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**New Patterns of Investment under Real Estate Securitization: Evidence
from the Tokyo Market**

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New Patterns of Investment under Real Estate Securitization: Evidence from the Tokyo Market

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Over the past few decades, financial markets have become increasingly intertwined with property markets. The deregulation of the financial industry, which originated in the United States in the early 1980s and gradually spread to Europe and Asia, was a crucial milestone. This process was followed by an unprecedented wave of globally synchronised property cycles characterised by exceptionally strong booms followed by sharp land and real estate busts (Renaud, 1997). However, none of these speculative mechanisms actually attained the magnitude of Japan's so-called 'land bubble' (1985-1991), the bursting of which left the economy damaged for two decades.

The Japanese boom-bust cycle has been extensively researched. Most authors have highlighted the distortions in the capital supply process caused by the deregulation of financial markets and the resulting competition within the banking sector in a context of monetary ease. The magnitude of this cycle was further exacerbated by taxation and accounting systems that actively encouraged speculation (Noguchi, 1989, Nishimura and Miwa, 1990; Shigemi, 1991; Mera and Renaud, 2000; Dehesh and Pugh, 2000; Kerr, 2002; Cockley, 2004). Another equally important factor has been 'place marketing', introduced by the public authorities to draw massive flows of private capital into building production in the largest metropolitan areas, with measures including compliant urban planning and building regulations (Machimura, 1992, 2000; Hayakawa and Hirayama 1991; Hasegawa 1995; Aveline 2003, 2005; Saito and Thornley, 2003).

Following the bust of the 'bubble', the Japanese economy found itself at risk from the high exposure of its financial sector on land collaterals. Real estate securitization was therefore established in an attempt to unfreeze the property markets. This technique involves the conversion of large, illiquid property assets into liquid and affordable shares in listed or unlisted funds. Having emerged in the United States half a century ago, real estate securitization took root in Asia in the early 2000s, where it gained considerable success (Whiting, 2007). Yet nowhere did securitization develop as fast as in Japan. Within five years (2003-2008) the market capitalisation of securitized real estate grew from 1.5 to 22.1 trillion JPY (from US\$ 19.5 billion to US\$ 288.2), making this sector a driving force in Japan's property markets.

Securitization tends to intensify the convergence of finance and real estate, transforming properties into a 'quasi-financial assets' (Cockley, 2004) and exposing them to the growing cyclical and volatility of global financial markets (Ball, 1994; Leitner 1994). Despite the significant changes brought about by the boom in securitization in Japan, academic interest in Japanese property markets has waned considerably. Tokyo has undergone an ambitious rescaling process with a dramatic rise in its skyline owing to the massive injection of capital by listed and unlisted funds. This active building production was even marked by a 'mini-boom' in land prices during the years 2005-2007. Although some authors have addressed the issue of urban restructuring (Waley, 2007; Hirayama, 2010; Sorensen et al. 2010), discussion

has focused on urban planning and governance issues without taking the financial aspects into consideration.

Yet the growing dominance of finance in the property sector has major implications in terms of investment strategies, with risks and returns used as the exclusive criteria to assess the performance of building portfolios. This paper, which is part of a special issue on 'finance, business property and urban and regional development', examines how the emergence of securitization has modified the organisation and behaviour of players in Tokyo's property sector and how this in turn has affected the geography of building construction and land market dynamics.

To this end, the paper draws upon a growing body of research literature that emphasises the role of the development process as a fully-fledged component of economic production. Healey and Barrett proposed a conceptual framework of 'development production' based on the evolving relationship between *structure* (how decisions are framed by agents) and *agency* (the framework within which individual agents make their choices) (Healey and Barrett, 1990.) In Japan, where traditionally land investment has been deeply rooted in the economic and social structure (Calder, 1986; Wood, 1994; Kerr, 2002; Aveline-Dubach, 2008), the growing dominance of a real-estate focused approach – with land as a mere component – may significantly alter the 'agency' of the local real estate development sector.

