Selection of the Winning Office Investment Market: Case of Tokyo

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INTRODUCTION: IS IT POSSIBLE TO SELL AND SURVIVE?

Among the major developed countries, Japan's society is aging at the fastest pace. The reasons for this are a rapid decline in the birthrate and a population decrease. One of the real estate markets most affected in the midst of such dramatic change in the population composition is the office market.

Based on this situation, questions such as, "Would it be possible to collect on an investment in the future (can an asset be sold)?" and "Who will take the loss?" are being frequently raised in Tokyo.

This issue is typical of liquidity risk, which is representative of risks associated with real estate investment.

In general, liquidity risk tends to be measured by the time it takes to sell a property once the decision to sell is made (market stagnation period). If the market stagnation period is long, the price of the property may be greatly reduced, or opportunity costs may arise because of a delay in obtaining the proceeds from the sale of the real estate. As such, the longer the market stagnation period, the greater such risk becomes.

What factors affect the market stagnation period? The first factor is the initial sale asking price. The higher the initial asking price in comparison to the market price, the lower the probability of a sale. Moreover, it is known that real estate owners procrastinate in lowering the initial asking price even if they have been unable to sell the property over a length of time at a given price. That is, it takes time to recognize that a property cannot be sold at the asking price.[1]

In the case of real estate for investment, most investments are being made through debt financing. Thus, the selling price can greatly change depending on the particular seller's circumstances, such as how much loan is remaining.[2] The selling price cannot be easily lowered when the loan to value ratio (LTV) is high.[3]

A second factor that affects the market stagnation period is the size of the real estate (i.e., the size of the investment value) and the locality.[4] In addition, there is the possibility that, no matter how much the price is lowered, no buyers would appear. Following the above, it can be agreed that

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factors that greatly affect the market stagnation period are the potential selling price and the individual attributes of the real estate itself.

Let us first think about the selling price. How is the selling price of office spaces (P_t) (the investment value) determined?

As an example, assume Investor A was thinking of investing for a period of 10 years. The investment value of the office building chosen by A would be determined by the cash flow for the 10-year scheduled investment period and the expected selling price in 10 years' time (P_{t+10}). B, the new buyer (investor) appears in 10 years' time, which is when A expects to sell the real estate. B is also thinking of an investment period of 10 years. In this case, B's expected purchase price to be assumed in 10 years' time (counting from the time of B's purchase) (P_{t+10}) would be determined by the cash flow for the next 10 years (year 11 to year 20), and the expected selling price in an additional 10 years' time (20 years after A's purchase of the property) (P_{t+20}).

Thinking about it this way, the expected selling price that A must anticipate (P_{t+10}) would be determined by the cash flow for 10 years from the time when A expects to sell the property (year 11 to year 20) and the expected selling price in an additional 10 years' time (20 years ahead from the time of A's purchase of the property) (P_{t+20}).

If the office building retains its use value in 10 years' time but many investors predict that the building would not generate profits if used for offices for an additional 10 years (20 years later), the expected selling price in 10 years' time (P_{t+10}) would greatly decline.

The above is also true in the case where investments are being made repeatedly over time periods of three years. The expected selling price in three years' time (P_{t+3}) would be dependent on the expected selling price in an additional three years' time (P_{t+6}). (P_{t+n}) simply repeats itself.[5]

As per the above, if the market could make absolute predictions about the future, and the price is determined based on such predictions, it would be impossible for liquidity risk to rise from the extension of the market stagnation period because the initial price was set too high. Neither would it be possible for the real estate to become valueless because it was impossible to sell.

However, information about the future is not absolute. Particularly with regard to the office market; the longer the duration, the more difficult it becomes to make predictions, and variations widen. Under such circumstances, the possibility remains that an office building, in which an investment was made because of the determination that it has current value, may become valueless in the future as an office building. As such, it can be said that the possibility of someone getting the short end of the stick in the future is high.

Based on this situation, when investing in an office building, a survivable office investment market that has fundamentally potentially high earning power must be selected by taking a long-term view to avoid getting the short end of the stick.

