

HONG KONG

Negative Equity and Mortgage Delinquency Market Report

February 2023

Highlights:

- Recent announcement of the increase in negative equity cases from 533 in 2022Q3 to 12,164 in 2022Q4 by HKMA is worrying.
- Based on Nova's latest forecast, the upward trend of negative equity will not continue in the next 3 to 6 months.
- The 90+ days mortgage delinquency is estimated to be 0.058% in the next 3 months.

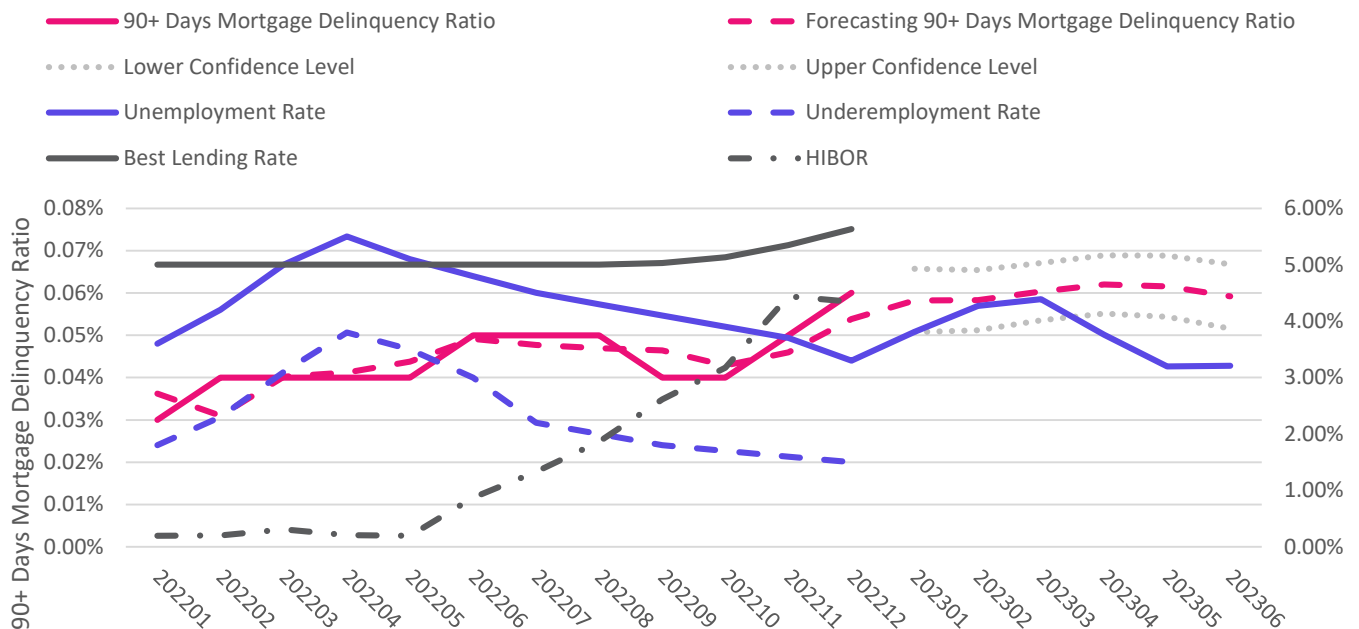
Key Insights

- The 90+ days mortgage delinquency is estimated to be 0.058% in the next 3 months.
- The recent increase in negative equity cases appears to have been mainly due to a decrease in property prices in November 2022.
- Our property price model suggested that the property price index will increase between 0.3% to 2.7% over the next 3 to 6 months. We therefore forecast that the negative equity cases will not rise significantly within the next 3 to 6 months.