Institutional research has also provided evidence of distorted investment geographies produced by the reliance on financial assessment criteria in the real estate sector. Henneberry and Roberts highlighted the cognitive bias caused by benchmarking techniques that encourage fund managers to over-invest in 'core locations' (namely London) and under-invest elsewhere in the office sector (Henneberry and Roberts, 2008). Theurillat observed a similar over-concentration of property investment by Swiss pension; their poor spatial diversification was ascribed to the increasing distance in the relationship between capital holders and property investors resulting from the centralisation of financial centres (Theurillat at al., 2010.) The new dynamics of financial capital have also received growing attention recently from geographers investigating the spatial patterns that are shaping the financial markets and their institutions (see Lee at al., 2009, for a review). Institutional research remains underdeveloped, however, with regard to securitization—especially in the real estate sector, a gap this paper aims to help fill.

To gain an understanding of the investment strategies implemented by Japanese asset managers, we decided here to focus on the portfolios of listed J-REIT funds (Japanese Real Estate Investment Trusts). Although J-REIT funds do not hold a major share in the total asset capitalisation of securitized real estate, they are prominent players in property markets. Their portfolios contain the largest number of buildings and as listed public funds they display the highest degree of integration between finance and real estate. Furthermore, information concerning these funds is far easier to access. We conducted semi-structured interviews with 12 asset management companies (out of 31) affiliated to office and retail J-REIT funds operating in the Tokyo National Capital Region. Drawing on these interviews, as well as secondary research material derived mainly from the ARES (Association for Real Estate Securitization), we highlighted the strong concentration of investment in Tokyo's five central wards.

Such marked geographic polarization of property investment may significantly alter the dynamics of land markets. The media actually blamed J-REIT funds for driving up land prices

in Tokyo's central zones. Yabe (2008) conducted a geographically-weighted regression analysis of land prices and confirmed that land price changes in downtown Tokyo had been spatially polarized by J-REIT investments. However, the data used by Yabe (2008) only covers the period 2001-2005. To examine how J-REIT investments have modified land market dynamics it is necessary to take into account the speculative mechanism that existed prior to their launch (the 'land bubble' of the 1980s) as well as the 'mini-boom' of 2005-2007. We have therefore conducted a multiple regression analysis focusing on the peak of the two land booms (1991 and 2007) in order to analyze trends in land prices near J-REIT locations.

This paper is structured as follows. In the first section we describe the context in which real estate securitization emerged and we look at the subsequent standardization of the property industry. The second section deals with the new commercial real estate investment geographies and the third section examines their impact on property markets.

1. The emergence of securitized funds in Japan

The development of real estate securitization in Japan took place in a very different context when compared to the 1980s. It is important to review these changes if we are to better understand the extraordinary success of securitized funds in the property sector.

The evolving background

The collapse of stock and land markets in Japan in the early 1990s brought about an unprecedented financial crisis. Japanese banks were heavily exposed to the drop in land prices because a large portion of their loans was secured by land collateral. They were plagued by accumulating non-performing loans which prevented them from granting new loans. Yet cleaning up their balance sheets required an urgent reactivation of the distressed real estate sector through a new supply of funding.

A similar situation had existed in the United States a few years earlier during the savings and loans crisis. Financial measures such as real estate securitization had been used as an alternative source of funding to liquidate non-performing loans in the early 1990s. These measures contributed to the relatively quick recovery of real estate markets and swiftly put banks back on a sound financial footing. By 1997 the Japanese banking sector had hit rock bottom and no recovery was in view, despite the policy of ultra-low interest rates. American investment banks (notably Merrill Lynch and Goldman Sachs) sought to use their knowledge of securitization techniques to take advantage of Tokyo's distressed land markets. They were also looking for fresh opportunities to diversify the portfolios of their American customers in a context of sluggish domestic property markets (Ide, 1999). In 1997 they launched the first securitized fund in Japan and in 1998 a legal framework was adopted to open up the real estate sector to a whole new category of investors. By facilitating access to real estate investment, securitized funds helped to unfreeze Tokyo's property markets.

Initially, capital originating in the United States took the form of opportunistic funds targeting short-term investments with high risks and returns. As the markets gradually recovered, domestic investors began to predominate and investment strategies became more stable and less risky. A wide range of securitized funds now exists with various strategies both in terms of risk/return expectations and property development objectives. Amongst domestic funds,

those with the highest risk are ‘development funds’ and ‘value-up’ funds, managed respectively by major property developers and institutional investors, with both types seeking high returns from redevelopment projects; investments with the lowest risk are long-term investments, such as the REIT-funds or the private funds managed by Japanese pension funds.

