

**MARKET SENTIMENT AND HOUSING PRICES
AND POLICIES IN HONG KONG
HIGH-RISE RESIDENTIAL PROPERTIES**

LUK WANG KWONG, JOHN

UNIVERSITI SAINS MALAYSIA

2023

**MARKET SENTIMENT AND HOUSING PRICES
AND POLICIES IN HONG KONG
HIGH-RISE RESIDENTIAL PROPERTIES**

by

LUK WANG KWONG, JOHN

**Thesis submitted in fulfilment of the requirements
for the Degree of
Doctor of Philosophy**

July 2023

ACKNOWLEDGEMENT

The successful completion of this thesis and my long PhD journey would not have come to an end without the kind support of a few parties. I would like to acknowledge all of them who provided me with invaluable assistance throughout my study. First of all, I would like to express my wholehearted gratitude to my main supervisor Dr. Chan Tze Haw for his patience, guidance, encouragement and unfailing support throughout the course of my PhD study. His throughout guidance in every step of this thesis writing and empirical analysis as well as the guidance regarding the use of relevant statistical software's has been very kind and helpful. I would like to pay special regard to my co-supervisor Dr. Hong Meen Chee for her kind support, guidance and patience in the thesis writing and relevant research papers. I would also like to thank my initial co-supervisor Dr. CHU Ei Yet for his kind help in my research proposal. I cannot forget to express my special regards to Dr. TAN Cheng Ling for her guidance and encouragement at her visits to Hong Kong. Finally, I would like to thank Mr. Abdul Saqib a fellow PhD candidate in GSB who offer his assistance in performing statistical analysis and thesis proofreading and formatting.

TABLE OF CONTENTS

ACKNOWLEDGEMENT.....	ii
TABLE OF CONTENTS	iii
LIST OF TABLES	vii
LIST OF FIGURES	viii
LIST OF ABBREVIATIONS	x
LIST OF APPENDICES	xii
ABSTRAK	xiii
ABSTRACT.....	xv
CHAPTER 1 INTRODUCTION.....	1
1.1 Introduction	1
1.2 Background of the Study.....	1
1.2.1 Hong Kong Property Development	12
1.2.2 Property Investment and Housing Affordability	18
1.2.3 Housing Supply in Hong Kong	23
1.2.4 The role of Government in Hong Kong Housing Policy	30
1.3 Housing Policies- Comparison between Hong Kong and Singapore.....	30
1.3.1 Social and Economic Development –in Hong Kong and Singapore.....	31
1.3.2 Housing Affordability - in Hong Kong and Singapore	33
1.3.3 Public Housing Policies - in Hong Kong and Singapore	34
1.3.4 Service Providers, House Financing & Subsidies - in Hong Kong and Singapore.....	42
1.4 Market sentiments in Property Market.....	44

1.5	Comparison Study in Housing Policies of Hong Kong and Singapore.....	46
1.6	Research Questions	48
1.7	Research Objectives	48
1.8	Significances of the Study.....	49
1.9	Organization of the Thesis	51
CHAPTER 2 LITERATURE REVIEW		53
2.1	Introduction	53
2.2	Literature Review related to the Hong Kong Property Market.....	53
2.2.1	Hong Kong Housing Affordability	54
2.2.2	Property Market Developments	57
2.2.3	Property Market Structure	59
2.2.4	Latest Hong Kong Housing Policy (2018).....	62
2.3	Examples of Hong Kong High-Rise Residential Properties	64
2.3	Literature Review on Market Sentiment.....	66
2.4	Role of Government in Housing Policies	75
2.5	Housing Policies - Hong Kong and Singapore	81
CHAPTER 3 RESEARCH METHODOLOGY.....		85
3.1	Introduction.....	85
3.2	Research Design.....	85
3.3	Data Description	86
3.4	Sentiment Index Construction for HK Housing Market	88
3.5	Housing Price Indices	91
3.6	Estimation Method- Nonlinear Autoregressive Distributed Lag Model	92
3.7	Sentiment Index Construction	96

3.8	Diagnostic Statistics:	105
3.8.1	Unit Root Testing.....	106
3.8.2	Bound Test	107
3.8.3	Serial Correlation	108
3.8.4	Statistical Stability	108
3.9	Summary of methodology adopted.....	110
CHAPTER 4 DATA ANALYSIS AND FINDINGS		111
4.1	Introduction.....	111
4.2	Comparison of Housing Sentiments and Housing Price Indices.....	111
4.3	Asymmetric Effect of Market Sentiments- Application of NARDL Model ..	120
4.4	Contributing Factors of Success of Public Housing Policies in Singapore ...	132
4.4.1	Political Commitment and Determination	133
4.4.2	Professional and Efficient Administration.....	134
4.4.3	Robust Land Acquisition Policies.....	135
4.4.4	The Effective Housing Finance System.....	137
4.5	Macro-Prudential Measures in Countering Potential Property Bubbles.....	137
4.6	Major discrepancies in the housing policies of Hong Kong and Singapore..	144
4.7	Discussion	159
4.7.1	Discussion on the Asymmetric Effect of Housing Sentiments	159
4.7.2	Discussion on Hong Kong and Singapore housing policies	165
4.8	Implications of the findings	170
4.8.1	Singapore Prime Minister Lee Hsien Loong: “one country two systems may not last unless Hong Kong’s housing crisis is fixed”	174

4.8.2	“Housing Should Be for Living In, Not for Speculation”, President Xi JinPing Said in the 19 th National Congress of the Chinese Communist Party in 2017’.....	176
4.8.3	Summary.....	195
CHAPTER 5 DISCUSSION AND CONCLUSION.....		201
5.1	Introduction.....	201
5.2	Summary on the findings.....	201
5.3	Final Recommendations.....	202
5.4	Limitations of the study	203
5.5	Recommendations for future research	204
5.6	Conclusion	204
REFERENCES.....		207
APPENDICES		
LIST OF PUBLICATIONS		

LIST OF TABLES

	Page
Table 1.1 Price Indices of four Classes of Residential Properties in Sq. meters	10
Table 1.2 Government Revenues and Land Sales (Billions HK\$).....	26
Table 1.3 Social and Economic Indicators of Hong Kong and Singapore 2016	32
Table 3.1 Sentiment Index Proxies, Categories and Symbols	87
Table 3.2 Sentiment Index Proxies, Categories and Symbols	98
Table 3.3 Sentiment Index Proxies, Categories and Symbols	99
Table 3.4 Sentiment Index-Total Variance Explained (Eigenvalues)	100
Table 3.5 Principle Components Score (Eigenvectors-loadings)	101
Table 3.6 Factor Coefficients: (Weight of the variables in factor)	101
Table 3.7 Rotated loadings: $L * \text{inv}(T)'$ (Kaiser row weighting).....	102
Table 3.8 Descriptive Statistics of Independent variables.....	104
Table 3.9 Co-relation Coefficients of Independent variables.....	105
Table 4.1 Data Properties of Variables	121
Table 4.2 NARDL Cointegration Test & Housing-Sentiment Model Selection .	124
Table 4.3 NARDL Estimation and Asymmetric Effects	126
Table 4.4 Comparative Analysis of Housing Policies – Hong Kong and Singapore.....	156
Table 4.5 Outcome variables that indicate the state of housing affordability issues in Hong Kong.....	158

LIST OF FIGURES

	Page
Figure 1.1 Affordability in the Largest Housing Markets	2
Figure 1.2 Hong Kong Housing Price Index and Annual Changes (%)	7
Figure 1.3 Hong Kong Housing Price Movements.....	14
Figure 1.4 Housing Affordability, 2018	20
Figure 1.5 Home ownership ratio, household income, flat prices 1997-2019.....	21
Figure 1.6 Hong Kong Home Purchase Affordability and Home Ownership.....	22
Figure 1.7 Housing Affordability in Major Housing Markets.....	34
Figure 1.8 Public housing in Hong Kong and Singapore.....	35
Figure 1.9 Hong Kong Land Area Analysis	37
Figure 1.10 Land Utilization Map of Hong Kong with Target Districts.....	39
Figure 1.11 Singapore land uses percentage.....	40
Figure 1.12 Hong Kong land uses percentage.....	41
Figure 1.13 Public Housing - Kin Ming Estate 2015 05.....	65
Figure 1.14 Mei Foo Sun Chuen is the earliest and largest private housing estate in Hong Kong.....	66
Figure 3.1 Methodological Framework	88
Figure 3.2 Summary of Research Method Framework and Flow... ..	109