Mortgage Delinquency

NOVA considers various economic factors in our market mortgage delinquency forecasts and include macroeconomic data such as Gross Domestic Product (GPD), Consumer Price Index (CPI), Hang Seng Index, unemployment rate, underemployment rate and interest rate. We forecast the 90+ days mortgage delinquency will improve to 0.058% in the next 3 months. Hang Seng Index, unemployment rate and underemployment rate are the key positive factors driving for improvement in the forecast while interest rate brings negative impact on the forecast. What-if analysis carried out for unemployment which carries significant information value with time lag effect for possible range of -6% (improvement) and +10% (deterioration) suggested the 90+ days mortgage delinquency will maintain between 0.058% and 0.062% in 2023.

Figure 1. Forecasting 90+ Days Mortgage Delinquency Ratio



Source: Hong Kong Monetary Authority (HKMA) and Census and Statistics Department, Hong Kong Government, NOVA calculations
Jan 2022 – Dec 2022

The recent relaxation of COVID-19 measures by the HKSAR Government has encouraged companies to resume hiring while salary increase in various industries and occupations were recorded (**Table 1**) in previous quarter, further suggested confidence in stable / improve in unemployment rate.

The Best Lending Rate has kept at 5% since November 2019 and started to increase to 5.63% in December 2022 while the interest rate market kept volatile. HIBOR was raised to more than 4% in the recent months. More new mortgage borrowers preferred fixed-rate scheme (10.4%) and the Best Lending Rate scheme (16.6%) instead of HIBOR+ scheme (**Table 2**). Clearly, more mortgagee tried to hedge rates volatility with fixed-rate schemes. We will keep monitoring this ratio and see if the selection of mortgage schemes induces any information value to our model.

Table 1. Quarter-to-Quarter changes (%) of average salary by occupation group

								2021Q3	2021Q4
	2021Q1	2021Q2	2021Q3	2021Q4	2022Q1	2022Q2	2022Q3	vs 2022Q3	vs 2022Q3
Accounting supervisor	0.03%	-1.17%	-3.21%	-0.38%	0.58%	0.62%	0.46%	1.28%	1.67%
Bookkeeper / accounting clerk	-2.82%	-0.13%	-0.08%	0.30%	-0.32%	0.45%	1.38%	1.80%	1.50%
Cashier / chit clerk	0.57%	1.85%	0.18%	0.29%	0.12%	1.62%	0.16%	2.20%	1.90%
Cleaner (general) (in pest control and cleaning services)	0.02%	1.38%	0.52%	1.00%	0.08%	1.43%	0.56%	3.10%	2.09%
Cleaner (lavatory) (in pest control and cleaning services)	0.06%	1.22%	0.58%	0.91%	0.11%	1.30%	0.86%	3.21%	2.29%
Cook	-2.01%	1.30%	1.27%	2.12%	0.04%	0.24%	1.64%	4.09%	1.93%
Dishwasher	-0.18%	1.94%	2.50%	2.79%	0.40%	2.90%	-0.59%	5.56%	2.70%
Documentation / shipping clerk	2.51%	1.44%	-0.70%	-2.17%	-0.81%	0.91%	-0.76%	-2.83%	-0.68%
Driver	0.03%	0.32%	3.37%	-1.50%	-1.24%	1.13%	1.57%	-0.06%	1.45%
Estate officer / building services officer	1.11%	1.33%	0.24%	0.28%	0.71%	0.38%	0.20%	1.58%	1.30%
General office clerk	0.49%	1.40%	-0.65%	1.34%	0.06%	0.95%	1.61%	4.02%	2.64%
General worker	3.16%	-2.24%	3.81%	2.34%	-3.39%	0.26%	0.13%	-0.75%	-3.01%
Guard (in security and investigation)	-0.14%	1.48%	0.94%	0.50%	0.01%	1.51%	1.11%	3.16%	2.65%
Messenger / office assistant	-0.37%	0.82%	1.12%	0.55%	-0.39%	0.67%	1.26%	2.10%	1.54%
Office / administrative supervisor	2.05%	-0.33%	-0.41%	1.22%	2.26%	-0.41%	1.15%	4.27%	3.01%
Receptionist (in restaurants)	-1.80%	-1.14%	4.17%	2.25%	1.41%	0.29%	-2.11%	1.79%	-0.45%
Receptionist / telephone operator	1.72%	1.81%	1.29%	-0.63%	0.04%	2.15%	-0.11%	1.43%	2.07%
Stock / purchasing clerk	-1.72%	3.94%	1.06%	0.27%	-0.93%	-0.04%	1.85%	1.14%	0.87%
Waiter / waitress	-0.09%	0.93%	1.17%	0.21%	-0.71%	1.28%	1.27%	2.05%	1.84%