The development of real estate securitization has been stimulated by a major change in the context of urban development. The bursting of the ‘land bubble’ put an end to the Post-War urban paradigm characterized by land scarcity, continuous urban growth, and increasing land values in big cities. In the early 1990s, all of these components were dramatically reversed.

The scarcity of land in Tokyo’s centre gave way to a surplus of available construction space. During the ‘bubble’ years, loose monetary policy and accommodating tax/accounting regulations had encouraged corporate investment in land without any related development project. Japanese companies had benefited from ‘hidden assets’ (*fukumieki*) due to the discrepancy between book values and actual market values. After the plunge in land values and the subsequent end to the ‘land myth’, these hidden assets threatened to become ‘hidden losses’ (*fukumizon*). Corporations were also hit by the impact of the financial crisis on the real economy, forcing them to radically restructure and refocus on their core business. Additionally, Japan had decided to comply with International Accounting Standards. This meant that the book value of landholdings became their fair value (i.e., their actual market value). This revision, which was enforced in 2005, encouraged corporations to get their assets off their books. A large proportion of these land assets – up to 71% in the first semester of 2006 (Mitsui UFJ Trust Bank, 2008, p.113) – was sold to private funds or REITs. Securitized funds were instrumental in recycling the supply of redundant corporate landholdings and simultaneously transferring the development risk to external investors – either institutional investors in the case of private funds, or Japanese households in the case of REITs.

The continuous urban growth that had characterized the Post-War period was replaced by a concentration of commercial and residential functions in downtown Tokyo. This move did not only result from the slump in land values. It was intensified by the new wave of building deregulation launched in the mid-1990s which went hand in hand with a policy of encouraging people to live in the downtown area once again. These measures were aimed at addressing the post-bubble recession in an attempt to regain economic competitiveness by rescaling Tokyo’s center (Sorensen et al, 2010; Hirayama, 2012). The massive construction of high-rise buildings has radically transformed Tokyo’s urban landscape. Of the existing 350 skyscrapers over 100 metres tall, 54% were constructed after 2000, compared to 14% before 1985 and 35% between 1985 and 1995¹. A significant portion of these buildings was financed by securitized funds, including the major Roppongi Hills building complex owned by a private ‘development fund’ controlled by the Mori Building group².

The current status of securitized funds

¹ Emporis database (<http://www.emporis.com/en/wm/ci/bu/sk/li/?id=100297&bt=2&ht=2&sro=0>) checked in September 2011.

² The Roppongi Hills private securitized fund amounted to 270 billion yen (3.22 billion US\$), including 100 billion yen in equity raised by the Mori Building group and a huge non-recourse loan totalling 170 billion yen.

There are currently more than 1,500 private equity funds and 34 J-REIT funds. Their asset capitalization accounts for 15,9³ and 8 trillion JPY respectively (figure 1). According to a survey of 64 real estate management companies carried out by STB Research Institute, private funds have an average target investment period of 6.4 years — a significant increase over the past six years (3,8 years in 2005⁴). The vast majority hold only one property in their portfolio but some may have up to twenty. In order to maximize their financial leverage, private funds generally maintain a loan-to-value ratio of between 65% and 70%. About half of the value of their assets is invested in office buildings, 12% in residential units and 23% in retail facilities. The rest consists of warehouse and hotel holdings as well as a small percentage of mixed-use properties⁵.

Figure 1. Comparative growth of private funds and J-REITs
Figure 1. Distribution of J-REITs portfolios in the Kanto region (number of buildings)

Category	23 wards	Other Tokyo	Chiba	Kanagawa	Saitama	Ibaraki	Gunma	Tochigi	Total
Office	328 (188 in the three central wards)	9	5	38	8	2	1	3	394
Retail	31	10	10	16	10			1	78
Residential	586 (168 in 3 central wards)	28	53	42	17	2	2		730
Other	35		10	22	12				79
Total	980	47	78	118	47	4	3	4	1281

Source: compiled by N. Aveline-Dubach using data from the ARES (as of January 2010)

J-REITs are the only listed ‘public’ funds. Unlike private structures dedicated to institutional investors and property developers, J-REITs provide small individual investors with an easy way of staking an ownership claim in large properties, usually by raising funds of funds. J-REITs purchase property using debt financing and equity financing raised from investors (individuals, institutional and overseas investors). They use their rental income to repay the loans and share dividends with investors. J-REITs are required to distribute 90% of

³ STB Research Institute, News Release, March 2011, p. 2

(http://www.stbri.co.jp/file/pdf/release_eng/20110310_e.pdf). This figure does not include assets in Japan managed by global funds. According to the estimation of the STB Research Institute, the total market size of private funds is approximately 17.5 trillion ¥ (p. 1).

