants, especially from Mainland China.[1]

In 2003, the Hong Kong government launched the Admission Scheme for Mainland Talents and Professionals (ASMTP). This scheme attracts talented, high-skilled professionals from Mainland China to work in Hong Kong. Residents from Mainland China with special skills, knowledge, or experience may apply to work in Hong Kong under the ASMTP. It is quota-free and has no sectoral restrictions. After working for seven years in Hong Kong, Mainland Chinese professionals can apply for permanent residency and become Hong Kong citizens. At the end of 2016, over 92,000 Mainland professionals were working in Hong Kong under this scheme.[2]

The Hong Kong government also formulated the Capital Investment Entrant Scheme (CIES) in 2003 to facilitate entry for residency through capital investment and stimulate the local economy. Entrants were required to invest in Hong Kong but could not engage in the running of any business there.

[1] The official website of the Hong Kong immigration department contains all of the immigration policies: http://www.immd.gov.hk/eng/services/index.html.

[2] Professionals from other countries can apply for work visas through the General Employment Policy (GEP). The GEP became effective when Hong Kong was under the rule of the British government.

Eligible applicants were required to invest a minimum of HK$6.5 million in Hong Kong, choosing from a wide range of investment assets. Concerned with rapidly rising housing prices, the government raised the investment threshold to HK$10 million in 2010 and excluded real estate from the class of permissible investment assets.[3] In early 2015, the CIES was suspended. The Hong Kong government had attracted over HK$243 billion in investments through the CIES and approved more than 44,000 applicants, over 90% of which were from Mainland China, as shown in Table 1.

In 2006, the government implemented the Quality Migrant Admission Scheme (QMAS). The QMAS is a quota- and points-based system that attracts high-skilled elites from Mainland China and overseas to settle in Hong Kong, thereby enhancing the competitiveness of the city in the global market. Unlike the ASMTP, the QMAS directly offers permanent residency rather than employment. Successful applicants are not required to have job offers in Hong Kong before entry. They are evaluated through the General Points Test or Achievement-based Points Test and compete for quota allocation. At the end of 2016, Hong Kong had accepted around 3,500 applicants under this scheme.

In addition to creating new policies to attract high-skilled professionals from Mainland China and other countries, the government also launched policies to attract Mainland Chinese students to study in Hong Kong. Mainland Chinese students have been allowed to pursue full-time undergraduate study programs in Hong Kong since 1999. In 2005, they were allowed to enter Hong Kong to enroll in full-time and locally accredited programs at the post-secondary level. In 2008, they were permitted to pursue short-term studies in Hong Kong. They were also granted a 12-month stay after graduation under the Immigration Arrangements for Non-local Graduates (IANG). The employment restrictions for non-local students were also relaxed. All of these policies are attractive for non-local students. As a result, an influx of non-local students into Hong Kong has been occurring since 2000. Chang (2017) finds that Mainland Chinese students in Hong Kong tend to exhibit clustered living patterns, and drive up housing rent in neighborhoods with such clustering, particularly in the summer period.

Table 2 summarizes the annual number of immigrants under the different immigration schemes. This study defines immigrants who arrive in Hong Kong through the ASMTP, CIES, and QMAS as high-skilled immigrants. The number of high-skilled immigrants increased over 10.5% per year, on average, from 2004 to 2016.