The selection of a real estate investment is made based largely on sorting out the property itself and the area in which it is built. Structures like buildings can be managed post-investment through maintenance, renovation or rebuilding. The area, however, cannot be improved with the above-mentioned efforts alone. Particularly when taking a long-term view, it can be said that the selection of the area would be the most essential element of decision-making.

This article will attempt to extract areas that have strong fundamentals as office investment markets and will have a high probability of being the preferred investment areas going forward.

CHANGES IN REAL ESTATE INVESTMENT MARKETS IN TOKYO'S 23 WARDS

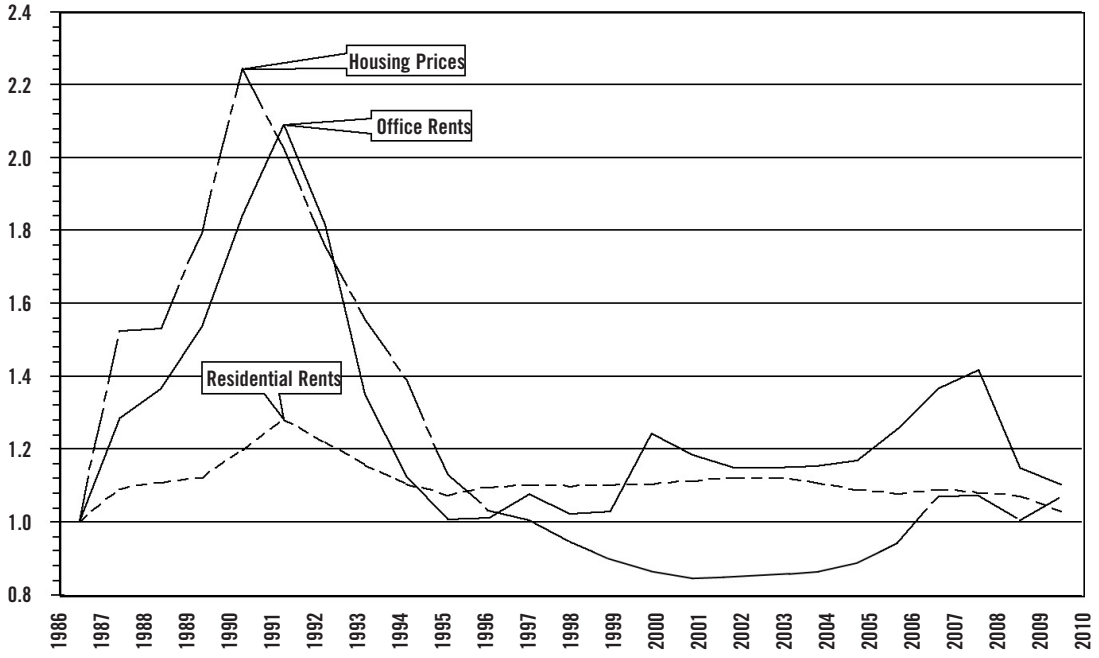
Macroscopic Changes of Real Estate Investment Returns

The macro dynamic trend of the real estate market in Tokyo, as shown in Figure 1, illustrates the changes in office rents, residential rents and housing prices from 1986–2010. Both office rents and housing prices more than doubled between 1986 and 1990–91, when the economic bubble was at its peak. Thereafter, housing prices fell through 1997 to a level lower than that in 1986, taking 20 years, until 2006, to recover. This became the period that would be called the "lost decade."

Office rents were on a recovery trend from the late 1990s to the early 2000s. However, a real recovery was seen from 2005–2007. This period has been called the "mini bubble." It was a period when Japan's real estate market was being revitalized through the effects of the European and U.S. investment banks' huge appetite for investment.

Figure 1

Underlying Dynamics of Investment Returns



Source: Shimizu, 2012

Figure 2

Office Investments: Average Overall Rates of Return

Source: Shimizu, 2012

Residential rents rose by 25 percent during the bubble, and gradually adjusted thereafter until 1995 when they leveled off.