Figure 4.1	Housing Sentiment Index for the Whole Period of the Investigation	113
Figure 4.2	Quarterly Housing Sentiments Index (Q2-2002 to Q2-2019)	114
Figure 4.3	HPI40 and Sentiment Index.....	115
Figure 4.4	HPI70 and Sentiment Index.....	116
Figure 4.5	HPI100 and Sentiment Index.....	117
Figure 4.6	HPI160 and Sentiment Index.....	119
Figure 4.7	Cumulative Sum and Cumulative Sum of Square Graph of HPI40 Model	129
Figure 4.8	Cumulative Sum and Cumulative Sum of Square Graph of HPI70 Model	129
Figure 4.9	Cumulative Sum and Cumulative Sum of Square Graph of HPI160 Model	130
Figure 4.10	Cumulative Sum and Cumulative Sum of Square Graph of HPI100 Model	130
Figure 4.11	Multiplier Graph of HPI40 Model (DV)	131
Figure 4.12	Multiplier Graph of HPI70 Model (DV)	131
Figure 4.13	Multiplier Graph of HPI160 Model (DV)).....	131
Figure 4.14	Multiplier Graph of HPI100 Model (DV)	131
Figure 4.15	Hong Kong: Housing Prices and Completions... ..	139
Figure 4.16	Singapore: Housing Prices and Completions.....	140

LIST OF ABBREVIATIONS

ADF	Augmented Dickey Fuller
AIC	Akaike Info Criterion
ARDL	Autoregressive Distributed La
$Adj. R^2$	Adjusted R-Square
CCCI	Chinese Consumer Confidence Index
CPF	Central Provident Fund
CUSUM	Cumulative Sums
CUSUMSQ	Cumulative Sums of Squares
$CRISES_t$	Dummy variable at time t
DF-GLS	Dickey Fuller Generalized Least Squares
ECM	Error Correction Model
ESI	Explicit Sentiment Index
FA-PCA	Factor Analysis –Principle Component Analysis
GDP	Gross Domestic Product
HDB	Housing and Development Board of Singapore
HSI	Hang Seng Index
HK	Hong Kong
HK_HPI	Hong Kong Housing Price Index
HKD	Hong Kong dollars
HKMA	Hong Kong Monetary Authority
HOS	housing ownership scheme
HPI	House Price Index
HPU	Housing Primary Trading Volume Units
HPV	Housing Primary Trading Value (HK\$)
HSIP	Hang Seng Property Index
HSIPV	Hang Seng Property Index Volume
HSU	Housing Secondary Trading Volume Units
HSV	Housing Secondary Trading Value (HK\$)

I (0)	Level Stationary
I (1)	First-difference Stationary
ISI	Implicit Sentiment Index
JB	Jarque-Bera
LM	Lagrange Multiplier
M3	Hot Money
NARDL	Nonlinear Autoregressive Distributed Lag
NBHL	New Bank Housing Loan
OECD	Organization of Economic Cooperation and Development
PP	Phillip-Perron
PRC	People's Republic of China
S&P	Standard and Poor
SAR	Special Administrative Region
SENT	Sentiment Index
SENT (-)	Negative Sentiment
SENT (+),	Positive Sentiment
SG	Singapore
SI	Sentiment Index
SpcN	Principal component score
Sqm	Square Meter
USA	United States of America
USCCI	United States Consumer Confidence Index
VAR	Vector autoregression

LIST OF APPENDICES

- | | |
|------------|---|
| APPENDIX A | Hong Kong additional private residential property transaction tax and stamp duties. |
| APPENDIX B | Singapore additional private residential property transaction tax and stamp duties. |

SENTIMEN PASARAN, HARGA DAN DASAR BAGI PERUMAHAN BERTINGKAT TINGGI DI HONG KONG

ABSTRAK

Dengan harga yang melambung tinggi dan episod pesat ledakan ekonomi dan kegagalan, teori kewangan standard tidak dapat menjelaskan gelagat pasaran perumahan di Hong Kong. Jurang yang ketara antara penjelasan asas pasaran dan harga perumahan sebenar, membawa kepada ramalan yang tidak sesuai dan implikasi dasar yang mengelirukan. Kajian ini dibahagikan kepada dua bahagian: analisis ekonometrik situasi dan analisis dasar dengan cadangan. Untuk analisis ekonometrik, Indeks Sentimen hartanah untuk pasaran hartanah kediaman Hong Kong dibina menggunakan Analisis Faktor-Analisis Komponen Prinsip. Kesan asimetri pada indeks sentimen untuk harga hartanah HK dikaji. Metodologi ARDL bukan linear Shin dan Greenwood-Nimmo digunakan pada set data yang dipilih dari Q1-2002 hingga Q2-2019. Keputusan menunjukkan kesan asimetri jangka pendek yang ketara, asimetri pelarasan jangka pendek dan kesan asimetri kumulatif jangka pendek dalam keempat-empat kelas harga hartanah yang digunakan untuk kajian ini. Selanjutnya, keputusan kointegrasi jangka panjang didapati penting. Selain itu, kesan jangka pendek kekal sehingga kesan asimetri jangka panjang dalam semua model, tetapi hanya ketara dalam dua model sahaja (HK_HPI100 dan HK_HPI160) pada tahap keertian 10%. Walau bagaimanapun, keputusan daripada ujian Wald menunjukkan kesan asimetri jangka pendek dan jangka panjang yang ketara terhadap harga perumahan. Akhir sekali, kajian ini menunjukkan keupayaan ramalan yang baik bagi Indeks Sentimen yang dibina. Asimetri

sentimen ini memberikan penjelasan yang baik untuk ketidakseimbangan besar antara penawaran dan permintaan untuk empat kelas hartanah kediaman yang berbeza di Hong Kong dalam tempoh sampel. Kajian ini juga memperkenalkan konsep Indeks Harga (PI) = Indeks Sentimen Pasaran Eksplisit (EMSI) + Indeks Sentimen Pasaran Tersirat (IMSI). Ia juga menunjukkan bahawa dasar cukai urus niaga harta kerajaan yang tinggi bukanlah penyelesaian kepada masalah asas bekalan dan permintaan. Untuk analisis dasar perbandingan Singapura dan Hong Kong dibuat. Ia mengkaji bahawa terdapat sejumlah besar perbezaan antara kedua-dua bandar ini. Disebabkan perbezaan asas individu, tiada banyak Hong Kong boleh diterima pakai daripada amalan Singapura setakat hari ini. Hasil asasnya ialah Singapura menikmati masyarakat yang lebih stabil dengan majoriti penduduk memiliki hartanah kediaman mampu milik mereka sendiri dan Hong Kong menikmati kekayaan yang lebih besar yang dibina dalam hartanah kediaman mereka. Kajian ini mengesahkan bahawa masalah perumahan adalah masalah pelbagai pembolehubah dan sangat rumit. Ia juga menunjukkan bahawa dasar kerajaan memainkan peranan yang amat penting dalam penyelesaian masalah tersebut. Implikasi dasar kajian ini menunjukkan bahawa dasar kerajaan adalah amat penting dalam penginapan perumahan di Hong Kong.