Source: Census and Statistics Department, Hong Kong Government, NOVA calculations

Table 2. Interest Rates Scheme on Newly Approved Mortgage Loan

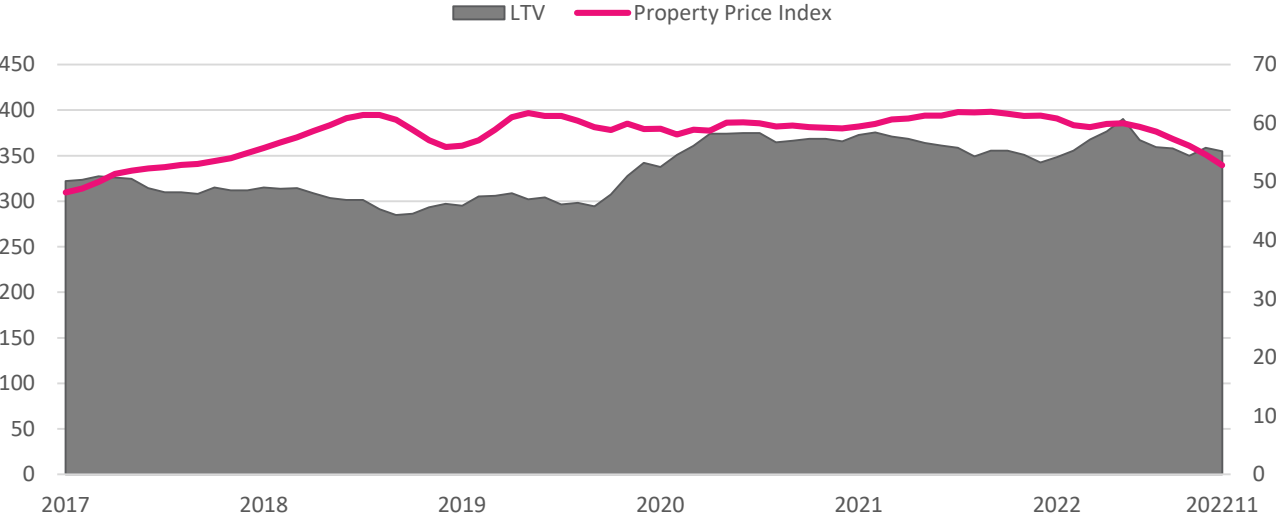
	Interbank Offered Rate (HIBOR)	Lending Rate (BLR)	Fixed rate	Others
Jan-2022	96.50%	1.60%	0.10%	1.80%
Feb-2022	97.30%	1.40%	0.10%	1.20%
Mar-2022	97.10%	1.00%	0.00%	1.80%
Apr-2022	97.40%	0.80%	0.10%	1.70%
May-2022	97.60%	0.50%	0.10%	1.80%
Jun-2022	97.90%	0.60%	0.10%	1.50%
Jul-2022	96.80%	1.00%	0.10%	2.10%
Aug-2022	96.60%	1.30%	0.00%	2.10%
Sep-2022	96.40%	1.30%	0.50%	1.70%
Oct-2022	84.10%	9.10%	4.60%	2.20%
Nov-2022	70.20%	16.60%	10.40%	2.70%
Dec-2022	67.50%	26.00%	3.30%	3.30%

Source: Hong Kong Monetary Authority (HKMA)