There are signs that the market is rapidly deteriorating given the worldwide recession following the financial crisis that occurred following the collapse of Lehman Brothers in 2008. From 2005 onward, during the period called the mini bubble, it can be assumed that rent adjustments in the market progressed because the market was being supplied with large numbers of rental homes for investment, which caused vacancy rates to rapidly increase.

AREA DISTRIBUTION OF REAL ESTATE INVESTMENT RETURNS

Total Rates of Return

The changes in investment dynamics within Tokyo's real estate market, as shown above, represent macroscopic trends of its 23 wards as a whole. However, where it is predicted that the market will shrink going forward, it is difficult to foresee a situation in which the prices of all of the real estate in all of the areas will rise, and then fall all at once, as happened during the bubble period.

As such, the author decided to observe changes in returns in detailed area units of the 3,134 areas that are surveyed under the national census for Tokyo's 23 wards.[6]

Regarding real estate investment returns, the total rates of return were calculated taking into account the prices and rents (NCRIEF Index in the U.S. and IPD Index in the U.K., Japan and others). The overall rate of return for one year can be calculated as follows:

Equation 1

$$\varphi_{jt} = \frac{R_{jt} + (P_{jt+1} - P_{jt})}{P_{jt}}$$

It is calculated by adding together the income return, which is calculated using the rental income generated when operating for one year, divided by the initial investment amount $(\rho_{jt} = R_{jt}/P_{jt})$ and the capital return, which would be considered the price volatility rate for such year $(\sigma_{jt} = (P_{jt+1} - P_{jt})/P_{jt})$.

Here, the focus is placed on the area distribution. Figure 2 shows the distribution of the average returns of the total rates of return for office investments in each of the 3,134 areas. Areas in Tokyo where economic activities are advancing the most are Chiyoda Ward, with Marunouchi and Otemachi being the central areas; Minato Ward, in which Roppongi and Akasaka are located; and Chuo Ward, home to Ginza. Within these areas, positive income returns cannot be expected because the price levels are high. Moreover, when looking at the total rates of return in these areas, the figure does not show very high rates of return. This was due, in part, to the fact that there were large price fluctuations, which will be discussed later. If anything, the figure shows that rates of return in the suburban areas were higher.

Figure 3 looks at the average of the total rates of return for the residential markets. With regard to residential investments, following a continuous decline in residential prices from the 1990s, prices fell consecutively for about 15 years from 1991 to the mid-2000s. Because capital returns were negative, as compared to office investments, the average total rate of return for all areas has become lower. The price decline was particularly high in areas where high-end residential districts are situated, including Chiyoda Ward, Minato Ward and Shibuya Ward. Because of this, investment rates of return for residential investments in most of these areas have been negative. In contrast, rates of return have increased for those areas that were only slightly affected by the economic bubble and have relatively low price levels. However, in the central Tokyo area, there were positive returns in one part of Chuo Ward.