MARKET SENTIMENT AND HOUSING PRICES AND POLICIES IN HONG KONG HIGH-RISE RESIDENTIAL PROPERTIES

ABSTRACT

With skyrocketing prices and rapid episodes of economic booms and busts, standard financial theories could not explain the housing market behaviour in Hong Kong. The significant gap between the explanation of market fundamentals and the actual housing prices, leading to inappropriate predictions and misleading policy implications. This study is divided into two parts: an econometric analysis of the situation and a policy analysis with recommendations. For the econometric analysis a property Sentiment Index for Hong Kong residential property market is constructed using the Factor Analysis-Principle Component Analysis. The asymmetric effects on the sentiment index for the HK property prices are studied. The nonlinear ARDL methodology of Shin and Greenwood-Nimmo is used on the dataset chosen from Q1-2002 to Q2-2019. The results show significant short-run asymmetric effects, short-run adjustment asymmetry and short-run cumulative asymmetric effects in all four classes of property prices used for this study. Further, the long-run cointegration results are found to be significant. Moreover, the short-run effects last into the long-run asymmetric effects in all models, but are only significant in only two models (HK_HPI100 and HK_HPI160) at 10% significance level. However, the results from Wald test exhibit significant short-run and long-run asymmetric effect of sentiments on housing prices. Finally, this study shows a good predictive ability of the constructed

Sentiment Index. These sentiment asymmetries provide good explanations for the great imbalances between the supply and demand for the four different classes of residential properties in Hong Kong during the sample period. For instance, demand and supply for small-sized flats were driven by fundamental needs but less sentiment-driven. Whereas the large-sized condominiums were mostly traded by speculative investors that were sentimental-driven and profit-oriented. This study also implies. It also shows that the government high property transaction tax policy is not a solution to the fundamental supply and demand problem, especially for small-sized flats. For policy analysis a comparison of Singapore and Hong Kong is made. It reviews that there are a large number of differences between these two cities. Due to individual fundamental differences nothing much Hong Kong can be adopted from the Singapore practice as of today. The basic results are Singapore enjoys a more stable society with the majority of the population owning their own affordable residential properties and Hong Kong enjoys a much greater wealth built in their residential properties. This study confirms that the housing problem is a multi-variable and very complicated problem. It also shows that government policy plays an extremely important role in the resolution of the problem. The policy implication of this study is that it shows that government policy is of utmost importance in the housing accommodation in Hong Kong. The recommendations for the Hong Kong government are to: increase the supply of land for housing; develop Northern Lantau island; develop Northern New Territories, stop the mega reclamation between the Hong Kong Island and the Lantau Island to save money and time; increase building height; increase plot ratio of the land used; increase proportion for public housing and decrease that for private housing; implied the

design and lower the costs for public housing; expedite the building of simplified low cost housing; maintain a viable and active high end housing property market. In this way hopefully Hong Kong can continue on with prosperity and stability.

CHAPTER 1

INTRODUCTION

1.1 Introduction

Affordable housing, the basic human need has become a critical problem in the global cities with direct impacts on people's well-being. While a well-functioning housing market may augment the economic efficiency and productivity. Whereas, its mishandling may lead to serious economic and political crises. According to [McKinsey \(2017\)](#), "One feeling unites billions of people in cities around the world: a sense of sticker shock whenever they attempt to find a new home. From London to Lagos, housing costs are creating financial stress for a large share of the world's urban residents."

The housing problem in Hong Kong is one of the most pressing issues, due to land constraints and speedy urbanization that led to supply- demand imbalances. Hong Kong is the worst among global cities providing affordable housing ([Leung, Ng, & Tang, 2020](#)). The Urban Reform Institute for the ninth year in a row, ranked Hong Kong the least affordable city in the world ([Demographia International Housing Affordability Survey, 2021](#)). According to [Demographia \(2021\)](#) an apartment in Hong Kong costs 20.7 times the gross median annual income as for 2020 estimates. The issue of housing affordability aggravated further in recent years due to the increasing demand, limited supply, COVID-19 shocks, and property price hikes. Figure 1.1 exhibits, the housing unaffordability in Hong Kong as compare to other largest housing markets.

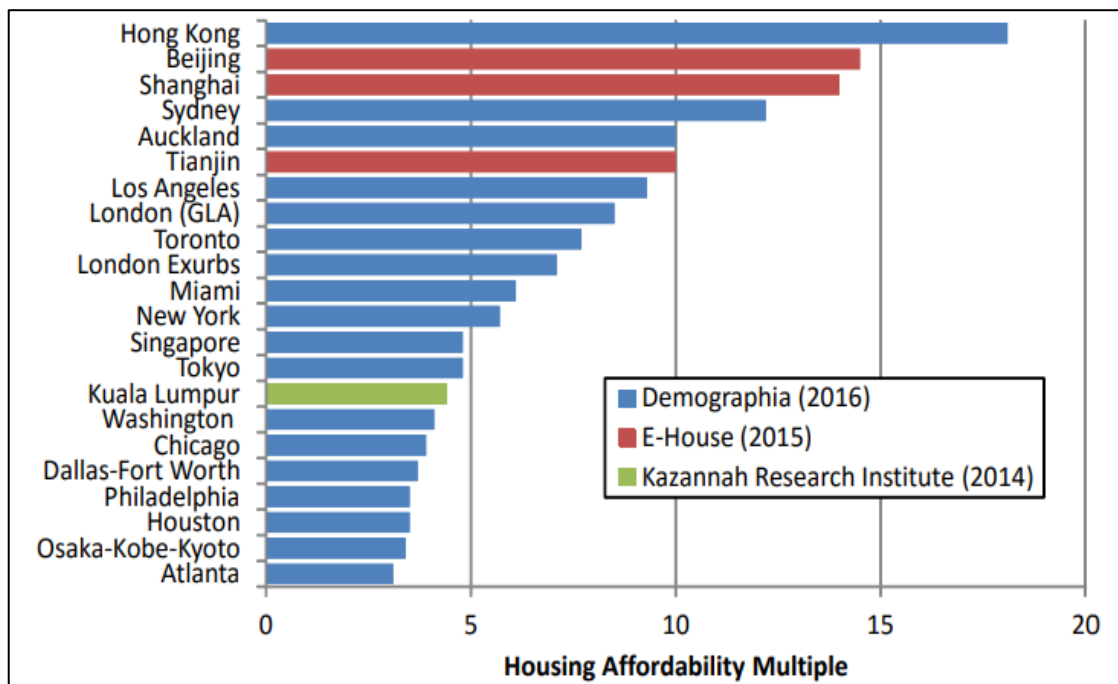


Figure 1.1: Affordability in the Largest Housing Markets

Source: E-House, Estimated from Khazannah, Demographia

Note: The included housing markets have population more than 5,000,000 at times of the surveys.

Within the period of four years (June-2014 to May-2018), the per square feet home price in Hong Kong has risen by 49.7%, from HK\$ 14,601 to HK\$ 21,858. Whereas, the build-up land area only increased to 400 hectares from 2005-2015, this constitute 1/5th of the same increase during 1995-2005 ([Task Force on Land Supply, HK, 2018](#)). Moreover, the number of annually completed houses in Hong Kong reduced to 25700 (2007-2016) from 59800 (1997-2006) ([Rating and Valuation Department, HK, 2016](#)). On the other hand, the inflation adjusted household income in Hong Kong only increased by 0.28% per year from 2004 to 2016 ([The Hong Kong Federation of Trade Union, 2018](#)), and the house price-to-wage ratio increased from 100 in 1982 to 270 in 2018 ([Leung et al., 2020](#)). The rate of increase in household income could not keep up with the rising housing prices. It is to be mentioned that the house price to median household monthly

income significantly increased to 14.0 in 2019 from 6.0 in 2004 ([Mainland Property Price Index, 2019](#)). Hence, it confirms the housing affordability issue in Hong Kong. The escalated housing prices will be pushed further by the accumulative wealth effect from the rising stock market, high employment rate, and booming economic growth.

The real estate developments affect the Hong Kong population in various weights. The increasing housing prices is not a major concern for wealthy individuals due to their citizens because they are majorly dependent on the provision high purchasing power. But the increasing housing prices is a major problem for the low and middle income group of government public housings (small-to-medium size) which supply is insufficient. Thereby the increasing housing prices and insufficient supply of government provided housing significantly influences the living standards of low- and middle-income citizens.

The supply-demand imbalances and speculative investment in the property sector further deepened the housing unaffordability and widened the income gap¹. The problem becomes more complicated as the middle-class accounts for the majority of the Hong Kong population. This increasing income gap pose a significant threat to the socio-economic development of Hong Kong. In past, various independent studies and government institutions reported but the issue still remains unsolved.

The house price dynamics has always brought the attention of various academics and policy makers. As house is a durable product therefore its price is determined as an asset ([Wang & Hui, 2017](#)). The classic theory postulate that the price in housing market is determined by the forces of

¹ When the middle- and low-income class citizens spends most of their earnings on housing, it widens the income gap between upper and lower-middle class.

supply and demand ([DiPasquale & Wheaton, 1996](#)). So, ideally the market forces, supply and demand, should determine the price in housing market. But other than market fundamentals, excessive market expectations also play a crucial role in the rising house price (see [Case & Shiller, 2003](#)). The market expectations formulate future market demand and that resultantly derives market (house) price. Hence, the irrational property market behavior (i.e. regarding future market prospects) may lead the house price depart from market fundamentals ([Jin, Soydemir, and Tidwell 2014](#)). Hence, the psychological and sentimental factors have the potential to influence the house prices in Hong Kong.

