Mizuho Economic Outlook & Analysis

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Recent Trends in the Real Estate Market

Despite signs of market overheating, investors remain calm and selective

< Summary >

◆ Japan's real estate market continues to recover with land prices in urban areas rising for two consecutive years. At the same time, there are growing concerns regarding overheating in the market.

◆ In Tokyo, signs of overheating are detected from the declining volume of land transactions despite rising land prices and office rents exceeding theoretical values.

◆ On the other hand, compared with levels during the "mini real estate bubble" in the mid-2000s, cap rates (yields) remain at a high level, with the exception of Tokyo, and no excessive investment in properties in prefectural regions has been observed. This suggests that investors are maintaining a calm attitude in selecting their investment targets.

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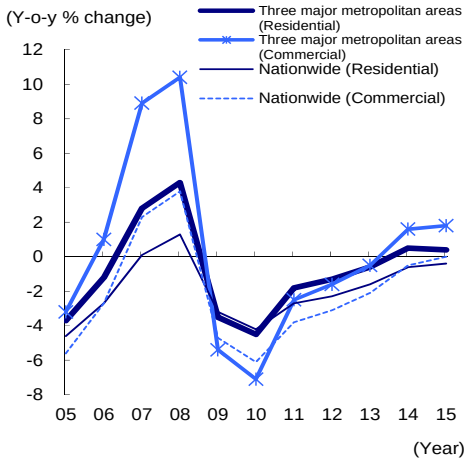
1. The real estate market continues to recover, but the investment market indicates the risk of overheating

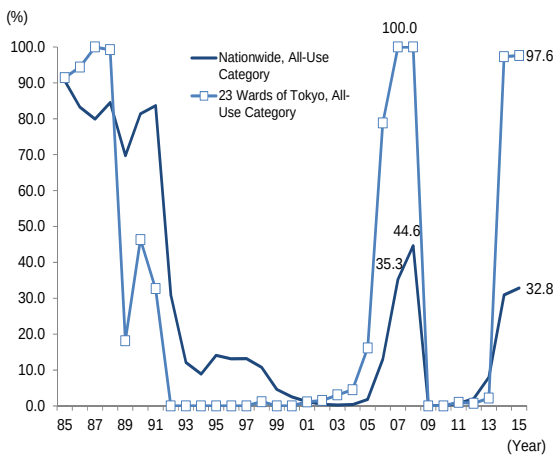
Japan's real estate market has maintained its recovery trend despite the slowdown of the domestic economy after the consumption tax hike. Official land prices as of January 1, 2015 rose for two consecutive years in the three major metropolitan areas (Tokyo, Nagoya and Osaka) for both residential and commercial land, albeit at a gradual pace, and the decline in the official land price in prefectural regions continued to slow down (**Chart 1**). The rate of change of the average price of nationwide commercial land came in at ±0%, halting its fall for the first time after the collapse of Lehman Brothers. The proportion of land whose price increased, from the points of land covered by the official land price statistics, rose slightly (30.9% → 32.8%) over last year for the nationwide / all-use category (**Chart 2**). If we compare this figure with those observed during past land price recovery periods, while the land price was rising at over 80% of the points of land covered at the time of the Heisei economic bubble in around 1990, it declined to below 50% during the mini real estate bubble in the mid-2000s (referred to hereafter as the "Mini Bubble") and to about 30% this time, indicating the diminishing spill-over effect of the economic recovery over time. If we limit ourselves to the 23 wards of Tokyo, while the land price at all points covered was rising at the peaks of the Heisei economic bubble and the Mini Bubble, the figure this time remained almost unchanged from a year ago, marking slightly below 100%.

Chart 1: Official land prices



Source: Made by MHRI based on Ministry of Land, Infrastructure, Transport and Tourism, *Official Land Price*.