Negative Equity

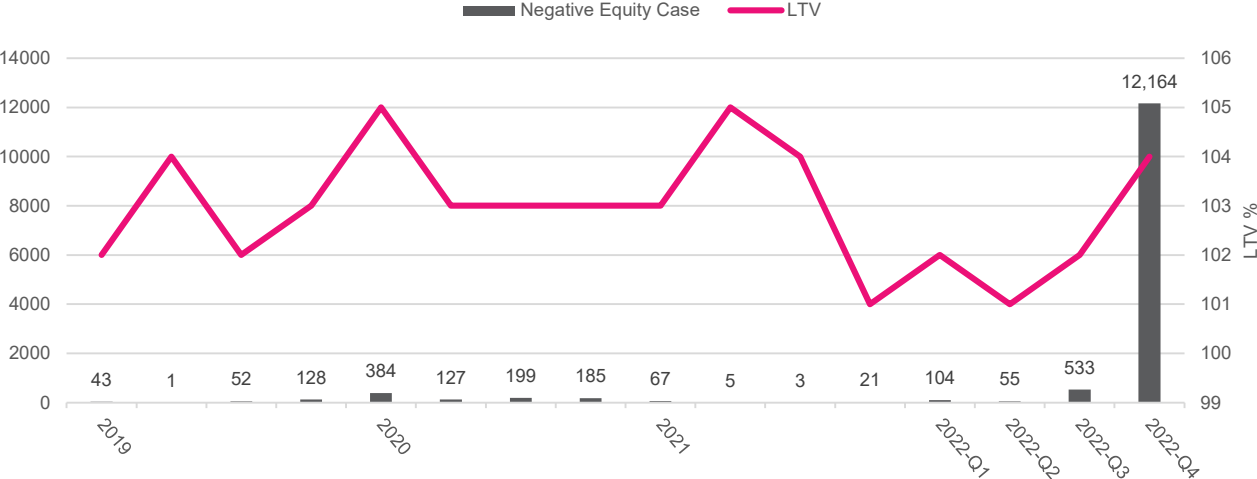
Implementation of SSD, DSD and BSD by the Government maintained the overall average Loan-to-Value (LTV) ratio within the range between 50% to 60% (Figure 2), and contributed to relatively low number of negative equity cases (below 500) during COVID-19 period. The recent property price index has dropped by 14.7% (vs 398.1 as of September 2021, the highest recorded during COVID-19 period), it resulted a sharp increase in negative equity cases to 12,164 (with an aggregate value of HK\$66,252 million) by end of December 2022 (Figure 3). These cases had an average LTV of 104%.

Figure 2. LTV and Property Price Index



Source: Hong Kong Monetary Authority (HKMA) and Rating and Valuation Department, HKGOV
2017 – Nov 2022