Since the last two decades, the increase in financial volatility and the winning of Nobel prices by Robert Shiller (in *Behavioral Finance*, 2013) and Richard Thaler (in *Behavioral Economics*, 2017) have directed the attention of different academicians towards the investors' sentiment. Research found that, apart from market fundamentals, investors' psychology and irrational behaviors also affect stock prices ([Hui, Dong, Jia & Lam, 2017](#); [Lam & Hui, 2018](#)). The investor sentiment is defined as the uncertainty of future cash flows and the risk associated with future returns that cannot be determined by the existing market information ([Baker & Wurgler, 2007](#)). The studies on investor sentiments are designed to find whether higher investor sentiments (optimism) in the current period leads to the reduction of future returns or whether the magnitude of sentiment varies across different asset classes in terms of future prices and returns. For example, the asset classes that are "hard to value" and have "limited arbitrage opportunity" are expected to be more sensitive to investor sentiments (Baker & Wurgler, 2007).

Various studies have examined the effect of sentiments on stock market returns, e.g. [Baker and Wurgler \(2006, 2007\)](#) confirmed the effect of sentiment on stocks returns in both cross-

sectional and longitudinal settings. Likewise, the significant effect of sentiment were found: on stock returns: in 18 industrial economies ([Schmeling, 2009](#)), in emerging Asian markets ([Tuyon, Ahmad & Matahir, 2016](#); [Anusakumar & Wooi, 2017](#)), during the month of Ramadan and after Hajj Pilgrimage ([Białkowski, Etebari & Wisniewski, 2012](#)), and on asset valuations ([Brown & Cliff, 2005](#)). Moreover, [Huang et al. \(2015\)](#) found that investor sentiment is a powerful predictor of stock returns. Similarly, [Chen, Yu, Jin, and Bao \(2019\)](#) found comovements between internet finance investors sentiments and stock returns.

Since the market sentiment literature is relatively new, most of the past studies are conducted to examine the sentiment effect on stock markets. However, the real estate markets received less attention as compare to the stock markets, despite the fact that a large part of the uncertainty in real estate market cannot be explained by the rational behaviours and market fundamentals. Therefore, the influence of irrational behaviours and related psychology of investors on the real estate market warrant a good investigation.

[Hui and Wang \(2014\)](#) argued that the housing demand is also partially dependent on the investor sentiments, but limited housing literature has acknowledged this fact. The housing sentiment index is designed to represent the aggregate investor behaviour. Some past studies examined the effect of investor sentiments on the price and return of property market. For instance, [Clayton, MacKinnon and Peng \(2008\)](#) suggest that there is a significant linkage between investor sentiments and real estate transactions. They also opine that as there is no short selling in the property market, therefore, sophisticated participants could not eliminate mispricing. [Hui, Zheng, and Wang \(2013\)](#) reported that sentiments are responsible for some of the mispricing in property

market. Hence, the investor sentiments are expected to play a more dominant role due to the absence of short selling in the real estate market.

Sentiment is an investor belief regarding the future price movement, and market sentiment is the aggregate attitude of investors. This investor sentiment is found to be an important driver of property prices (Clayton, et al., 2009). The sentiment plays a more persistent role in the private market to take away the price from market fundamentals (Ling, Naranjo, and Scheick, 2014). Where the market of interest, Hong Kong, is mainly dominated by the private sector, market sentiments are expected to play a more persistent role. Freybote and Seagraves (2017) found that generally institutional investors refers their investment decisions back to the sentiments of specialized real estate investors. Moreover, as the housing market rides the cycle, the changes in house price cannot be fully explained by the market fundamentals (Jin, Soydemir, & Tidwell, 2014), and some models appeal to exhibit autoregressive pattern (Wang & Hui, 2017). Therefore, the current study devotes to examine the effect of non-fundamental factors (sentiments) and its past values (sentiments lags effects) that contains the information content that explains the non-fundamental movement of housing prices.

In the market of concern – Hong Kong, the real estate market has been extremely volatile since the past 20 years from 2021. Urban Reform Institute (2021) reported that the Hong Kong housing remains as the world's most unaffordable with the price-to-income ratio recorded at 20.7. Figure 1.2 demonstrates that the Mid-land Property Index of Hong Kong ² has recorded difference

² Midland Property Price Index (All) is compiled from the weighted average of transaction records of the 138 most popular secondary housing estates in Hong Kong. Besides, 2008-2021 figures are based on 100 housing estates, figures before 2008 are based on 50 housing estates. Midland District Price Index is compiled from the weighted average of transaction records of

of about five times between trough and crest with the lowest in April 2003 (44.3) and highest in June 2020 (203.5). The largest variations were recorded before and after the Asia Financial Crisis 1998, the SARS 2003, the Global Financial Crisis 2008, the Stock Disaster 2016, the political instability 2019 and COVID-19 pandemic 2020.

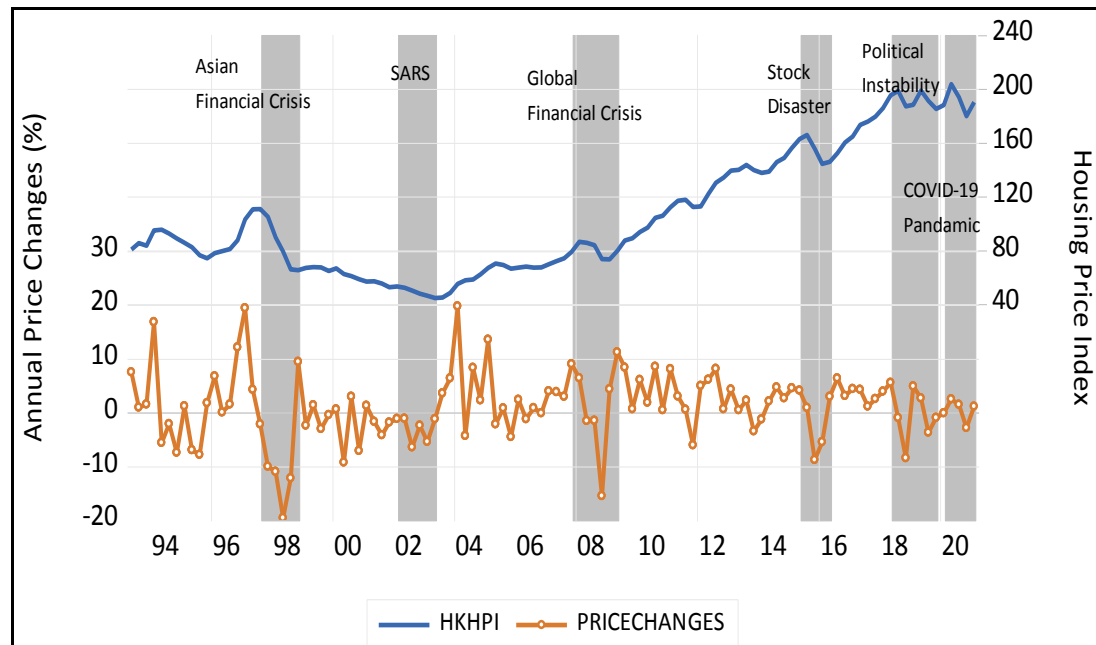


Figure 1.2: Hong Kong Housing Price Index and Annual Changes (%)

Source: Hong Kong Rating & Valuation Department

The skyrocketing but volatile housing prices have gained great attention among scholars. Among them, [Wang and Hui \(2017\)](#) discovered that the market sentiment is the key driver of Hong Kong housing prices and liquidity. This was in line with [Wang and Hui \(2016\)](#) that found

several most popular secondary housing estates in that district. All of the above information is compiled from the registration record of the Land Registry and the database of Midland Realty, and is for reference only. Although reasonable and cautious measures are applied to prepare the above information, if there is any inconvenience or loss caused by any mistakes, it is not the responsibility of Midland CyberNet Limited.