[3] 1 USD=7.75 HKD

**Table 1 Number of Applicants and Amount of Investment under CIES in Hong Kong, 2004-2015**

| | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Number of Applicants | | | | | | | | | | | | | |
| Mainland China | 207 | 280 | 503 | 1328 | 2254 | 2864 | 6019 | 3165 | 6239 | 8908 | 5862 | 2775 | 40404 |
| Other | 258 | 215 | 297 | 467 | 544 | 527 | 687 | 219 | 269 | 319 | 221 | 76 | 4099 |
| Total | 465 | 495 | 800 | 1795 | 2798 | 3391 | 6706 | 3384 | 6508 | 9227 | 6083 | 2851 | 44503 |
| Investment (Billions HKD) | | | | | | | | | | | | | |
| Real Estate | 0.739 | 0.628 | 0.678 | 1.363 | 3.204 | 5.618 | 9.151 | 15.916 | 4.885 | 0.201 | 0.131 | 0.000 | 42.514 |
| Other Assets | 1.276 | 1.548 | 1.981 | 4.464 | 7.820 | 12.604 | 12.096 | 15.662 | 30.042 | 37.285 | 48.616 | 27.497 | 200.891 |
| Total | 2.015 | 2.176 | 2.659 | 5.827 | 11.024 | 18.222 | 21.247 | 31.577 | 34.927 | 37.486 | 48.747 | 27.497 | 243.404 |

***Source***: Immigration Department of the Government of the Hong Kong Special Administrative Region

**Table 2 Number of Immigrants under New Immigration Schemes in Hong Kong, 2004-2016**

| | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Employment/Investment | | | | | | | | | | | | | |
| ASMTP | 3745 | 4029 | 5031 | 6075 | 6744 | 6514 | 7445 | 8088 | 8105 | 8017 | 9313 | 9229 | 10404 |
| CIES | 272 | 307 | 380 | 822 | 1547 | 2606 | 2971 | 4187 | 3804 | 3734 | 4855 | 2739 | 2667 |
| QMAS | | | 83 | 239 | 564 | 593 | 329 | 286 | 298 | 332 | 373 | 208 | 273 |
| Total | 4017 | 4336 | 5494 | 7136 | 8855 | 9713 | 10745 | 12561 | 12207 | 12083 | 14541 | 12176 | 13344 |
| Entry for Study | | | | | | | | | | | | | |
| Visas issued to Mainland Chinese Students | 3256 | 4112 | 5013 | 6290 | 7435 | 8650 | 10129 | 12913 | 16401 | 19067 | 19606 | 18528 | 18887 |
| Visas issued to Students from other Countries | 2337 | 3178 | 4046 | 4659 | 5279 | 5823 | 6532 | 7401 | 7872 | 8860 | 9619 | 10047 | 10383 |
| IANG | | | | | 2758 | 3367 | 3976 | 5258 | 6756 | 8704 | 10375 | 10269 | 9289 |

***Source***: Immigration Department of the Government of the Hong Kong Special Administrative Region

Hong Kong is one of the most densely populated places in the world. The city is 1,108 square kilometers; however, almost 80% is mountainous. The built-up areas account for 24% of the total land and 7% of the total land is for residential purposes (Planning Department, 2017). As of 2016, 7.27 million people are living in Hong Kong. The Hong Kong government strictly controls land supply for new developments. Analyses of government land disposal suggest that non-market forces have strongly influenced the land supply (Chiu, 2007).

Meanwhile, after Singapore, Hong Kong has the second-largest public-housing sector in the capitalist world. The public-housing program in Hong Kong was launched in the 1950s to provide affordable housing to low-income citizens (Kwok, 1983; Ying, 1986). Currently, over 2.1 million residents live in public rental housing (Census and Statistics Department, 2016). Housing units developed by the private sector comprise slightly over 50% of the total housing stock in Hong Kong. As new immigrants are not eligible for the public housing system, they must compete for housing in the private market, which further increases housing prices. For private housing, the housing-price index increased from around 80 in 2004 to almost 290 in 2016.[4] In the same period, inflows of high-skilled and high-income immigrants were substantial, which suggests a strong correlation between new immigrants and housing prices in Hong Kong.

## 3. Data Collection and Settlement Patterns of Immigrants

As no official data exist on immigration distribution at the neighborhood level, we construct a neighborhood-level data set by identifying homebuyers in housing transactions. The data used in this study are from the EPRC, the largest local housing-data vendor in Hong Kong. As most new immigration policies were introduced in the 2010s, our analysis starts from 2011. The ERPC housing data cover over 300,000 housing transactions from 2011 to 2016. After cleaning the data, we obtained over 240,000 housing transactions of major private housing estates for analysis.[5] Most transactions have detailed records of the transaction price, address of the estate, size, and age of the unit, and, more importantly, the names of the buyers.