Risk-adjusted Returns

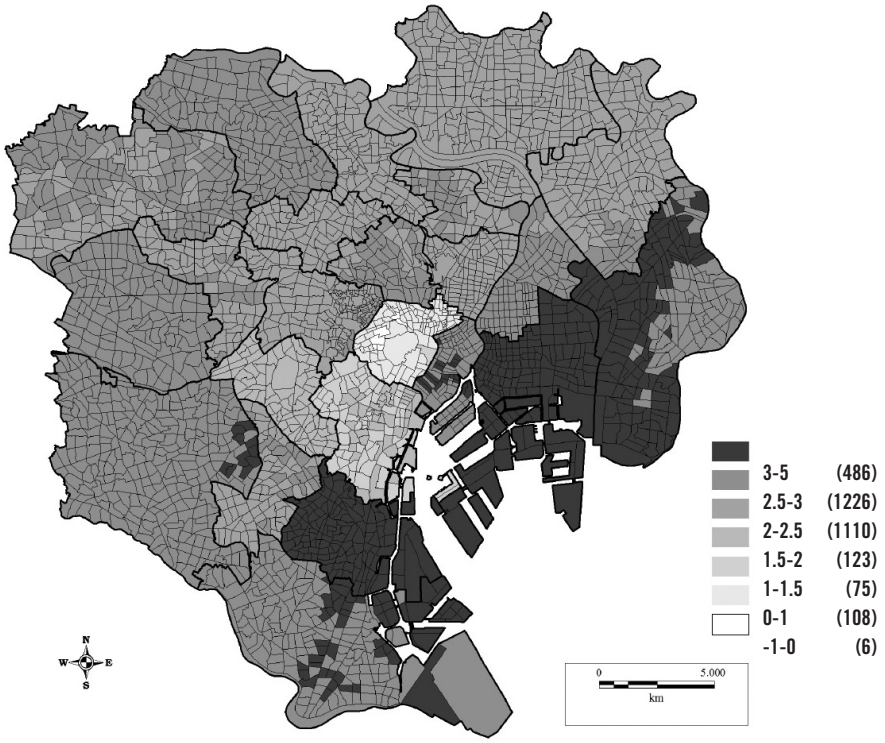
When making a decision on a real estate investment, a determination must be made with regard to both the simple average return (φ_{jt}) in Equation 1 and the amount of risk (σ_j). Comparisons have been made on risk-adjusted returns (φ_{jt}/σ_j) by area (*j*) (Figures 4 and 5) and looking at the risk-adjusted returns for the past 25 years. First, when office markets are compared to residential markets, the profitability on office investments in all of Tokyo is approximately twice as high as that on residential investments, even though volatility in office markets was, on average, twice as high as that in residential markets.

The area distributions show that while the levels of risk-adjusted returns are low in the central Tokyo and southwestern areas, which include Setagaya Ward, Meguro Ward and Shinagawa Ward, they are high in the eastern areas. This trend is prominent in office investments.

Based on comparisons using this type of analysis, investments in the central Tokyo area, which has a large

Figure 3

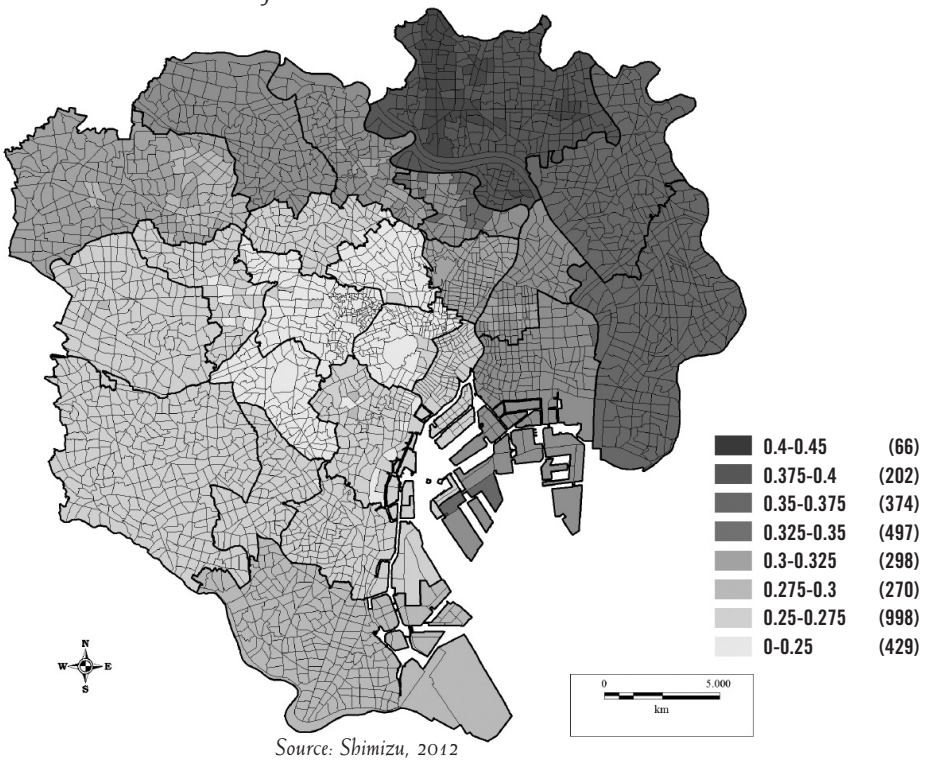
Residential Investments: Average Overall Rates of Return