<https://www.midland.com.hk/en/market-insight> 20-9-22

sentiment as prominent indicator of housing price and liquidity (volume), and its lagged term has an important bearing on housing rent. [Lam and Hui \(2018\)](#) further found significant but negative association between investor sentiments and future returns of Hong Kong residential property, where sentiments have a stronger effect on more speculative or hard to value assets. Still, the property prices are on the upward trend since last 10 years (after the 2008 world financial crises), irrespective of the warnings from different economists, academicians, and other organizations like the Hong Kong Monetary Authority ([Lam and Hui, 2018](#)). Among others, [Leung, Ng and Tang \(2020\)](#) argued that the Hong Kong real housing rent and prices display patterns that decouple from the economic fundamentals.

To tackle the issue, the current study tries to construct a specific and valid sentiment index for Hong Kong properties to justify the price movement of Hong Kong residential properties. The sentiment is designed in the spirit of [Baker & Wurgler \(2007\)](#), who had highlighted that the investor sentiment effect usually relates to speculative stocks which are difficult to arbitrage. Most past studies conducted assumed that sentiments have a symmetric effect on the residential property prices (Das et.al. 2020). The current study assumes that there is an asymmetric effect of housing sentiments on the prices of residential property in Hong Kong. The asymmetric effect emerged when the effect of increasing volatility is different from the decreasing volatility. It could be due to the attitude of housing market investors; for example, an investor who chose to increase his investment by 5% in times of higher sentiment, may not decrease his investment by the same amount in case of lower sentiment, and vice versa. This can be explained by the Loss Aversion Theory. (Kahneman &Tversky, 1979) Thus, the effects of increasing sentiments could be different from decreasing sentiments. This asymmetric effect of sentiments on Hong Kong high-

rise residential property prices is examined through the Nonlinear Autoregressive Distributed Lag (NARDL) model of [Shin, Yu, and Greenwood-Nimmo \(2014\)](#), which is an extension of [Pesaran, Shin and Smith \(2001\)](#) Autoregressive Distributed Lag (ARDL) model.

Recently, this nonlinear ARDL method has been applied by various studies to examine the asymmetric behavior of various classes of assets. Among such studies, [Allen and McAleer \(2020\)](#) examined the asymmetric effect of oil price on the Dow Jones Index performance. [Cheah, Yiew and Ng \(2017\)](#) in the application of NARDL model found that stock market responds asymmetrically against currency appreciation and depreciation. [Liang, Troy and Rouyer \(2020\)](#) found consistent asymmetric effect of US policy uncertainty across Asian stock markets. Further, other studies also using NARDL model found the asymmetric effect of: tourism on economic growth ([Kumar et al., 2020](#)); exchange rate volatility on Vietnam trade balance ([Phong, Bao & Van, 2019](#)); oil price on agricultural commodity prices ([Olasunkanmi & Oladele, 2018](#)); and government expenditure on GDP ([Eid, 2020](#)). In line with the literature, the current study also applied the NARDL model to examine the asymmetric effect of sentiment on Hong Kong residential property prices.

To address the residential property prices, the current study focused on four types of high-rise properties that defined by sizes in square meters, from 40sqm to 160sqm. These four different classes of residential properties are with floor areas of up to ≤ 40 sq. meter; $40\text{sq.m} < 70\text{sq.m}$; $70\text{sq.m} < 100\text{sq.m}$; and $100\text{sq.m} \leq 160$ sq. m. Their corresponding price indices are: HPI40; HPI70; HPI100; and HPI160, respectively as shown in Table 1.1 below.

Table 1.1: Price Indices of four Classes of Residential Properties in Sq. meters

Classes of Residential Properties in sq. m	Up to $\leq 40\text{sm}$	$40\text{sm} < 70\text{sm}$	$70\text{sm} < 100\text{sm}$	$100\text{sm} \leq 160\text{sm}$
Price Indices	HPI40	HPI70	HPI100	HPI160

In the first place, a comprehensive set of eleven economic and financial variables were used to construct the sentimental index. These financial variables have the potential to affect the investor sentiments as indicated by previous studies and observed in practical industry experience. The sentiment index was constructed using Factor Analysis (FA) - Principal Component Analysis (PCA) methodology. The housing-sentiment relationship is then examined within the NARDL and error correction modelling framework, with the asymmetric effect of housing sentiments being examined. In addition, the study period covers the booming and bubble bursting periods since new millennium (2002-Q1 to 2019-Q2), which covers the SARS epidemic (2003), global financial crisis (2008), stock disaster (2016) and political instability (2019). A number of dummy variables³ were used with the sentiment index for crises to stabilize the solution due to ad hoc political, financial, economic and epidemic crises during the period of study (Q1-2002 to Q2-2019). As for the literature search, this study serves as the first attempt to address the asymmetric effect of sentiment on house price in Hong Kong with the NARDL method.

In summary, the objective of the current study is to examine the asymmetric effect of sentiments index on the Hong Kong four classes of high-rise residential property prices. In the first

³ A dummy variable is one that takes only the value 0 or 1 to indicate the absence or presence of some categorical effect that may be expected to shift the outcome.

[https://en.wikipedia.org/wiki/Dummy_variable_\(statistics\)](https://en.wikipedia.org/wiki/Dummy_variable_(statistics))

place, the sentiment index was constructed using the principle component analysis from a comprehensive set of eleven economic and financial variables. In what follows, the Nonlinear ARDL (NARDL) model of [Shin et al., \(2014\)](#) was applied to check the constructed sentiment index asymmetric effect on four classes of Hong Kong residential property prices.

Also a comparison between Hong Kong and Singapore housing policies will also be made. The purpose is to determine if Singapore's housing policies can be implemented in Hong Kong to help to improve the Hong Kong situation.

1.2 Background of the Study

To better understand the supply-demand imbalances and rising housing prices in Hong Kong, it is important to shed some light on historical facts and recent developments in the Hong Kong housing market. Other than the historical facts and recent housing developments, the property price movements, real estate policies, and infrastructure investment are also discussed. This discussion will generate some important insights in from the enforced housing policies and its effect on housing prices.

In essence the sentiment of the market would highly affect the behaviour of the purchaser and other stakeholders. The more uncertain the market situation is the higher will be the fluctuation of the sentiment index which in turn would the actions or inactions of various parties concerned.

Again Singapore and Hong Kong have been two of the “Four Small Dragons of Asia” in the world economic scene. A comparative study of the cities could cast light for both cities to learn from each other.

1.2.1 Hong Kong Property Development

Before July 1997, in the British administered Hong Kong, the land policies were quite consistent which provide housing to the low-income group. Many people were getting the pay higher than the eligibility for public housing income ceiling; however, it was difficult to afford private residential properties. They are called the sandwiched class⁴. Therefore, the reasonably affordable price of small and medium-sized class of residential units has a lot of demand^{5,6}.

In the late 1970's, the social and economic stability in Hong Kong has significantly improved after the riots in 1967.⁷ At the times, there was high demand among the general public for home ownership to improve their living standard. Many sandwich class people who had income higher than the public housing income ceiling, were still unable to afford private residential property. In 1978, the government of Hong Kong launched six Home Ownership Schemes (HOS) that offered private flats at a discounted price in the open market to assist the sandwich class in buying their own property.

⁴ The sandwich class is a common but informal term used in Hong Kong and Singapore housing market that refers to the middle-income class.

⁵ In the first session of the High School Liberal Studies Section – 'The needs of residence' pointed out that the property market began to build large private housing estates (such as Mobil Village, which was commenced in 1966), with well-equipped equipment (such as parking spaces, shopping malls, etc.), and public housing estates. The price of the building also has a certain distance, mostly small units.

⁶ 香港房屋協會 - 高中通識科教材套-《變遷中的房屋需要》第一冊：《居住的需要》(2016年).

https://www.hkhs.com/tc/publications/publications_detail/category/liberal_study/id/130

Retrieved 8/8/2018

⁷ In 1966 the Cultural Revolution started in PRC. In response to it riots occurred in Hong Kong. These brought about great political, economic and social instability and the migration wave in Hong Kong.

In 1987, the government of Hong Kong initiated a "Long Term Housing Strategy" for the period of 1987-2001. Under this initiative, the government offered public rental housing. Besides, public rental housing, the government also subsidized the ownership of residential housing of eligible public housing tenants and sandwich class of lower- and middle-income families. Further, in 1987, the Hong Kong Housing Society (HKHS) introduced a 'Residential Sale Scheme' to offer tenants residing in HKHS housing estates residential flats at a discounted price, in response to the new policy of the Government's Home Ownership Scheme (HOS). At the time, these policies enable more people to own properties. However, these schemes attracted investment in the property market that led to the increase in demand for residential property. Besides, the local developers continued developing projects that caused another property market bloom.