Chart 2: Proportion of points with rising land prices

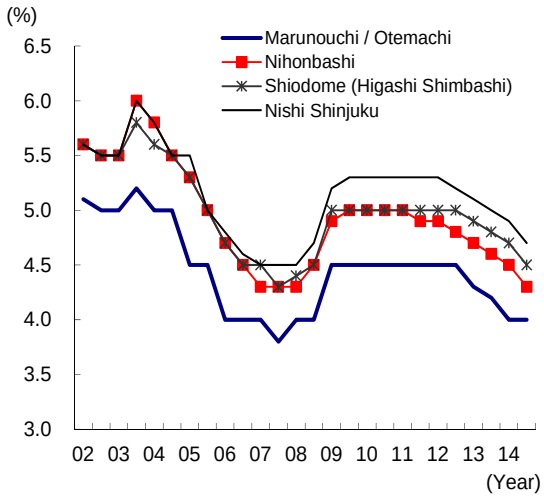


Source: Made by MHRI based on Ministry of Land, Infrastructure, Transport and Tourism, *Official Land Price* .

Even though recovery in the macroeconomy-based real estate market remains gradual, there are growing concerns regarding the risk of overheating in the real estate "investment" market centered in Tokyo. Looking at the cap rates (expected return) (= net income / real estate price) used by investors as investment criteria, as of October 2014 the rate for office buildings in the main business districts of Tokyo fell nearly to the lowest level marked at the time of the Mini Bubble. If we assume a flat net income, the decline in the cap rates expected by investors may lead to an increase in real estate prices (real estate price = net income / cap rate).

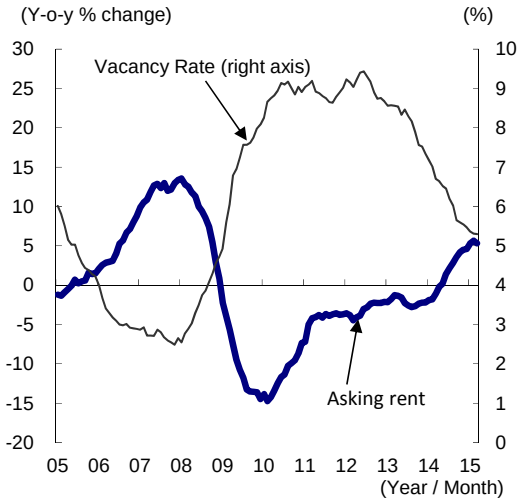
Some suggest that the expected office rent, which is the main source of net income, is too high in the first place. Asking rents in Tokyo (according to research by Miki Shoji Co., Ltd.) have maintained an upward trend since they first began to increase a year ago in May 2014. In the past, a vacancy rate of 6% was considered the threshold for the reversal (increase) of rents, and during the Mini Bubble, rents started rising when the vacancy rate reached 5.0% in June 2005. But in the recovery phase this time, rents began to increase when the vacancy rate was 6.5%. A growing mismatch between supply and demand due to the aging of buildings may be the reason why the vacancy rate (natural vacancy rate) triggering rent reversal is higher. Nonetheless, when the asking rent deviates from its fundamentals, the real estate price calculated based on the rent is also presumed to deviate from the fundamentals, suggesting the occurrence of overheating.

Chart 3: Cap rates in the Tokyo business district



Note: Expected return of a standard Class A building in the respective areas. Investigated in April and October each year.
Source: Japan Real Estate Institute, *Japanese Real Estate Investor Survey*"

Chart 4: Vacancy rate and rents in the Tokyo central district



Note: Covers the 5 central wards of Tokyo, namely Chiyoda, Chuo, Minato, Shinjuku and Shibuya wards.
Source: Miki Shoji Co., Ltd., *Office Markets Report*

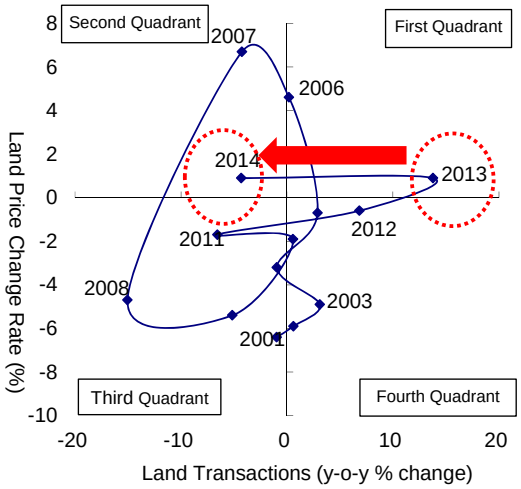
In the next section, we will verify the degree of overheating while confirming the recovery trend in the recent real estate (investment) market around Tokyo. In concrete terms, we will be studying (1) whether the recovery of the macroeconomy-based real estate price is in line with the actual demand, (2) whether the rise of office rent can be explained by the fundamentals, and (3) whether investors are taking excessive risk. We will also investigate the level of overheating through a comparison with the Mini Bubble.