Source: Shimizu, 2012

Figure 4

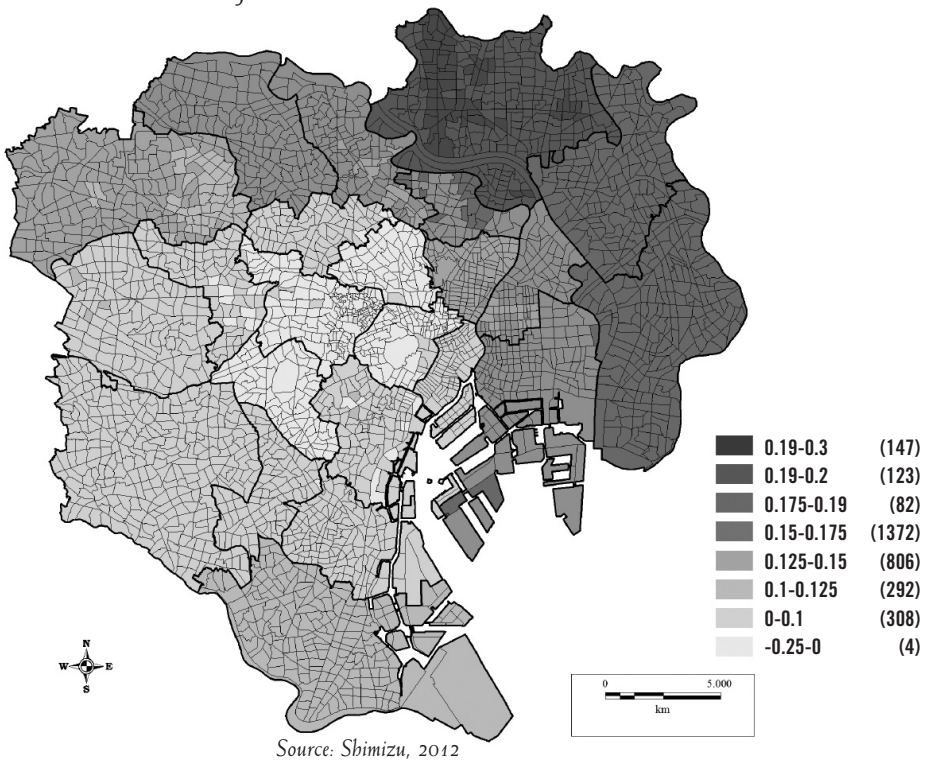
Risk-adjusted Returns: Offices



Source: Shimizu, 2012

Figure 5

Risk-adjusted Returns: Residences



Source: Shimizu, 2012

economic concentration over the past quarter century, attained only low returns compared to the suburbs.

Based on the series of analyses above, we were able to see the changes of real estate investment returns for the past quarter century. From these analyses, one might predict the direction in which the selection of real estate markets could be heading, using detailed area units.