Based on the names of the housing buyers, we classify homebuyers into three groups: local, Mainland Chinese, and other foreign buyers.[6] We define

[4] The housing index is available from the Department of Rating and Valuation, HKSAR. The housing price in 1999 is indexed to 100 as the base.

[5] The original dataset includes transactions of public housing and village houses, both of which are not eligible to new immigrants. Among the private housing units, we only consider large scale housing estates for analysis.

[6] The local residents speak Cantonese and their names have traditional Chinese characters. People from Mainland China speak Mandarin and their names are in simplified Chinese characters. It is easy to differentiate between the two groups through both the Chinese and English characters (pinyin system). Furthermore, as companies

Mainland Chinese and other foreign buyers as immigrants. We differentiate between immigrants from Mainland China and other countries, as the objective of most new immigration policies is to attract high-skilled immigrants from Mainland China. In contrast, policies for immigrants from other countries were prevalent when the British government governed Hong Kong. The new immigration policies do not primarily affect the number of immigrants from other countries.

We first calculate the annual number of homebuyers of different groups at the city level from 2011 to 2016. The local buyers dominate housing transactions and the ratio of immigrants to local homebuyers is about 12.1% on average at the city level from 2011 to 2016. In 2011 and 2012, however, many Mainland Chinese immigrants under the CIES purchased properties and the ratio of immigrant to local homebuyers was 16.73% and 14.48%, respectively.

According to the Hong Kong 2011 census, the city has over 200 Tertiary Planning Units (TPUs). The TPU is a geographic reference system demarcated by the Planning Department for the territory of Hong Kong. Each TPU can be considered as a neighborhood, as residents who are living in TPUs share similar living preferences and exhibit similar demographic and economic characteristics.[7] Using GIS software, we identify the location choices of Mainland Chinese and foreign immigrants by calculating their annual inflow rate across all neighborhoods. We find that the settlement patterns of foreign buyers have remained relatively stable, while the choice of neighbourhood of Mainland Chinese immigrants has changed slightly every year, as they tend to purchase new properties. In 2011, the number of Mainland Chinese buyers reached a historical high; therefore, we use the immigrant settlement pattern of 2011 to represent the location preferences of Mainland Chinese and other foreign buyers.

Figure 1A shows the distribution of Mainland Chinese buyers based on their aggregate number in each neighborhood in 2011. The dark red areas represent the relatively high Mainland Chinese immigrant inflow rate among the neighborhoods. Most Mainland Chinese immigrants live in new properties or along the seashore. Similarly, Figure 1B shows the settlement pattern of other foreign immigrants in 2011. Foreign immigrants prefer to live in neighborhoods close to the seashore.

Among the more than 200 TPUs, many are dominated by the public housing sector, which accommodates large number of low income native residents. As our study focuses on the districts where private housing estates are the major components in the local housing market, we have 98 TPUs left for analysis.[8]

(names that end with .co or .ltd) have purchased almost 10% of the units, we do not know who lives in those units, and thus exclude them from the dataset.