2. Verification of the degree of overheating

(1) Signs of overheating have emerged, but to a lesser degree compared with the Mini Bubble

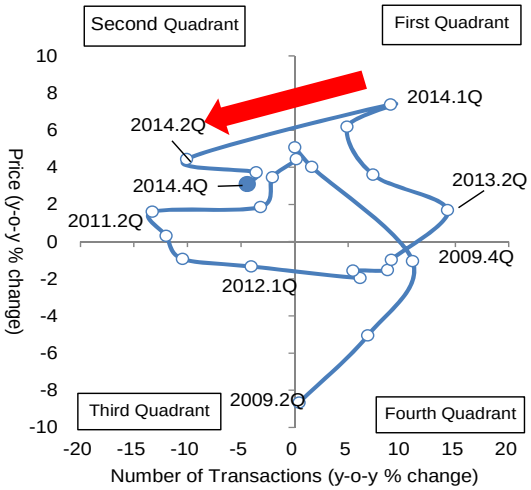
First, let us take a look at the relationship between real estate price and transaction volume in metropolitan Tokyo. If we plot the rate of change of land prices collected by Ide / Kurahashi (2011) on the vertical axis and the volume of land transactions (number of transfer registrations following the purchase of land) on the horizontal axis, the data for each year shows an counterclockwise movement along with the recovery (deterioration) of the market (**Chart 5**). In the first quadrant, the land price rises together

Chart 5: Land price change rate and land transaction volume (Tokyo area)



Note: Land price is the year-on-year change rate as of January 1 of the following year.
Source: Made by MHRI based on Ministry of Justice, *Monthly Report on Judicial Statistics*, Ministry of Land, Infrastructure, Transport and Tourism *Official Land Price*.

Chart 6: Existing home prices and transaction volume (South Kanto region)

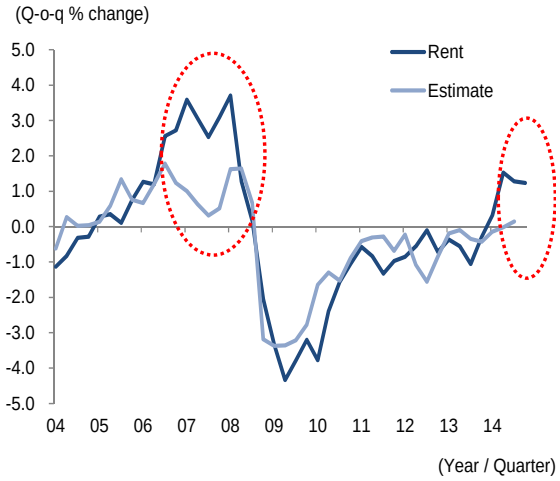


Note: Apartments and detached houses
Source: Made by MHRI based on Ministry of Land, Infrastructure, Transport and Tourism, *Real Estate Price Index (Residential).*

with the increase in transaction volume on the back of the economic recovery. Sooner or later, land owners begin to speculate in land by withholding land sales in anticipation of a future rise of land prices, and at the same time, the demand for land gradually diminishes as land prices become too high. This leads to the second quadrant, where the transaction volume decreases as the land price continues to rise. When demand shrinks further, we enter the third quadrant where the land price starts to fall. Later, the transaction volume starts to increase once again as land owners rush to sell their land stock out of fear that land prices will drop in the future, leading to the fourth quadrant to complete the cycle.