⁴ STB research institute, *ibid.*, p.

⁵ ARES “Results of the 5th Survey of Members Regarding Actual Condition of Real Estate Private Equity Funds”, March 1, 2010, (http://www.ares.or.jp/jrem/images/pdf/pr_20100301_en.pdf). These figures only concern ARES private fund members which hold approximately two-thirds of the total asset value of private funds.

their profits to investors as dividends. In return, they reap the benefit of a tax exemption that allows them to avoid corporate income tax thus helping them to pay high yields.

Unlike private funds, J-REITs are not involved in redevelopment projects since their main purpose is to purchase and manage rental properties on a long-term basis. All of their functions are outsourced, including the management of building portfolios, which is entrusted to an asset management company that is often affiliated to the financial backer group. J-REITs typically finance their investments through bank loans and they maintain a 40% loan-to-value ratio; the remaining 60% is raised on the stock market. The leverage effect is minimized in order to limit the risk for investors and most REITs set their potential maximum loan-to-value ratio at sixty per cent. Regional banks hold a significant proportion of J-REIT equity as these vehicles do not involve any currency risk. However, other institutional investors looking for stable long-term investments, such as pension funds, tend to favor private core funds since they are less volatile⁶.

The thirty-four J-REITs currently listed hold portfolios of several dozen buildings totaling 1,930 properties nationwide, of which 1,281 are located in the Tokyo Capital Region. These structures can be classified into two main categories. The first category is dedicated to the management of a single asset class. Seven funds specialize in office property. Their portfolios which include fifty to sixty buildings contain a majority of high-end assets in prime locations in central Tokyo. Their purchase value accounts for one-third of the total value of J-REIT assets. Prominent real estate companies affiliated to industrial or financial groups – Mitsui, Mitsubishi, Nomura and Daiwa – are the main backers for four of these funds. There are seven residential real estate J-REITs holding approximately twice the number of buildings managed by office property J-REITs but their value does not exceed 18% of the total value of J-REIT assets. Residential J-REITs are backed by real estate companies (including the Mitsui and Nomura groups), as well as a general trading company (Itochu). A few funds have also been launched in the retail sector (2), hotels (2), industrial and infrastructure properties (2), backed by consortiums of banks and insurance companies or by prominent conglomerates (Mitsui, Mitsubishi).

The second category of J-REITs invests in multiple classes of real estate assets. Six of these funds combine two types of real estate assets: residential and office, office and retail, residential and retail. The other nine funds manage compound portfolios and there are no limits on the type of investments they engage in. Unlike the first category, funds managing multiple-asset class properties are backed by a wide range of investors: domestic and foreign banks, railway developers (Hankyu, Tokyu), and real estate companies that are not affiliated to prominent industrial or financial groups (Mori Building, Sekisui House). They are also distinguishable from single-asset class funds by the greater diversity in their portfolios, both in quality and area distribution: some funds are specialized in regional asset management, such as the MID REIT and Hankyu funds in Osaka, and the Fukuoka fund in Kyushu.

Behavioral changes in the development industry

The expansion of the securitized real estate market has brought about new practices within the development industry. Three categories of ongoing changes should be mentioned. First, the method used to value property has changed from the Sales Comparison Method to the Discounted Cash Flow analysis method (DCF). The former consists in selecting comparable

⁶ Pension funds also invest in J-REITs, but only as a complementary investment since these funds are considered too volatile when compared to private core funds.

properties with similar characteristics to the property to be appraised, preferably in the same area or as close as possible; the latter, widely used in investment finance and corporate management, is based on the future cash flows (rental incomes) that can be derived from an asset. The rationale underlying the two methods differs markedly: while DCF takes into account the time value of money and builds on a set of expected future parameters (rental income, annual increase in rent, interest rates, risk premium), the sales comparison method tends to extrapolate existing property market trends. Although both methods involve appraisals by an expert that comprise a certain proportion of assumptions and estimates, DCF is widely considered to be a more accurate and sophisticated technique than sales comparison, which tends to reinforce cyclicalities. The Japanese Government therefore decided to impose DCF as the primary tool for appraising J-REIT properties. Training courses were organized to help certified appraisers become familiar with the new computerized property valuation methods, however, several older certified appraisers could not keep up and retired from the valuation business.