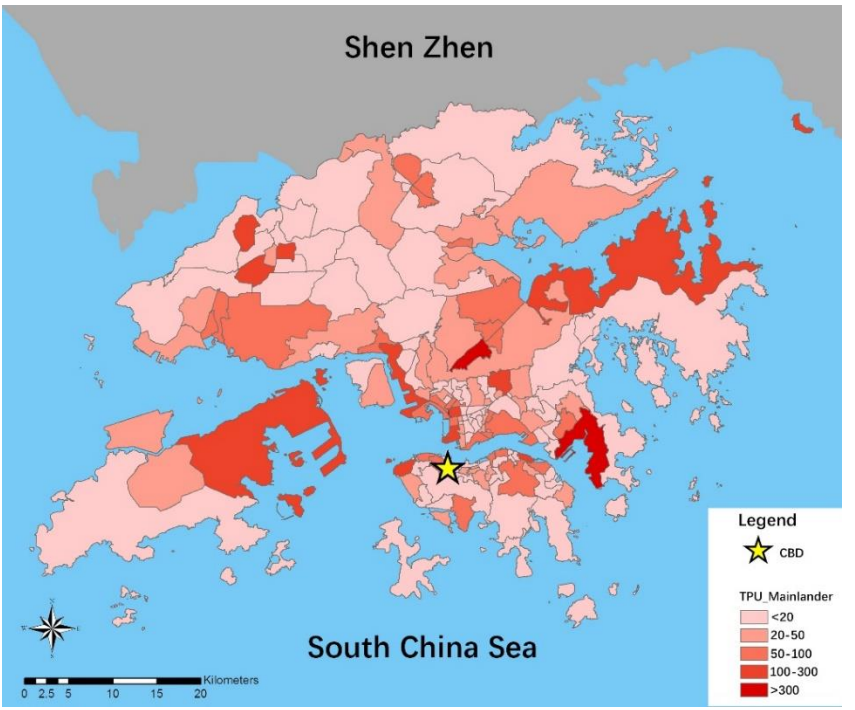
[7] The following website contains the demographic and economic characteristics of local residents in each TPU: http://www.census2011.gov.hk/en/tertiary-planning-units.html

[8] There are over 200 TPUs in Hong Kong, however, many are dominated by public

After accounting for the annual immigrant inflow in each neighborhood, we calculate the housing characteristics of the different groups, including the average housing price per square foot, average unit size (expressed in gross floor area (GFA)) and average unit age, as shown in Table 3. To control for inflation, we convert the nominal unit price into a real price measured based on the price level in 2016. The average unit price for Mainland Chinese immigrants is about 7% higher than that paid by local homebuyers. The average unit size purchased by immigrants is about 13% larger than that purchased by natives. Also, Mainland Chinese buyers tend to live in new properties as their average unit age is relatively low. These numbers indicate that compared to local homebuyers, Mainland Chinese immigrants in Hong Kong tend to be wealthier and prefer high-quality housing units. Although these patterns are useful for understanding the housing preferences of new immigrants, we are primarily interested in their settlement patterns and impact on the housing prices of natives.

**Figure 1 Spatial Distribution of Immigrant Inflow in Hong Kong – 2011**

Panel A Mainland Chinese Immigrants




housing. After excluding those TPUs, 98 TPUs are left for analysis. Monkkonen *et al.* (2012) study the spatial dynamics of the Hong Kong housing market by using 96 TPUs.

Panel B Foreign Immigrants


## 4. Empirical Strategies

To assess the impact of immigration on the local housing market, our basic approach is to regress the housing price on the presence of immigrant inflow (i.e. the number or share of immigrants in each neighborhood). Existing studies use the city or small districts (neighborhoods) as the unit of observation. As our data is the annual flow of immigrants rather than the level of immigration, we use the log number of immigrants as a variable of interest, similar to Accetturo *et al.* (2014). The first empirical model focuses on neighborhood level data and takes the following form:

$$\log(Price\_Local_{it}) = constant + \alpha_1 \log(Immigrants_{jt}) + \alpha_2 Housing_{jt} + \alpha_3 NB_j + \alpha_4 Year_t + \varepsilon_{jt} \quad (1)$$

where $j$ and $t$ represent neighborhood and year, respectively. The dependent variable is the natural logarithm of the average housing price paid by *natives* in neighborhood $j$ in year $t$. The main independent variable is the log number of immigrant homebuyers in neighborhood $j$ in year $t$. $Housing_{jt}$ indicates the housing attributes of natives in neighborhood $j$ in year $t$, including average GFA and unit age. $NB_j$ is the neighborhood fixed effect to account for time-invariant