SELECTION OF REAL ESTATE INVESTMENT MARKETS

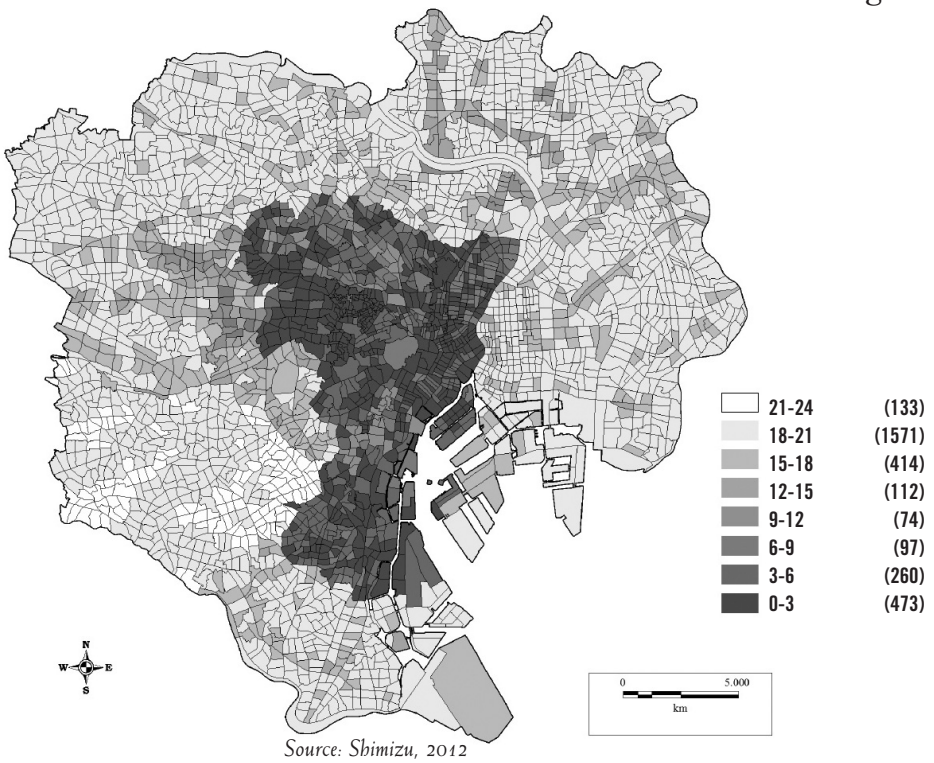
One of the most important elements that determine the rate of return for a real estate investment is the final selling price. It can be said that the biggest risk arises when no buyer can be found at the sales stage. This is an issue to be most cautious about as the whole economy is trending toward shrinking, and the need for real estate is stagnating.

In real estate investment, except in the case of securitization of real estate development, real estate is sold under the premise that its present use will remain the same, and a profit is determined accordingly. On the other hand, there can be a case where the future buyer demolishes the building and uses the new building for a new purpose. Such cases of converting to a new building as a way to improve the returns through redevelopment have occurred for some time. However, in such cases, it means that the present building value becomes zero. In other words, the value of the real estate at the sales stage would include only the land value. As a result, such real estate's price would largely decline, and the probability that there would be large losses on the investment return becomes high. In addition, if the redevelopment does not bring about any improvement on the returns, there is a possibility that no buyer would be found. With respect to an office investment in Tokyo, this is an issue that requires the most care.

When looking at future real estate needs in Tokyo, it can be predicted that office building needs in particular will largely decline because of the effects of an aging society and the accompanying rapid decline in the working age population. In such case, there will be redundancy in the inventory of office buildings. If there is redundancy of office buildings, it does not necessarily follow that vacancy rates in all areas or buildings will on average increase or that the rents will decrease. It would be more natural to assume a case where, in a specific area, the vacancy rates increase all at once, and in the end, it becomes difficult to find tenants no matter how much the

Figure 6

Spatial Distribution of Numbers of Years Where Excess Returns were Negative



Source: Shimizu, 2012

rents are reduced. This is a phenomenon that has already been witnessed in many suburban cities.

In order to avoid such an issue, investments must be made by selecting areas where there is a high probability that the buildings will continue to be used in the future.

From what viewpoint should investment areas be selected?

In Shimizu, Karato and Asami (2010) and Shimizu (2012), a panel random probit model was used to make predictions regarding changes in building use.[7] Based on this model, it became clear that when the return differentials became large when comparing buildings with dissimilar uses, conversions of building use progressed. Among such differentials, it has been statistically shown that rent differentials of risk-adjusted returns (d_{jt}) have significant effects.

$$d_{jt} = \frac{\varphi_{jt}/\sigma_j|Office}{\varphi_{jt}/\sigma_j|Residential}$$

Specifically, even with respect to areas where buildings were used as offices, such areas were converted from the office market to the residential market when returns from office use were found to be relatively lower compared to returns from other uses, such as residential use. It has been predicted that areas that fell into such situations had no choice but to redevelop or suffer from very high liquidity risk.