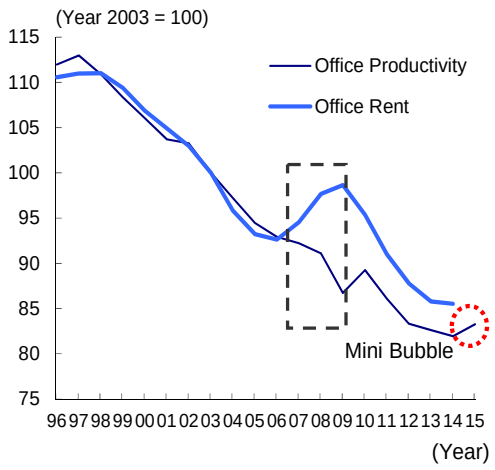
The year 2013, in which the land price started recovering, belongs to the first quadrant, and we can assess that the recovery was based on actual demand. But 2014 entered the second quadrant where the land transaction volume decreases while the land price continues to rise. The fall in the transaction volume in 2014 may be explained as a repercussion to the higher transaction volume in 2013 ahead of the consumption tax increase, but even if we classify the housing transactions as housing starts and deduct

Chart 7: Estimate of rents in the Tokyo business district



Note: The formula to calculate the estimate is as follows.
dlog (rent) = -0.025 + 0.392 dlog (cgpi) + 0.022 log (pro) - 0.088 dlog (vacancy)
(t = -2.01) (t = 2.80) (t = 1.78) (t = -4.98)
rent: Asking rent of offices in the Tokyo business district
cgpi : Corporate goods price (excluding consumption tax)
pro: Office productivity = Gross profit of large companies / floor space of offices in the Tokyo business district)
vacancy: Vacancy rate in the Tokyo business district (Almon-lag, degree 2, lag 4, termination constraints)
Estimated period 1997 Q2 – 2014 Q3 adjusted R2: 0.593
Source: Made by MHRI based on Miki Shoji Co., Ltd., *Office Markets Report,* Ministry of Finance, *Financial Statements Statistics of Corporations by Industry*, Bank of Japan, *Corporate Goods Price Index*.

Chart 8: Office productivity based on the macro economy and rents



Note: 1. Office rent is based on the service price index for corporations.
2. Office productivity = Nominal GDP / nationwide occupied floor space. Occupied floor space is the sum of floor space in cities covered by the research by Miki Shoji Co., Ltd.
3. Office productivity in 2015 is calculated based on occupied floors in January and the nominal GDP of the January – March period of 2015 projected by MHRI.
Source: Made by MHRI based on releases by the Bank of Japan, Cabinet Office, and Miki Shoji Co., Ltd.

them from the total land transaction volume, the phenomenon of shifting from the first quadrant to the second still does not change. Since demand has failed to keep up with the land price increase, we can interpret that the market has become overheated. However, compared with the last time when the market entered the second quadrant during the Mini Bubble in 2007, the breadth of the land price increase in 2014 was small and the degree of overheating subdued. In addition, if we use the *Real Estate Price Index (Residential)* derived from the prices applied to the actual transactions (the data is limited to residential properties and available only after 2008) to observe the relationship between land price and transaction volume, we can confirm that the market entered the second quadrant after the second quarter of 2014 (**Chart 6**).

One of the factors behind overheating in the market is the higher than expected level of rent (income) in the real estate investment market. The asking rent of offices is determined based on economic fundamentals such as supply and demand, corporate earnings, and inflation rate. Therefore, we estimated the asking rent of offices in central Tokyo using (1) corporate goods prices, (2) vacancy rate, and (3) office productivity (gross profit of large companies / occupied floor space of offices) as variables. As a result, the actual asking rent has been kept higher than the estimated rent since early 2014, indicating that the asking rent was set at a higher level than the fundamentals-based estimate (**Chart 7**). This suggests that property price may have also been estimated at a level higher than the fundamentals. The same phenomenon in which the actual asking rent exceeds the theoretical value also occurred during the Mini Bubble, and this may have led to an overheating of property prices. It must be added, however, that office productivity (nominal GDP / occupied floor space of offices) based on the macroeconomy, which has been on a declining trend since 1998, showed signs of improvement in 2015 (**Chart 8**). Even in central Tokyo, if office productivity begins to improve, deviation from the estimated rent may be corrected.