**Table 3 Variable Definitions and Summary Statistics**

| Variable | Definition | Obs. | Mean | Std. Dev |
|---|---|---|---|---|
| *Price_Local* | Average housing price of natives at neighborhood level, by TPU/Year (HKD per square feet) | 588 | 8386.745 | 2846.589 |
| *Price_Mainland* | Average housing price of Mainland Chinese buyers at neighborhood level, by TPU/Year (HKD per square feet) | 548 | 8966.548 | 3415.998 |
| *Price_Foreigner* | Average housing price of other foreigner buyers at neighborhood level, by TPU/Year (HKD per square feet) | 548 | 8576.432 | 3132.114 |
| *GFA_Local* | Average gross floor area of natives at neighborhood level, by TPU/Year (square feet) | 588 | 764.6531 | 242.7868 |
| *GFA_Mainland* | Average gross floor area of Mainland Chinese buyers at neighborhood level, by TPU/Year (square feet) | 548 | 865.2299 | 379.5058 |
| *GFA_Foreigner* | Average gross floor area of other foreigner buyers at neighborhood level, by TPU/Year (square feet) | 548 | 835.2152 | 329.2666 |
| *Age_Local* | Average unit age of natives at neighborhood level, by TPU/Year (Year) | 588 | 18.838 | 9.1748 |
| *Age_Mainland* | Average unit age of Mainland Chinese buyers at neighborhood level, by TPU/Year (Year) | 561 | 16.1498 | 9.9267 |
| *Age_Foreigner* | Average unit age of other foreigner buyers at neighborhood level, by TPU/Year (Year) | 553 | 18.1945 | 9.9756 |
| *Immigrants* | Number of non-native buyers, by TPU/Year | 588 | 45.0136 | 71.5815 |
| *Mainland* | Number of Mainland Chinese buyers, by TPU/Year | 588 | 29.3827 | 51.4874 |
| *Foreigner* | Number of other foreigner buyers, by TPU/Year | 588 | 15.631 | 29.2094 |

***Note:*** SD refers to standard deviation.

heterogeneity among the neighborhoods, and $Year_t$ is the year dummy variable to control for the business cycle. $\varepsilon_{jt}$ is an error term.

Equation (1) can capture the effect of the immigrant inflow rate on the average housing value for natives at the neighborhood level. The coefficient $a_1$ can be interpreted as the elasticity of housing price with respect to the number of immigrants in the neighborhoods. The sign of $a_1$ depends on the change in the level of amenities that immigrants bring about. If local residents perceive that immigrant inflow contributes to improvements in neighborhood amenities, $a_1$ should be positive, and local buyers are willing to pay a premium to live in the neighborhoods where the immigrants settle. Conversely, a negative sign implies the opposite.

However, Equation (1) is unlikely to provide an accurate estimation of the impact of immigrants on the housing value of the natives because immigration inflow may be endogenous. One reason for this endogeneity is reverse causality. For instance, immigrants who arrived through the CIES may prefer to buy new properties with great potential for value-appreciation. The second reason is omitted variables. High-income immigrants might prefer living close to good schools. New constructions might also increase property value and attract immigrants.

To address the endogeneity issue, we adopt an instrumental variable (IV) approach. The instrument must be correlated with the inflow of immigrants into a neighborhood but uncorrelated with the unobserved component of housing price in that neighborhood subsequent to their arrival. We use "shift-share" as an instrument, the idea being that immigrants tend to follow the settlement patterns of previous immigrants of the same ethnicity. Immigrants from the same ethnic group may have similar location preferences, or tend to follow their ethnic networks. Card (2001) develops this instrument, which has been widely used in the literature on migration (Accetturo *et al*., 2014; Fischer, 2012; Gonzales and Ortega, 2013; Ottaviano and Peri, 2006, 2007; Saiz, 2007).