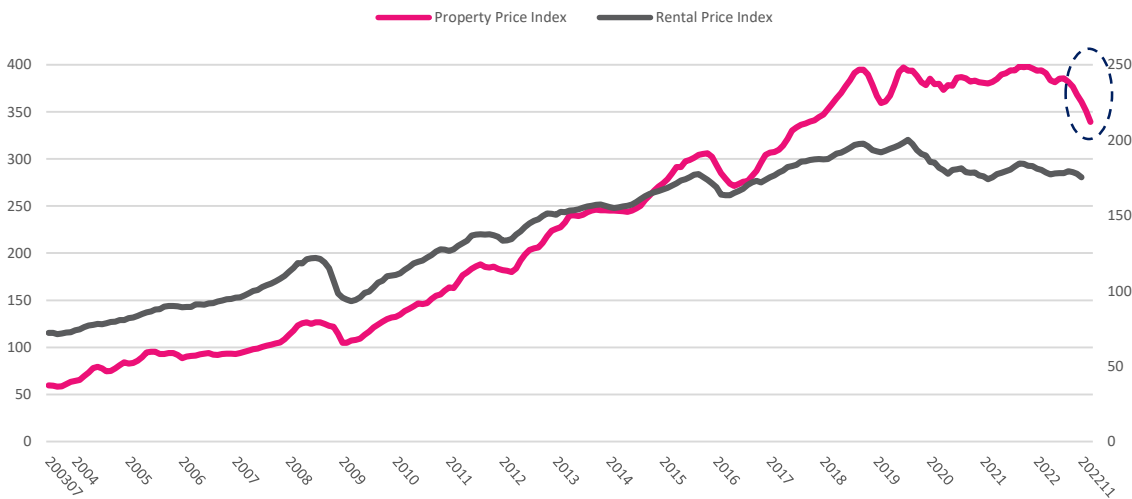
Figure 3. Negative Equity Cases and LTV



Source: Hong Kong Monetary Authority (HKMA) and Rating and Valuation Department, HKGOV
2019Q1 – 2022Q4

Property Price Index has not significantly plummeted in the recent 10 years (**Figure 4**) with upward trend lowest at 58.4 since July 2003. Our property price index model considered economic data such as GDP, vacancy rate, property completion, unemployment and Hang Seng Index, and suggested no significant price correction in the next 3 to 6 months, even with recent relatively mild market correction.

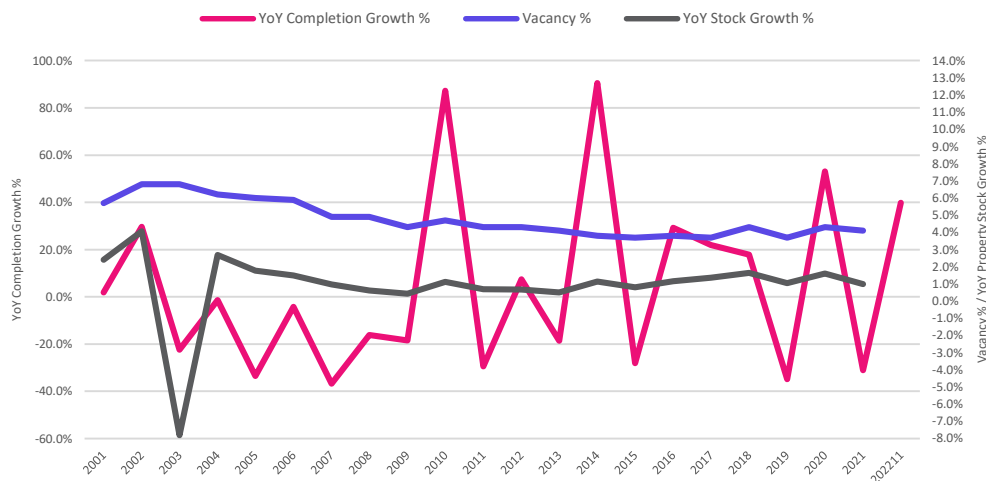
Figure 4. Property Price Index and Rental Price Index



Source: Rating and Valuation Department, HKGOV
Jul 2003 – Nov 2022

Private Domestic Flat completion was 20,108 as of November 2022, representing 40% increase from 2021. The increased supply was met with increased demand as vacancy rate (**Figure 5**) has remained stable during the COVID-19 period. Along with other macro indicators and a forecast improvement in unemployment rate, our forecast suggested an index increase by 0.3% to 2.7% in next the 3 to 6 months.

Figure 5. Private Domestic Flat Completion YoY Growth Rate, Vacancy Rate and Property Stock YoY Growth Rate

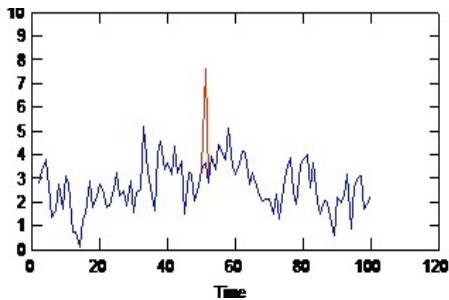


Source: Rating and Valuation Department, NOVA calculations

Outliers Effects and Forecasting Behavior

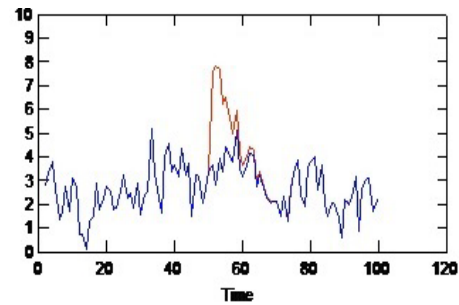
Additive Outliers (AO)

An additive outlier affects a series only the level of given observation.