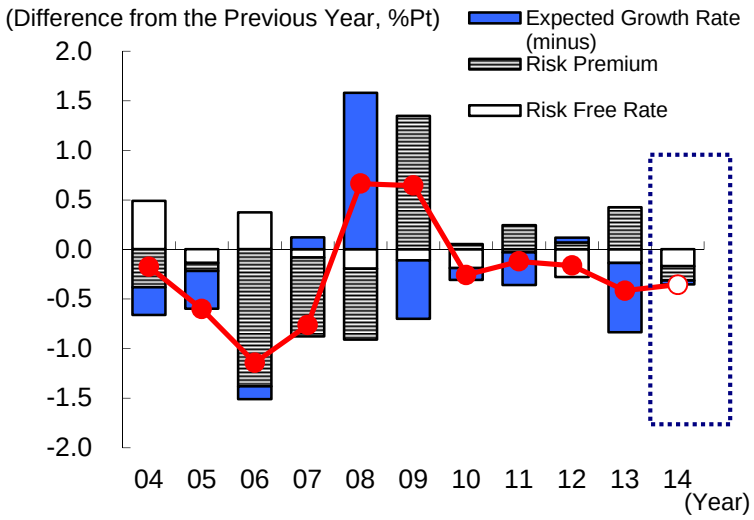
(2) No major change in investors' risk appetite

In the previous section, we pointed out that one of the factors behind overheating is the higher-than-expected rent (income) level. But if we use the capitalization method, the cap rate can also be considered as a factor in determining price in the real estate investment market (real estate price = net income / cap rate). Next, we will consider whether there is any hint of overheating in the recent fluctuation of the cap rate.

Chart 9 shows a factor analysis of the cap rate fluctuation in Tokyo's 23 wards, broken down into (1) risk free rate (yield of 10-year JGB), (2) expected growth rate of net income from real estate (opposite sign), and (3) risk premium (residual of cap rate fluctuation minus (1) and (2)). Although in 2013 a rise in the expected growth rate led to

a decrease in the cap rate, the downward pressure stemming from the expected growth rate almost disappeared in 2014, and the risk premium and the interest rate (risk free rate) served as factors behind the decline in the cap rate. A decrease in the risk premium may be viewed as growth in the risk appetite among investors, but compared with the significant decline in the risk premium during the Mini Bubble (2006 – 2007), the extent of the current decline was rather limited. Considering that the risk premium in a survey of investors (*Japanese Real Estate Investor Survey* by the Japan Real Estate Institute) hovered at an almost unchanged level from April 2009 through October 2014, it can be judged that there was no major change in the risk appetite of investors as of 2014.

Chart 9: Factor analysis of cap rate fluctuation



Note: Factor analysis was conducted based on the following formula.
P = NOI / cap rate, Cap rate = NOI / p = r＋ρ－g
P: Real estate price (land price), NOI: Net operating income (office rent),
r: Risk free rate (10-year JGB yield), ρ: Risk premium (implicit),
g: Expected growth rate of NOI (rent) (firms' nominal expected growth rate)
*Cap rate was calculated using the actual net operating income yield in 2006 by Urban Research Institute Corporation "RENEX" of 6.27% and the growth of office rent / land price.

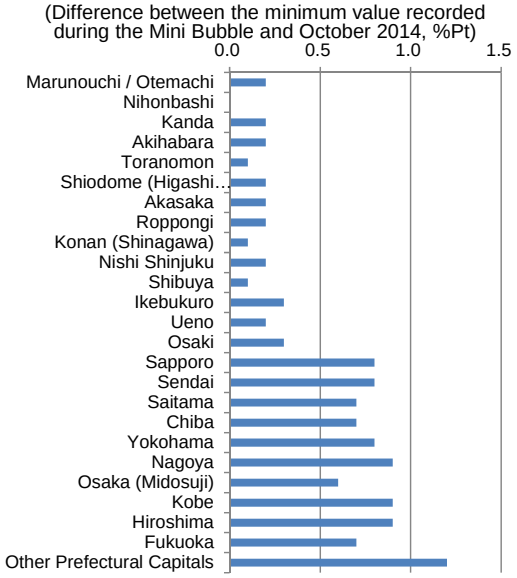
Source: Made by MHRI based on Ministry of Land, Infrastructure, Transport and Tourism, *Official Land Price,* Mitsui Fudosan, Co., Ltd., *Japanese Real Estate Statistics*, Urban Research Institute Corporation, *Real Estate Topics* (October 2006), Commercial Property Research Institute and Cabinet Office, *Annual Survey of Corporate Behavior*, among others.