When the ‘bubble’ burst and American investment banks appeared on Tokyo’s depressed property market, they began to purchase properties based on the DCF valuation approach. Given the low expected earnings, these valuations were significantly lower than those based on the comparison method. This came as a shock to Japanese property operators (Ide, 1999) and put an end to the myth of constantly increasing land values. This shock led market operators to consider the profitability of real estate rather than capital gains on land.

A further outcome of this new approach has been the emergence of the notion of real estate. The growing influence of real estate securitization, notably in the REIT sector, has been instrumental in bringing about this change since fund performances are measured by their capacity to secure profitable earnings from their properties. To keep yields at satisfactory levels, J-REITs must maintain high levels of technology and service at their properties. When a building becomes obsolete, the fund will sell it on to a property developer, often belonging to the same group. The building is then renovated or reconstructed before being transferred to another member of the group, an external company, or sold back to the J-REIT. Building renovation has progressed in Japan as a result of growing concerns about ‘urban sustainability’ and the impact of wear and tear. Anti-seismic technologies are now sufficiently mature to allow for life cycles of several centuries for new buildings. Obsolescence in terms of IT technologies or services can be dealt with through renovation.

The growing concerns over real estate are clearly visible in the increasing use of the Japanese term ‘*fudosan*’ (literally ‘non-mobile asset’). This term, originally translated from the French word ‘*immobilier*’, had previously been restricted to a narrow field of legal or fiscal items. Economic or political items were usually referred to as ‘land markets’ or ‘land policies’. However, under the growing influence of securitization, the term ‘*fudosan*’ now tends to be associated with market dynamics. However, one would be mistaken in thinking – as some have stated – that land has lost its importance. Official land prices, which are widely known to be manipulated by the government in order to attenuate peaks and troughs, remain a benchmark for land taxation. Furthermore, they continue to play a role in indicating the economic climate: an increase in land prices is seen as a favorable sign since it indicates a return to normality in macro-economic trends (Aveline-Dubach, 2008).

Finally, a change has occurred in terms of the increasing transparency in property market information. J-REITs in particular are now subject to strict disclosure requirements by public authorities. Information on their comparative performances can easily be accessed on their

websites. Their professional association ARES (the Association for Real Estate Securitization) also provides timely and comprehensive data on their portfolios and performances. Admittedly, this improvement in the supply of information is a noteworthy advance in a field characterized by its lack of transparency, however private securitized funds are not subject to similar requirements and therefore remain highly opaque. A plethora of information concerning real estate markets is readily available but these data do not rely on actual transaction values. According to the global transparency index compiled by Jones Lang LaSalle, Japan ranks twenty-sixth out of eighty-one countries, lagging behind Poland and South Africa (Jones Lang LaSalle, 2010).

2. Geographical diversification strategies of REIT funds

In this section we will analyze the diversification strategies of J-REIT funds. We have used the data compiled by ARES to compile GIS maps of the 551 commercial and retail buildings (out of 1,281) held by J-REIT funds in the Tokyo Capital Region (Tokyo Prefecture and the three neighboring prefectures of Chiba, Kanagawa and Saitama).