If return differentials are considered to be signals that prognosticate future changes in the market, it is possible to predict an eligible area for office investments based on the track record of past return differentials. Specifically, when analyzing the office market, we can verify at what scale the risk-adjusted returns, when spaces were used as offices, exceeded or fell below the risk-adjusted returns when spaces were used as residences.

Accordingly, the author looked back over the past 25 years and compared the risk-adjusted returns when spaces were used as offices versus the risk-adjusted returns when spaces were used as residences. Then, within this fluctuating real estate market, the author counted the number of years where the risk-adjusted returns, when spaces were used as residences, exceeded the risk-adjusted returns when spaces were used as offices. It can be interpreted that

the lower the number of years, the stronger the earning power of office spaces were as compared to the earning power of residential spaces.

Figure 6 shows the spatial distribution of numbers of years. According to this distribution, there were only 303 areas out of 3,134 areas where return differentials were never positive. Such areas are limited to Chiyoda Ward, Chuo Ward, Minato Ward, Shinjuku Ward, Toshima Ward, Shinagawa Ward and Taito Ward. Even within Chiyoda Ward, which has the highest average office rents or prices, the area is extremely limited.

This suggests that going forward with regard to office investments in Tokyo's 23 wards, investment decisions must be made within more limited area units.

CONCLUSION: GUIDE TO REAL ESTATE INVESTMENT DURING A DECLINING PHASE

Japan's economy still holds the number three spot in the world on a GDP basis. Japan's political and economic function is concentrated in Tokyo's 23 wards. The social capital and infrastructure required to support the above function are also in place. Tokyo is one of the largest cities in the world, with the daytime population being 11,284,699, according to the 2005 national census, and the nighttime population being 8,949,863 as of 2010. Further, Tokyo's economic scale (gross product within Tokyo) is estimated to be approximately 85 trillion yen (2009) and accounts for one-sixth that of Japan.[8] This means that the Tokyo real estate market, taking into account Tokyo's economic scale and quality of the inventory, would be considered one of the world's most attractive markets.

However, it cannot be denied that growth itself is declining. Compared to many of the Asian countries and developing cities that are showing notable growth, the residual growth power of Tokyo is inferior.

Provided that consideration be paid to a few strong assumptions, the series of analyses in this article suggests the following with regard to a real estate investment.

The first suggestion relates to the spatial distribution, in detailed area units, of the real estate investment returns for the past 25 years. When observing the returns on real estate investment during the quarter century that includes Tokyo's economic bubble, it was found that such returns were not necessarily high in areas that had strong growth. With respect to areas that had strong growth, the margin of decline became greater to the extent that prices rose, and such areas ended up being exposed to high risks.

This suggests that when looking at the real estate investment returns under a long-term perspective, although good capital returns could be expected when investing in areas with potential growth or that have residual growth, such investment also would be accompanied by greater risks.

Meanwhile, if investing in fully grown areas, fixed stable returns can be expected because such areas are being supported by high income returns. When thinking about it in this way, it can be predicted that although large capital returns cannot be expected in Tokyo going forward, exposure to risks in connection with large-scale price fluctuations would also be small.

The second suggestion is made with regard to area selection when undertaking an office investment going forward. When thinking about Tokyo's office investment market, the fact that there will be an overall decline in real estate needs cannot be avoided. In such a case, not being able to sell the real estate upon the expiration of the investment term is an issue that must be avoided at all costs. Thus, investing in an area or building that at some point in the future will end up with zero returns and requires redevelopment must be avoided. In order to avoid this risk, there is an increasing need to rigorously select an area for office investment.

When supposing an office investment in Tokyo's 23 wards, how should the area be selected?

When we looked, from the perspective of making an office investment, for areas in which the office risk-adjusted returns consecutively exceeded the residential risk-adjusted returns for the past quarter century, an extremely limited number of areas—namely, 303 areas—were extracted.

When looking at these 303 areas, the following trends can be recognized.