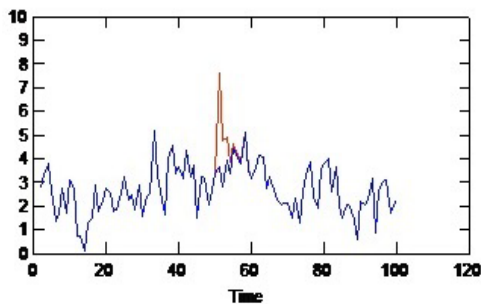
Innovative Outliers (IO)

An innovative outlier affects all observations beyond the given time through the memory of the underlying outlier-free process.



Transient Change Outliers (TC)

A transient change outlier is an event having an initial impact and whose effect decreases exponentially.



Level Shift Outliers (LS)

A level shift outlier is an event that affects a time series at a particular time point whose effect becomes permanent.

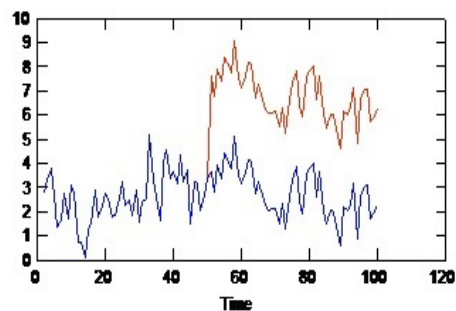


Figure 6. Property Price Index and Outlier Effect

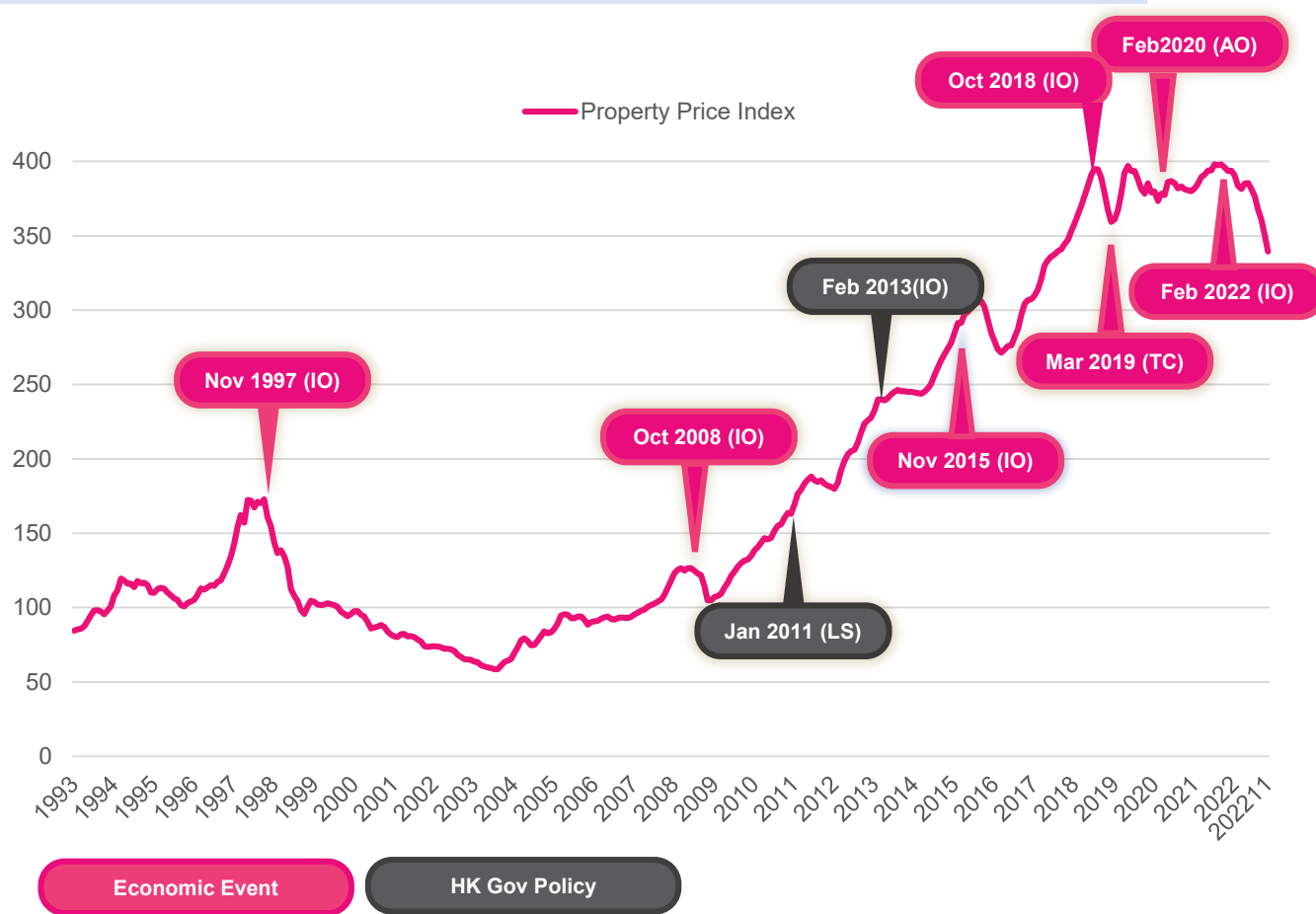


Table 3. Outlier Effect Analysis and the Corresponding Events

Date	Outlier Type	Outlier Magnitude	Event	Event Type
Nov 1997	IO	-11.941	Asian Financial Crisis arrived Hong Kong	Economic Event
Oct 2008	IO	-7.600	Lehman Brothers files for bankruptcy	Economic Event
Jan 2011	LS	6.500	Special Stamp Duty (SSD) effective on 19 Nov 2010	Policy
Feb 2013	IO	7.500	Double Stamp Duty (DSD) effective on 22 Feb 2013	Policy
Nov 2015	IO	-6.334	Popping of bubble causing Chinese stock market crash	Economic Event
Oct 2016	LS	7.990	Chinese stock market recovered	Economic Event
Oct 2018	IO	-10.700	Escalation of China-United States trade war Six Initiatives on Housing announced	Economic Event Policy