In the year 1993, the Hong Kong Housing Society started a 'Sandwich Class' housing scheme to build and sell flats to middle-income families at subsidized prices. This scheme was designed to assist those who were not able to apply for the public rental housing and/or buy flats under Home Ownership Scheme (HOS), and/or cannot afford to buy private flats. At the same time the government commissioned the Hong Kong Housing Society to implement the 'Sandwich Class' housing loan scheme to assist these middle-income families to buy and own private residential housing.

Before 1997, due to various reasons the property prices have risen sharply and many people starts worrying that they might not be able to buy residential properties in the near future. These higher housing prices and the subsequent increase in housing demand led to the speculative activities in the housing market that pushed further the housing prices. The rising house prices can be observed in Figure 1.3.

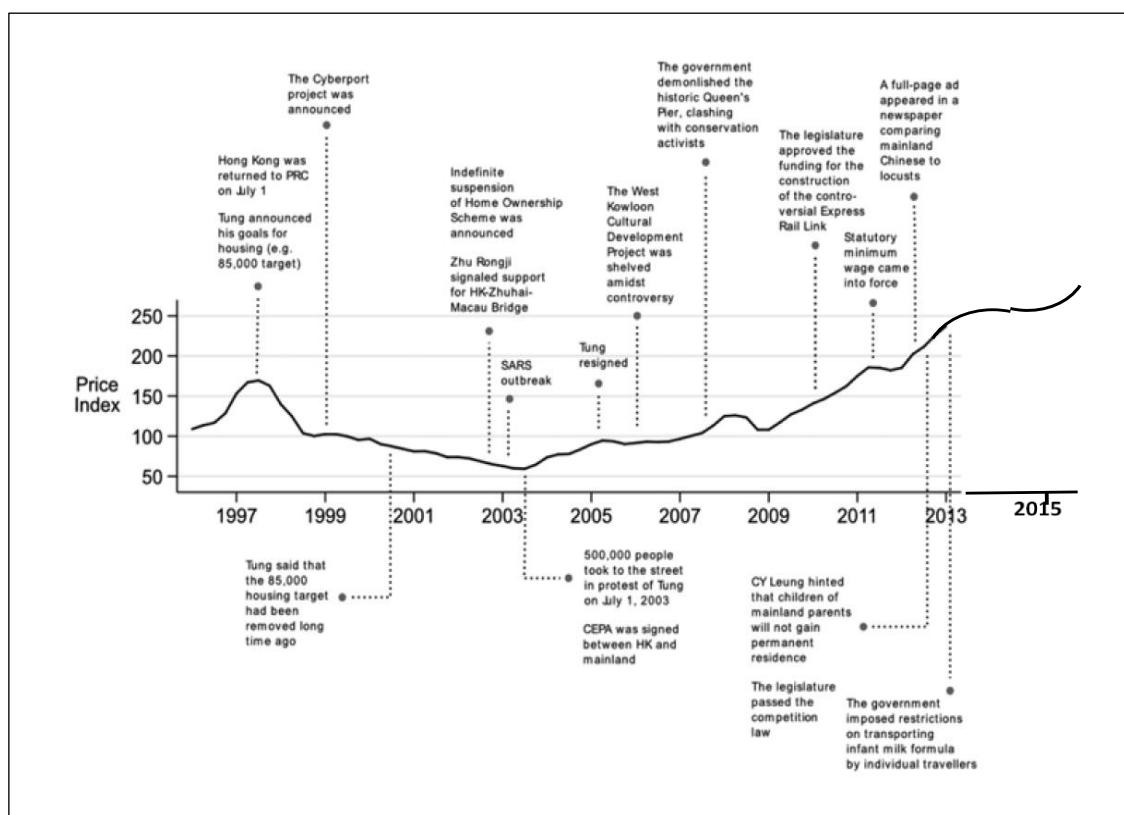


Figure 1.3: Hong Kong Housing Price Movements

Source: The graph is reproduced and updated from the study of [Wong \(2015\)](#).

In the second half of 1997, after the return of Hong Kong sovereignty to Peoples Republic of China (PRC), the then chief exetive Tung Chee-hwa of Hong Kong SAR government announced a 10-year housing scheme. The policy proposed three housing targets; to offer 85,000 housing flats, reducing the average waiting time for public rental housing to three years, and to increase home ownership to 70%.

In 1998, the Hong Kong Housing Authority (HA) started the ‘Tenants Purchase Scheme’ to allow public rental housing tenants to purchase the units they rented at affordable prices. Besides, the government introduced "Home Purchase Loan Scheme" to provide low-interest home loans for eligible citizens. However, the adverse shocks of 1997-98 Asian financial crises caused more

than 60% decline in property prices until mid-2003. Many properties have become "negative assets" (see Figure 1.3) ⁸. Afterwards, in 1999 the government launched the "Rentable and Buyable Scheme" which allows eligible tenants to either buy or rent public flats.

The adverse shocks of Asian financial crises were accompanied by the SARS epidemic in 2003 that also adversely affected the housing prices in Hong Kong. As indicated in Figure 1.3, the property prices start rebounding in 2004 after the Asian financial crises (1998-2003) and SARS epidemic (2003). It is to be noted that empirical estimations account for these crises' periods. In 2007, the Hong Kong authority (HA) began to sell the remaining units of the "Home Ownership Scheme" in small parcels.

At the beginning of 2008, the Mainland China investment in flows to Hong Kong's property market accelerated that led an increase in property prices in Hong Kong. But later in the same year, the global financial crisis hit the Hong Kong economy, entailed with market uncertainties and inflation. As a response to the financial crisis the government reduced interest rate in Hong Kong. Under the combined effect of economic turmoil followed by high inflation and reduction in interest rate, the property prices and rents significantly increased in Hong Kong. In 2010, due to the surge in property prices and rents continue to increase significantly, the Hong Kong SAR government set up a series of new policies with an attempt to calm down the heat-up of property market. Among such policy measures include the tightening

⁸ Negative asset means the market value of the property is less than the mortgage amount outstanding.

up of mortgage rates and down-payment percentages, the rise in stamp duty on property transaction, and increase in supply of land and housing.

In October 2011, the Hong Kong SAR Government under the then Chief Executive Donald Tsang announced ⁹ the revival of Home Ownership Scheme (HOS), which was previously stopped due to the economic turmoil. The revival of the HOS scheme was aimed to facilitate the low- and middle-income families in their home ownership. The scheme was partly aimed to help in the development of land resources, and ensure sufficient land supply by achieving the supply target of 40,000 residential units each year.

During the same time, the government announced the optimization of "Peace of mind" scheme, which was replaced by "rent-first" and "rentable" schemes.¹⁰ In the following years, the Hong Kong housing index (HKHI) still experienced an upward trend. Among the causing factors was various political distresses in the country, particularly in July-2013 in which about 500,000 people participated. As in April-2018, the HK housing index reached an all-time high of 176.11 from record low of 31.34 in May-2003 (1997=100). Of all, the prices of small and medium-sized flats almost tripled (183% increase) over the last decade. This increase in the prices of small and medium-sized flats was substantially larger than the price of larger flats (82% increase) (Hong Kong Legislative Council Secretariat, 2018¹¹).

⁹ Chief Executive of Hong Kong, Donald Tsang, policy address 2011.

¹⁰ The proposal was the government build housing schemes and first rent them out to occupiers for certain years and then the occupiers have option to purchase later.

¹¹ Hong Kong Legislative Council Secretariat, 2018. <https://www.legco.gov.hk/yr17-18/english/press/pr20180412-2.html> Retrieved 1/10/2019

From the brief chronological facts shown above, it is obvious that the housing problem in Hong Kong is complicated and serious. The issue has been repeatedly addressed in the government white papers and taken in priority list in domestic policy. However, the authority's efforts seem to be either less impactful or insufficient because the property demand still exceeds the property supply which is resulting in property price hikes. The continuous surge in property prices has made it very difficult for the general public to buy homes. For those who are not eligible to apply for public rental housing, particularly the low- and middle-income families, it is very difficult to afford even the "Ultra-small units of 20 square meters or less" through the private market mechanism. This is particularly true for the long-standing imbalance between supply and demand in property market which is very pressing and needs serious consideration for effective and pragmatic solutions.