(3) Investors maintain a rational attitude in selecting investment properties

Furthermore, compared with the Mini Bubble, investors in the current recovery phase seem to be maintaining a selective attitude in choosing investment properties. Let us compare the cap rate as of October 2014 with the rate during the Mini Bubble, including prefectural cities. While Tokyo's major business districts saw the cap rate falling nearly to the lowest level recorded during the Mini Bubble, we confirmed that in cities other than Tokyo, the cap rate actually exceeded the level recorded during the Mini Bubble by about 1%Pt (**Chart 10**). This implies that the situation is far from overheating in areas other than Tokyo.

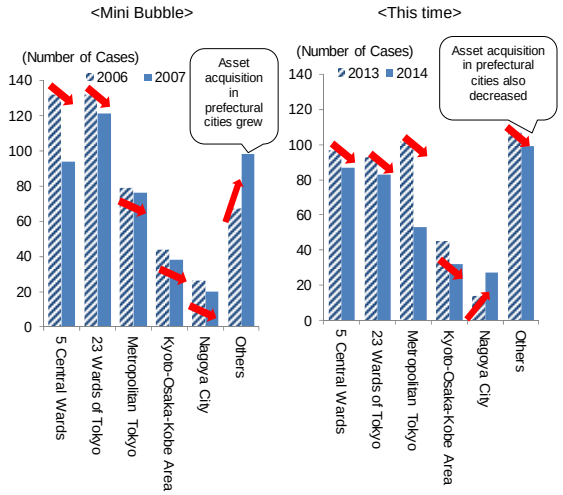
We can also confirm the difference in the degree of overheating between Tokyo and other areas from the trend of assets acquired by JREIT. In 2006 through 2007 during the Mini Bubble, JREIT acquired more properties in prefectural cities because the hike in real estate prices in the three major metropolitan areas (Tokyo, Nagoya and Osaka) made it difficult to acquire assets in urban areas (**Chart 11**). This time, however, from

Chart 10: Cap rate level (Comparison with the Mini Bubble)



Note: Expected yield of a standard Class A building in each area.
Source: Made by MHRI based on Japan Real Estate Institute, *Japanese Real Estate Investor Survey*.

Chart 11: Regional breakdown of assets acquired by JREIT



Note: The 5 central wards are Chuo, Chiyoda, Minato, Shinjuku and Shibuya wards. Tokyo's 23 wards exclude the 5 central wards. Metropolitan Tokyo excludes the 5 central wards and Tokyo's 23 wards.
Source: Made by MHRI based on the timely disclosure of information.

2013 through 2014, JREIT acquired fewer properties not only in urban cities but also in prefectural cities, with the exception of Nagoya. Since JREIT tends to place emphasis on the established yield (cap rate) when investing, when property prices rise in urban areas, a fewer number of properties can fulfil the cap rate criteria and investors are induced to purchase properties in regional cities. This is what happened during the Mini Bubble, leading to more acquisitions of properties in prefectural cities; but this time, investors have remained skeptical in acquiring assets in regional cities, too. The reason for the higher acquisition standard compared with the Mini Bubble is that while investment targeted assets in the past centered on offices, investment this time has extended to other fields such as logistics, commercial, and healthcare-related facilities.

Looking at the movement in the real estate transaction price, as the pace of price increase in central Tokyo accelerates, price increases in the 23 wards of Tokyo, excluding the central area, have remained rather limited compared with the Mini Bubble. The real estate transaction price of existing housing (geographical and social conditions of locations have been adjusted using the hedonic approach)[1] in the three central wards of Tokyo (Chiyoda, Chuo and Minato), six wards enclosing the three central wards (Shinjuku, Shibuya, Toshima, Shinagawa, Bunkyo and Taito), the other 14 wards as well as Saitama and Kanagawa are depicted below (**Chart 12**). According to the collected data, while the transaction price of existing apartments in the three central wards of Tokyo and the six wards enclosing the three central wards was nearly the same or higher than during the Mini Bubble (2006 – 2007), the price increase in the other 14 wards, Saitama, and Kanagawa remained small. Also, the rate of increase in the transaction price of urban land and buildings (detached houses) in 2014 stayed within one digit, and the price in Saitama and Kanagawa even dropped into the negative territory. The increase in real estate price is concentrated in the central area of Tokyo, and the degree of overheating in areas peripheral to central Tokyo is limited.