Mar 2019	TC	11.213	China-United States trade war easing	Economic Event
Nov 2019	AO	6.787	Protests less aggressive and less frequent compared to early months	Economic Event
Feb 2020	AO	-5.894	Outbreak of COVID-19 in Hong Kong	Economic Event
Feb 2022	IO	-6.500	Federal Reserve raised the federal funds rate	Economic Event

Endnotes:

- Hong Kong Monetary Authority (HKMA)
 - Residential Mortgage Survey Results
 - Loan-to-deposit ratio
 - Economic & Financial Data for Hong Kong
- Census and Statistics Department
 - Wages and Labour Earnings
 - Labour Force, Employment and Unemployment
- Rating and Valuation Department
 - Private Domestic Flat Completion YoY Growth Rate, Vacancy Rate and Property Stock YoY Growth Rate
 - Price Indices for Hong Kong Property Market
- Joint Estimation of Model Parameters and Outlier Effects in Time Series, CHUNG CHEN and LON-MU LIU (1993): “Joint Estimation of Model Parameters and Outlier Effects in Time Series”, Journal of the American Statistical Association, Vol. 88, No. 421 (Mar., 1993), pp. 284-297
- Granger, C.W.J. (1969). “Investigating causal relation by econometric and cross-sectional method”, *Econometrica* 37: 424–438

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