We calculate the distribution of immigrants from each country in each neighborhood in 2011, the first year for which we have data, to predict the settlement patterns of future immigrants. This prediction is exogenous to neighborhood- and time-specific shocks. We assume that the distribution of immigrant inflow among the TPUs in 2011 is not driven by omitted variables which can predict future housing price in each district. This assumption is quite plausible because natives should be more familiar with the local housing market compared to new immigrants. The formula is expressed in Equation (2):

$$Predict\_immigrant_{jt} = \sum_{k=1}^{n} \Omega_{k,j,2011} \times Immigrants_{k,t} \quad (2)$$

where $\Omega_{k,j,2011}$ represents the share of immigrant inflow from country $k$ to neighborhood $j$ over the total number of immigrants from country $k$ in 2011.

$Immigrants_{k,t}$ is the number of immigrants from country $k$ in year $t$. Summing up all of the immigrant inflows from all countries predicts the number of immigrants in each neighborhood. In our study, we consider only immigrants from Mainland China and other foreign countries; thus, $n$ in Equation (2) equals 2.

## 5. Empirical Results

We test the results of immigrant inflow on housing value by using neighborhood level data from Equation (1). The empirical analysis encompasses three examinations: the effects of total immigrant inflow, Mainland Chinese immigrant inflow, and other foreigner inflow on neighborhood value. As some TPU-year observations have zero Mainland Chinese and/or other foreign homebuyers, we take the logarithm of the number of immigrants plus one to avoid the loss of observations. Standard errors in all regressions are clustered at the neighborhood level. Table 4 shows the results.

The first three columns report the ordinary least square (OLS) regression results on the impact of immigrants on neighborhood value. Column (1) shows that a 1% increase in the number of immigrants is associated with a 0.01% decrease in the average housing price paid by natives and the result is statistically insignificant. Similarly, Columns (2) and (3) show that both Mainland Chinese and foreign buyers have small and insignificant impacts on the average housing price of local buyers. As mentioned earlier, the OLS results are unlikely to yield an accurate estimation because the settlement patterns of immigrants tend to be endogenous. Instead, Columns (4) to (6) report the IV regression results. The first stage regressions for Columns (4)-(6) are all statistically significant, and the F statistics are reasonably large, both of which indicate that the instruments used in these regressions are likely to be valid. The second stage regressions show that recent immigrants do not have much impact on the housing values of natives at the neighborhood level.

As we do not have data on the immigrant nationalities, one may question the credibility of the IV, as the instrument is based on the distinction between Mainland Chinese and foreign immigrants. We provide an additional informal test to examine the validity of the IVs. Following the approach of Arzaghi and Henderson (2008), we include the instrument in the OLS equation. If the IV is not valid, the coefficients of immigrants should change substantially, as IV correlates with unobserved characteristics of housing price in Hong Kong. Table 5 shows the results. We find that the coefficients on the log number of immigrants are close to the coefficients in Table 4. The coefficients on IVs are all close to 0 and insignificant. Thus, we believe that the IV approach provides an accurate estimation of the relationship between immigrant inflow and the housing price of natives.

**Table 4 Immigrant Inflow and Average Housing Price for Local Homebuyers at Neighborhood Level**

| | (1) Immigrant Overall | (2) Mainland Chinese Buyers | (3) Foreign Buyers | (4) Immigrant Overall | (5) Mainland Chinese Buyers | (6) Foreign Buyers |
|---|---|---|---|---|---|---|
| log (number of immigrants) | -0.0088 | 0.006 | -0.0038 | -0.0092 | 0.0057 | 0.0016 |
| | (0.0093) | (0.0083) | (0.0113) | (0.0194) | (0.0331) | (0.0266) |
| log (GFA) | 0.348*** | 0.3413*** | 0.3463*** | 0.3482*** | 0.3415*** | 0.3431*** |
| | (0.1136) | (0.1135) | (0.1133) | (0.0445) | (0.0462) | (0.0465) |
| log (Age) | -0.0509*** | -0.0311** | -0.043** | -0.0515* | -0.0314 | -0.0352 |
| | (0.0176) | (0.0154) | (0.0178) | (0.0303) | (0.0365) | (0.0389) |
| Neighborhood Fixed Effect | Y | Y | Y | Y | Y | Y |
| Time Fixed Effect | Y | Y | Y | Y | Y | Y |
| R Squared | 0.964 | 0.9639 | 0.9638 | 0.964 | 0.9639 | 0.9638 |
| Observations | 588 | 588 | 588 | 588 | 588 | 588 |
| First Stage | | | | 1.6318*** | 1.8943*** | 1.4908*** |
| | | | | (0.2346) | (0.4414) | (0.2587) |
| *F*-Stat | | | | 44.56 | 33.93 | 53.42 |
| Adjust R Squared | | | | 0.9009 | 0.8863 | 0.8549 |
| Observations | | | | 588 | 588 | 588 |