3. Conclusion

As explained above, signs of overheating in the real estate market in Tokyo over the past one year period have been observed in the following phenomena: (1) land price continues to increase despite the fall in transaction volume, and (2) the level of office rent has started rising beyond its theoretical value. Nonetheless, the range of increase in land prices is smaller than during the Mini Bubble. Also, since office productivity is

[1] The Real Estate Price Index used in Chart 12 is based on data from research conducted by Iwaisako, Ono, Saito and Tokuda (2014).

expected to improve in 2015, it is likely that office rent in the future will also improve reflecting the fundamentals and move closer to the theoretical value.

On the other hand, we have also seen the investment market remain relatively calm. Compared to the Mini Bubble, (1) the risk appetite of investors has not grown stronger, (2) the cap rate has remained high with the exception of Tokyo, (3) the acquisition of assets by JREIT has not expanded to prefectural cities and (4) the real estate price hike has remained limited, excluding central Tokyo. These observations suggest that investors are not taking excessive risks in real estate investment, and are maintaining calm with a selective attitude in choosing their investment targets. We believe the real estate market will continue to stay on a gradual recovery track as long as this selective attitude of investors remains unchanged.

Chart 12: Year-on-year change in real estate transaction price (residential house)

(Y-o-y % change)

	Existing Apartments				Residential Land / Building			
	3 Central Wards	6 Wards Enclosing the 3 Central Wards	Other 14 Wards	Saitama / Kanagawa	3 Central Wards	6 Wards Enclosing the 3 Central Wards	Other 14 Wards	Saitama / Kanagawa
2006	12.8	1.2	11.0	13.4	0.3	14.3	6.7	2.7
2007	7.7	11.0	8.0	8.2	39.0	6.7	11.3	7.6
2008	-5.1	-5.1	-6.2	-5.2	-19.4	-15.1	-14.6	-7.3
2009	-2.4	2.6	-2.3	-0.8	-2.3	-4.1	-8.1	-4.8
2010	5.0	0.3	5.3	11.1	-6.1	-1.2	5.7	0.2
2011	0.9	-4.8	-3.7	-2.2	8.4	-2.2	-3.3	-3.0
2012	-4.2	4.5	1.4	-2.0	-16.0	4.5	1.2	-0.9
2013	12.4	6.5	6.4	7.9	20.3	7.7	2.1	2.5
2014	17.0	10.3	5.1	4.0	16.3	2.1	6.5	-1.8

Note: 1. The "3 central wards" are Chiyoda, Chuo and Minato wards; the "6 wards enclosing the 3 central wards" are Shinjuku, Shibuya, Toshima, Shinagawa, Bunkyo and Taito wards; and "the other 14 wards" are wards other than the 3 central wards and 6 wards enclosing the 3 central wards.
2. Saitama and Kanagawa cover the data for Saitama City, Yokohama City and Kawasaki City, and represent the year-on-year change rate of the fourth quarter of each year (year-on-year change rate of the third quarter was used for 2014).
3. Red boxes represent a rate increase above 15%, white boxes when 0%, and blue when below -15%. The gradation of colors represents the change rates in between these criteria.
4. We have estimated the real estate transaction price by region based on the *Real Estate Transaction Price Information* provided by the Ministry of Land, Infrastructure, Transport and Tourism using the calculation formula of the *Real Estate Price Index (Residential)* and Time Dummy Variable Model of the hedonic regression method (since we could not obtain certain variables, our calculation method is not exactly the same as the method employed by the *Real Estate Price Index (Residential)*.

Source: Made by MHRI based on Ministry of Land, Infrastructure, Transport and Tourism, *Real Estate Transaction Price Information*, *Real Estate Price Index (Residential)*.

Since the data used in this analysis only covers up to 2014, the most recent trends may have not been captured. In fact, we have learned from major financial institutions and investment firms that investors became more cautious about overheating of the real estate market from the end of 2014 through 2015. It is worth noting that amid the worldwide trend of ultra-monetary easing, there is a growing trend of foreign investors acquiring real estate properties in Japan (CBRE and survey conducted by Urban Research Institute Corporation, among others). Up until now, foreign investors have mainly been long-term investors, such as pension funds, life insurance companies and sovereign wealth funds, but there remains ground for the spread of speculative investment. It will be necessary to keep a close eye upon whether the calm and selective attitude of investors confirmed in this analysis will remain unchanged in the future.

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