Geographic distribution of office portfolios

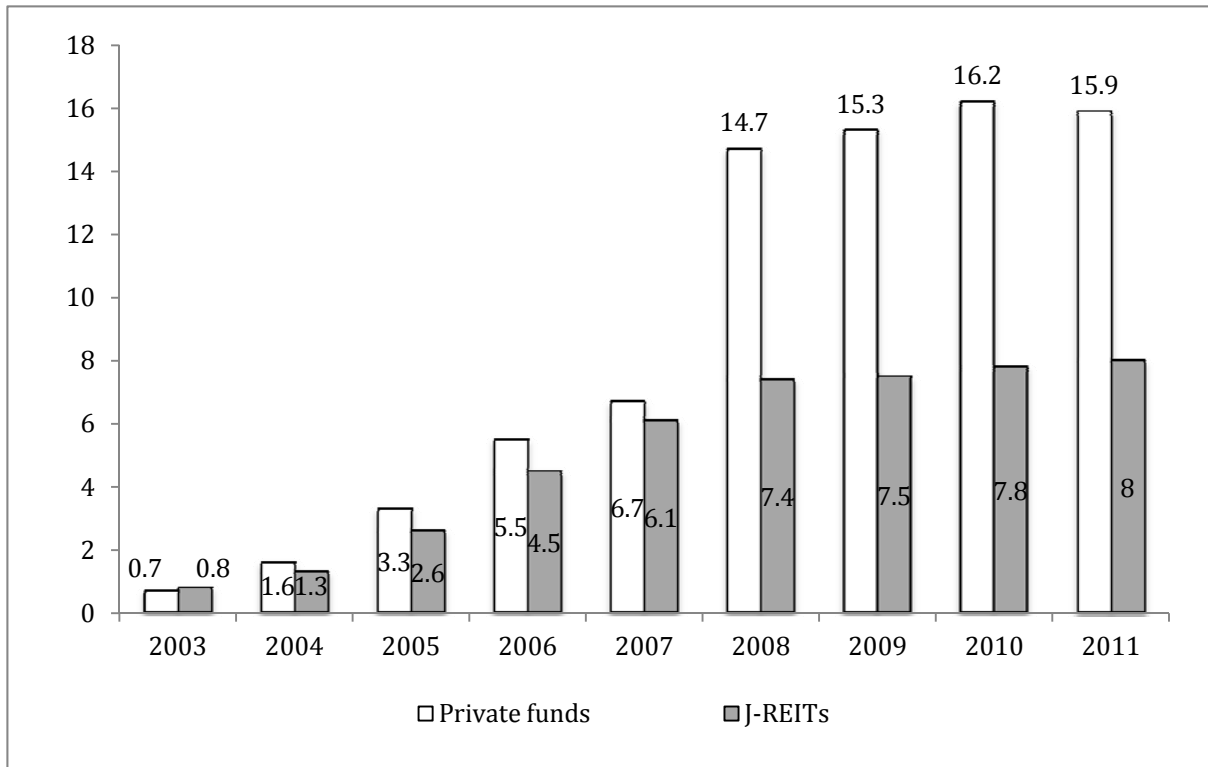
Investment in the office sector is the most strategic, not to mention the most prestigious portfolio activity. It allows J-REIT backer groups to maintain a prestigious stock of office space in prime locations while transferring the risk to external investors. Furthermore, it enables close ties to be maintained with major tenant firms by providing a continuous supply of high-performance buildings. The value of office property portfolios totaled 4,737 billion yen in December 2011, representing 56% of the total value of assets held in J-REIT funds⁷. The 394 office buildings in the J-REIT portfolio for the Tokyo region account for 30% of the total number of buildings. More than 80% (328 buildings) are concentrated in the twenty-three special wards and almost half (48%) in the three central wards⁸.

All J-REITs pursue a similar strategy in terms of geographic diversification. They focus on three main areas consisting of Tokyo's CBD, other places in greater Tokyo and other cities (figure 2). The purpose of area diversification is to minimize cash flow risk due to earthquakes for example, and vacancy risks. REIT funds typically invest 70% of the total value of their assets in the Tokyo region and 30% or less in other cities. Tokyo's CBD (three or five central wards, depending on the definition of each fund) offers relatively high rents and low vacancy rates compared to other cities. It also provides a relatively large market scale (both leasing and purchase/sale) with high growth rates and high liquidity at the time of sale. However, this is offset by low annual yields. In other cities rents are relatively low and vacancy rates relatively high compared to Tokyo's CBD. Furthermore, the market is smaller in scale and growth rates are lower, as is liquidity at the time of sale. This is offset, however, by the relatively high yields on such assets.

Figure 2. Comparative growth of private funds and J-REITs (in trillion JPY)

⁷ ARES, overview of J-REIT markets (http://jreit-view.ares.or.jp/jreit_e/JRV004.html, checked in February 2012).

⁸ ARES database (as of January 2010).



Source: compiled by N. Aveline-Dubach using the data of the AREIT and the STB institute.

After the subprime mortgage crisis, most J-REIT asset managers began to focus increasingly on the Tokyo region which now receives 85% to 90% of investment. This growing importance can be explained by the perception of managers that other regions, notably the conurbations of Osaka and Nagoya, involve a higher risk. This is a matter of concern for regional balance because undersupply in regional property markets may significantly affect growth in local economies. The decrease in land prices in central Tokyo has undeniably led to a massive relocation of firms from Osaka and Nagoya to Tokyo. A similar shift has also been witnessed in the Tokyo Metropolitan Area where firms tend to migrate from Yokohama, Chiba and Saitama to Tokyo's central wards.