***Note:*** The dependent variable is the log average housing price for a native homebuyer in the neighborhood; *t*-statistics are in parentheses. *(p < 0.10), **(P < 0.05), ***(p < 0.01)

**Table 5 Results of OLS Regressions by Adding IV as Covariate**

| | (1) Immigrant Overall | (2) Mainland Chinese Buyers | (3) Foreign Buyers |
|---|---|---|---|
| log (number of immigrants) | -0.0088 | 0.006 | -0.0042 |
| | (0.0101) | (0.0084) | (0.0119) |
| log (GFA) | 0.348*** | 0.3413*** | 0.3465*** |
| | (0.114) | (0.1143) | (0.114) |
| log (Age) | -0.0508*** | -0.0311** | -0.0432** |
| | (0.0176) | (0.0154) | (0.0179) |
| IV | -0.0007 | -0.0007 | 0.0087 |
| | (0.0487) | (0.1116) | (0.0644) |
| Neighborhood Fixed Effect | Y | Y | Y |
| Time Fixed Effect | Y | Y | Y |
| R Squared | 0.964 | 0.9639 | 0.9638 |
| Observations | 588 | 588 | 588 |

***Note:*** *t*-statistics in parentheses. Significant levels: *($p < 0.10$), **($P < 0.05$),***($p < 0.01$).

In sum, through the neighborhood-level estimation, we find the recent high-skilled immigrants do not create a negative effect on neighborhood housing values of natives in Hong Kong.

## 6. Conclusion

This study examines the impact of high-skilled and high-income immigrants on the housing market in Hong Kong from 2011 to 2016. Using housing transaction data, we examine the effect of immigrant inflow on housing values of local homebuyers. The neighborhood level regression models show that new immigrants in Hong Kong do not generate negative effects on the housing value for local residents. The result seems to favor the investment immigration policies.

Hong Kong has been an immigrant society for hundreds of years. Foreign immigrants began working in Hong Kong when it was under the control of the British government. Thus, it is not surprising that other foreigners do not generate negative impacts on the housing value of Hong Kong natives due to racial segregation. In contrast, the massive immigration of high-skilled individuals from Mainland China has occurred for only about a decade. Although Mainland Chinese immigrants are the same ethnic group as the local Hong Kong residents, the two groups are culturally different. However, these high-skilled groups are not perceived to be negative externalities by the local residents, even though their degree of social assimilation is relatively low.

There are several analytical challenges for further research. First, data limitations prevent us from differentiating between the immigrants that have lived in Hong Kong for years and recent immigrants. This could be an important difference, although we believe that most buyers from Mainland China are recent immigrants, especially those who immigrated though the CIES. Second, there could be different explanations for our empirical findings. For example, as an immigrant society, local residents in Hong Kong may be more tolerant toward new immigrants, or may not perceive highly skilled immigrants as negative externalities compared to low-skilled immigrants. Future studies should examine which perspective dominates. Third, Hong Kong is a global city and an immigrant society, and differs from many other cities around the world; therefore, future studies can conduct similar examinations on the impact of high-skilled immigrants on the housing market in other cities.

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