Tokyo's city formation has been taking place over a long period of time. It began with the founding of the Edo government (1600–1867), and through the Meiji Restoration (1868), when the city function of Tokyo was crystallized as the capital of modern Japan. The shape of the present city was formed as a result of restoration work, first following the Great Kanto Earthquake,[9] and then following the destruction from World War II. Under

such premise, business areas and residential areas that were to serve as nucleuses were formed. And, in the midst of the rapid post-war increase in population and economic growth, Tokyo's city space had to be expanded.

Within Tokyo's city space, there exist areas that serve as nucleuses for businesses and areas that serve as nucleuses for residences. Among them are mixtures of areas that, on the one hand, have not experienced any great changes for a long time, and on the other hand, have experienced rapid changes to their land and building use. Areas that have the highest risk-adjusted returns such as Otemachi, Marunouchi and Nihonbashi have been Tokyo's central business areas through the periods of Edo (1600–1867), Meiji (1868–1912), Taisho (1912–1926), Showa (1926–1989) and Heisei (1989). In such areas, much social capital is accumulated. There is an overlap between many such areas and the 303 areas that were extracted.

It can be easily anticipated that areas whose land use was converted from agricultural or residential use to office use following a temporary need to expand office spaces will, under the assumption that Tokyo will shrink, experience use conversions from offices back to residences. Even within the Tokyo area, there will be areas that will likely be reconverted to agricultural land.

The analyses expressed in this article are simply one type of measure. However, it should be apparent just from this article's analyses that it is essential to have a clear policy of market selection when proceeding with an investment in Tokyo's real estate.

In facing a real estate market that is about to encounter a declining phase in European countries, the U.S. and Japan, keen attention should be paid to how the subject of real estate investment will establish measurements regarding market or area selection in a city. ■

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ENDNOTES

1. In Knight, 2002, it has been pointed out that as the market stagnation period lengthens, a stigma is created that the real estate is unsalable, causing a decrease in the final selling price.

2. In Glower, Haurin and Hendershot, 1998, the sellers' motivation to sell has been surveyed by telephone and the relationship between the sale asking price and the market stagnation period has been examined. The results obtained indicate that when comparing those sellers who need to sell their real estate quickly because of, for example, a change in employment, versus sellers who do not, the asking price of the former is lowered by about 30 percent. This is innovative research in which the differences in selling price based on the actual circumstances of the transactions, as would be referred to in an appraisal, are being surveyed empirically.

3. This is also true in the residential market. It is known that households that have considerable amounts of home loans outstanding tend to set the seller's asking price high and take awhile to bring such price down, which prolongs the market stagnation period (Genesove and Mayer 1997, 2001, and Engelhardt, 2003). In a securitized real estate investment, if the real estate is to be sold at a price that is lower than the outstanding loan amount, the selling price cannot be lowered unilaterally as it would cause financial institutions to incur losses.

4. It has been reported that even in the case of the residential market, the market stagnation period differs for standard real estate versus atypical real estate such as big-sized real estate, and that the more atypical the real estate, the longer the market stagnation period (Haurin, 1988).

5. See Shimizu, et. al, 2012.

6. The focus was placed on the surveyed areas under the national

census of 2005. In principle, the areas subject to surveys done for the national census correspond to each district in each town.

7. Panel random probit model refers to a probit model that has implemented panel data. In this context, three points of chronological data—1991–1996, 1996–2001 and 2001–2006—were used as panel data, and this model has made estimations using cross-section data in mesh units. Random probit model has investigated the effects of excess returns on real estate by applying one of the following variables: if increased, the variable would be 1; and, if not, the variable would be 0.

8. Japan's nominal GDP in 2009 was 474,040.2 billion yen. The gross product within Tokyo in 2007 was 93 trillion yen, but following the economic crisis, it declined at once. It is thought that this is because the financial businesses that were affected the most from the economic crisis are accumulated in Tokyo.

9. The Great Kanto Earthquake occurred in 1923 with a magnitude of 7.9, centered in 80 kilometers northeast offshore of the Sagami Bay, has been the most devastating earthquake in Japan. In the course of restoration from the quake, Tokyo built up its framework as a modern city by proactively developing infrastructure through street expansion programs, land readjustment programs and other measures.