Therefore, the current study is designed to address such supply demand imbalances in the Hong Kong housing market. Despite the fundamental demand-supply factors due to congested population, land-use planning and changes of purchasing power, the property market mechanism was also much influenced by speculative investment and sentiment-driven. Simply, housing investments are important tools of wealth creation for the individual needs and aggregate economy. However, there are no standard sentiment measurement available for Hong Kong presently. The thesis hence motivated to formulate a new sentiment index from various economic and financial variables that could help to predict the historical and future price movements in Hong Kong property market. The asymmetric effect of sentiment changes on different high-rise properties are also being assessed. Further, the current study is attempting to examine the housing policies of Hong Kong in comparison to the Singapore to look for viable ideas and solutions. In brief, the

current study provides new insights and possible solution to the rising but fluctuating housing prices in Hong Kong.

1.2.2 Property Investment and Housing Affordability

A well-known housing paradox is that housing is both an investment asset and a home shelter – basic need of a family. However, the interests of house owners may not equal to those of who want to own houses. The former would be happy if the price of their home rises while the latter would like the said price to go down so they can purchase their own homes. The rising house prices in relation to the level of income could cause conflicts between the older and younger; and between rich and poor.

For decades, the Hong Kong property development has demonstrated the paradox scenario. The market mechanism is trapped in the limited housing supply, government policies, speculative demand, and private housing development. On the one hand, more than half of the Hong Kong families are facing difficulties in home ownership, on the other hand, land and property developers are enjoying enormous profits from the housing sector. This division is increasing the income gap between the business elite and general public. Further, this division led the dominance of various business conglomerates over different markets sectors which are essential to the average citizens for their livelihood. Such as basic utilities and basic living supplies like food and groceries.

Among the richest members of the business elite in Hong Kong, it is quite difficult to find ones not involved in land or property development. As documented by [Wong \(2015\)](#), among the top ten Chinese business families in Hong Kong nearly all of them control a listed land and

property development company. As per the April-1997 figures, their companies constitute more than 40 percent of the total market capitalization of Hong Kong Stock Exchange (see, [Wong, 2015](#)).

On the other hand, the land and property development business has brought business to other economic sectors such as construction and financing. As in the banking sector, the property-related lending, including mortgage loans and credit for construction and property investment, accounts for about 46 percent of total domestic lending. At the end of 2013, the outstanding mortgage loans stood at HK\$ 900 billion, or 40 percent of Hong Kong's annual GDP (see i.e., [Wong, 2015](#))¹². In nutshell, the real estate sector is clearly the most important pillar of Hong Kong's economy. It facilitates the economic activities of both the public sector in term of government revenue and the private sectors as discussed above. While the housing affordability is a serious issue, at the same time, the real estate sector supports the livelihoods of a large number of families. Even if someone is not either directly or indirectly employed by property sector, he may still spend a substantial part of his earning on paying off home mortgage and related government taxations.

Moreover, the Hong Kong commercial properties are also enjoying good demand for income-producing assets, which causing a rise in rental costs of office and industrial premises. There have been particularly strong demands from China PRC companies and international institutions, with a focus on space in the core business areas. Both residential and commercial

¹² The outstanding value of mortgage loans increased month-on-month by 0.6% to HK\$1,746.8 billion at end-January 2022.

<https://www.hkma.gov.hk/eng/news-and-media/press-releases/2022/02/20220228-5/>
- 21-9-2022

properties are now competing for the limited land supply, and public welfares are often in battle with business investments which have direct impacts on the local economic growth. Robust demand and shortage of supply continues to push up rental costs and asset values, while residential properties prices are moving far beyond the equilibrium.

International Housing Affordability surveys ranked Hong Kong housing market, eight times in a row since 2009, the least affordable market in the world ([Demographia, 2021](#)). The survey is conducted each year since 2003, in joint collaboration of the Urban Reform Institute and Frontier centre, which covers 293 metropolitan housing markets in nine countries. The surveys housing affordability is based on the median multiple, which is median house price divided by median household income. In other words, the surveys housing affordability measure is house price relative to household income. As indicated in Figure 1.4, Hong Kong is the only Asian city to make it to the top-8 with the highest median multiple of 19.4. The other less affordable cities are Sydney, Los Angeles, London, Toronto, London Exurbs, Miami and New York.

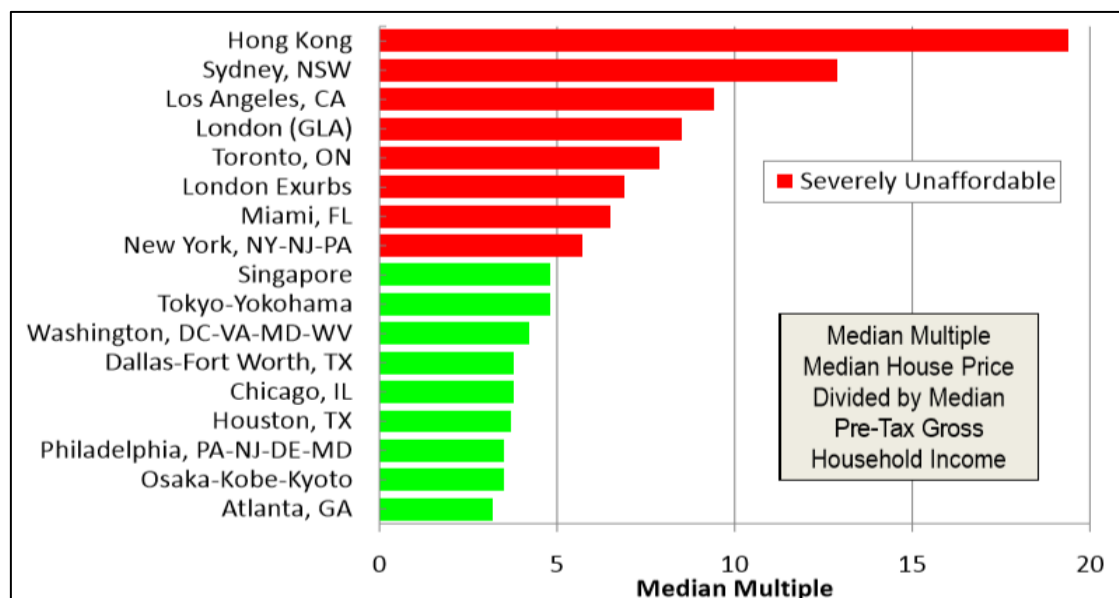


Figure 1.4: Housing Affordability, 2018

Source: 14th Annual Demographia International Housing Affordability Survey (2018)

The surge in Hong Kong flat prices has outpaced income growth over the past years. For example, the average flat price for a small residential unit in ‘New Territories’ surged by over two times during the last decade, while the median monthly household income increased less than 50% during the same period. As indicated in Figure 1.5, that during the period from 2004 to 2019 the flat prices in Hong Kong accelerated by 391% whereas the median monthly household income only increased by 78% which resulted in 4.5 percentage points decline in home ownership ratio. The Figure 1.5 further demonstrate that the home ownership ratio increased from 46.7% in 1997 to 54.3% in 2004. But in the subsequent period the home ownership ratio gradually declined to 49.8%. The given facts clearly exhibit the deteriorating position of housing affordability in Hong Kong and therefore requires a thorough investigation.

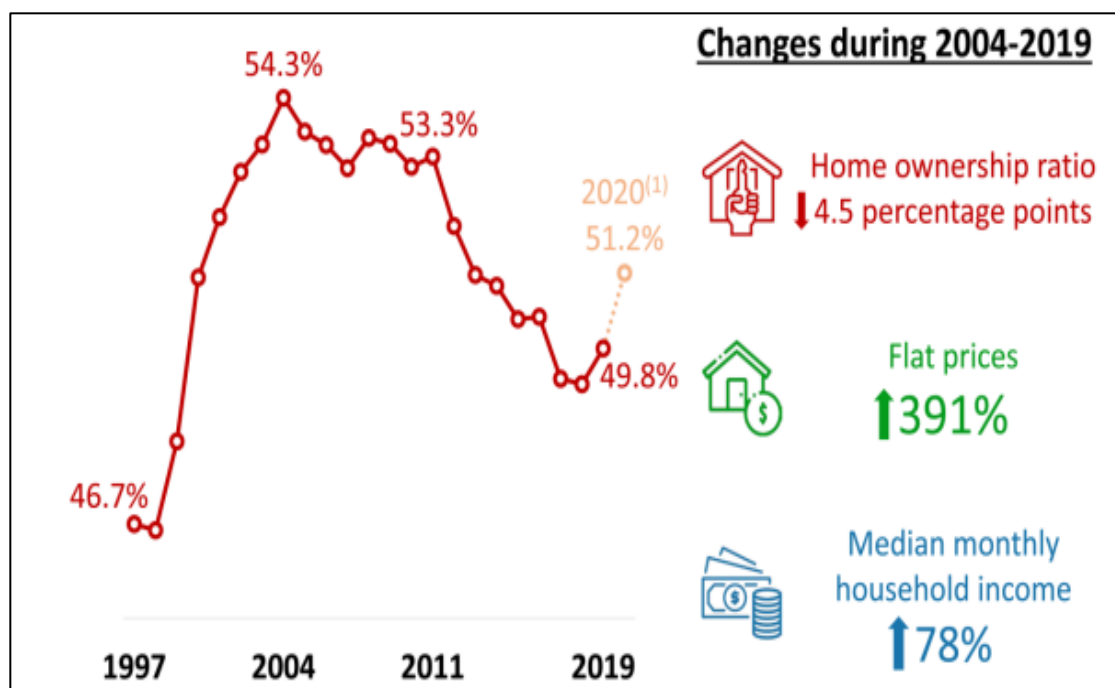


Figure 1.5: Home ownership ratio, household income and flat prices, 1997-2019

Source: Research Office Legislative Council Secretariat (Hong Kong)

Further as depicted in Figure 1.6, the increase in housing price-income gap has resulted in the deterioration of home purchase affordability ratio¹³ to as low of 20% in the third quarter of 2003. However, in the subsequent period the home affordability ratio improved to reach 68% in the third quarter of 2017, which was much higher than the long-term average of 45% (1997-2016). But, during the same period, the home ownership ratio dropped to 48% in 2016, lower than the 2001 estimate of 51%. Hence, the increasing housing prices are playing a major role in the deterioration of home ownership and home affordability ratio. This increase in property prices is expected to continue further due to the ultra-low interest rates in the country and the influx of capital from outside world particularly from Mainland China.

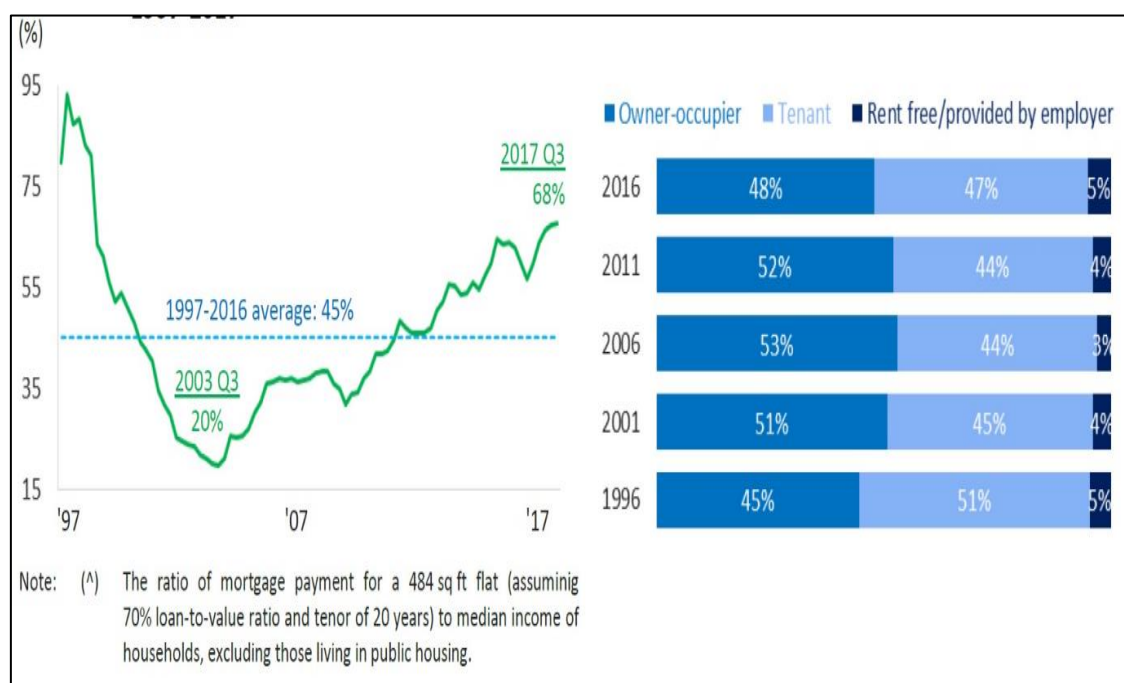


Figure 1.6: Hong Kong Home Purchase Affordability and Home Ownership

Source: Hong Kong Legislative Council Secretariat (2018)

¹³ There different ways to evaluate the home purchase affordability ratio. Essentially it is measured by the time one needs to earn or save up money to purchase a home. Or measured on the ability to pay mortgage.

1.2.3 Housing Supply in Hong Kong

Hong Kong has been facing the supply-demand imbalances in both public and private housing markets. Because the supply of new, both public and private, housing units has fallen short substantially in past decades. In recent years, the annual target to supply 20,000 private residential housing units set by the government has repeatedly fallen short. This has widened the gap in demand-supply of private and public housing. As for public rental housing, the eligible families have to wait for, on average, 5.3 years to get into one of those units. The main reason is insufficient land supply particularly in areas of large-scale public housing projects.

Since 1997 a quota of 150 persons per day is allowed to migrate to Hong Kong.¹⁴ Recently, there has been a great increase in housing demand in Hong Kong from mainland PRC. This increasing demand from mainland PRC is bounding pressure on Hong Kong private housing market, as there has been a surge in the housing sector investment from mainland China. On top of that, a rapid increase in demand of private residential flats is coming from within Hong Kong, because of the new married couples are trying to buy their own home, most often they are often partly financed by their parents to buy homes. The help generally comes in the shape of down payments or other forms of assistance. The other form of demand in Hong Kong housing market is from the Mainland Chinese immigrants of 150 persons a day (amounts to over 50,000 persons per year)¹⁵ which exerts a great pressure on the public housing demand. As a result, the shortage of public housing increased further and consequently the waiting period to get public housing

¹⁴ <https://www.scmp.com/comment/insight-opinion/article/2122704/time-renegotiate-policy-allows-150-mainland-chinese-settle> retrieved 31/1/23

¹⁵ <https://www.scmp.com/comment/insight-opinion/article/2122704/time-renegotiate-policy-allows-150-mainland-chinese-settle> retrieved 31/1/23

increased from 3.5 years to 5.6 years¹⁶; and may even increase further in the near future.

Wu (2018) suggested two possible solutions for the Hong Kong housing problem; to restart large-scale land reclamation and tapping into private developers' agricultural land reserves through public-private partnerships. However, for the latter option, collusion between the government and private developers must be avoided. Anyhow, the latter option is important because it is possible to supply over one-fifth of the land needed in the coming three decades (Wu, 2018). This is particularly true as agricultural land can be easily converted for various urban developments. However, it may take several years to develop the necessary infrastructure and then further time to build housing units.

Among the options, these and many others has been studied by the Hong Kong SAR government, and the government has become more proactive in dealing with the land and housing supply problem. Various options have been considered by the Task Force on Land Supply which was set up by the government in April 2018. In the same year, Chief Executive Carrie Lam also proposed various options in his policy address, yet with a greater emphasis on massive land reclamation. This would mean no short- or even medium-term solution to the imminent housing problem. The Hong Kong SAR government refrained from using resumption process to develop those agricultural land in the new territories due to huge political influences from indigenous people and powerful property developers. So far, the government has also been refrained from using huge areas of country parks and green belt zones due to environmental concerns and

¹⁶ As at end-September 2022, the average waiting time for general applicants who were housed to PRH in the past 12 months was 5.6 years.
<https://www.housingauthority.gov.hk/en/about-us/publications-and-statistics/prh-applications-average-waiting-time/> retrieved 31/1/23