The office portfolios of J-REIT funds tend to specialize in a given category of office building (class S, A, B or C). A broad mix of categories is not appreciated by investors since it does not provide a clear vision of the management strategy or the subsequent risks involved. The *keiretsu* companies and large conglomerates hold the most prestigious portfolios. Their S and A class buildings, located in the three central wards (Ginza/Marunouchi/Otemachi), usually attract core investors (funds of funds seeking long-term and stable investments). The solid reputation of the conglomerates and the prestigious location of their building portfolios make J-REIT core office investments a good alternative to unattractive postal savings accounts. J-REITs are viewed as bonds rather than equities by Japanese individual investors. In this rapidly ageing society they are seen as acceptable long-term savings vehicles since they do not involve any currency risk. However, they are not immune to market shocks, as evidenced by the impact of the subprime mortgage crisis (see next section).

The class S and A building markets (over 200-300 *tsubo* per floor⁹) were generally considered

⁹ The *tsubo* is a commonly-used standard in Japan to measure the area of land and real estate. It is equivalent to two tatami mats or 3,306 square meters

the least volatile and thus the most secure. However, tenants of class S/A offices are usually foreign financial institutions and professional firms such as legal or consulting companies which tend to be more affected by economic downturns and are more limited in number. Since the subprime mortgage crisis, class B offices have thus become the least volatile. With a price range of between three and ten billion yen, they are also easier to sell since a single lender would be able to purchase them¹⁰.

Geographic distribution of retail portfolios

Figure 3 indicates the spatial distribution of office building portfolios held by J-REIT funds in the Tokyo region. A high concentration of investment can be seen in the inner part of the JR Yamanote loop line. Office buildings are located along the JR and subway networks, in particular the Ginza and Hibiya lines (figure 4). Also noteworthy is the concentration of offices in the Eastern part of Tokyo's CBD where FAR¹¹ deregulation has been implemented on a massive scale. Outside the centre, office buildings are located along JR lines in major suburban cores (in a clockwise direction, from South-East to North-East: Yokohama-Kawasaki, Hachioji, Saitama and Funabashi).

Unlike office funds, J-REITs specialized in retail hold a limited number of buildings whose value and number respectively account for 18% and 6% of the total. These recently-launched funds seek to benefit from the ongoing restructuring of the retail sector, including the increasing predominance of large shopping centers. These properties are increasingly enticing customers away from traditional retail outlets such as small stores in local shopping areas. Although the City Planning Law and Building Standards Law were amended in 2007 in an effort to slow large-scale commercial development in suburban areas and promote the efficient use of urban infrastructure, specialized retail funds rely on the attractiveness of these facilities in order to grow both in aggregate terms and as a percentage of total retail sales.

The funds specialized in this sector are all backed by major *keiretsu*-group firms: Mitsubishi Corp in partnership with USB Realty for the Japan Retail fund (59 properties) and Mitsui Real Estate for the Frontier Real Estate Investment Corporation. Both funds have greater geographical diversification than that witnessed in the office sector with forty to fifty per cent of their investments located in major cities outside of the Tokyo region. Furthermore, they rent numerous facilities of various sizes to the prominent Japanese retail group AEON.

Figure 5 shows not only commercial real estate owned by REIT funds, but also buildings that combine a commercial activity with other activities in other sectors (e.g., residential property, retail outlets or offices). In the three central wards, the spatial distribution of retail space is similar to that of offices (figure 6). However, in the suburbs, retail REITs show a marked geographic diversification, following JR railroads along the axis constituted by the Saitama-Yokohama line, as well as commuting lines operated by private railway companies.

Though not specialized in retail, the Tokyu REIT is worth mentioning here. Its portfolio is composed of retail and office buildings located for the most part around the railway company's major hub, Shibuya station, and along the Tokyu network. Tokyu group companies reinvest cash collected from selling properties in the REIT fund. This reinvestment has several benefits: it helps boost economic activities in areas located along Tokyu railway

¹⁰ KPMG "Current Japanese Real Estate Market 2010".

¹¹ Floor-area-ratio in building construction.

lines, thus improving the added value of areas targeted for investment by the REIT fund, and both maintains and improves the value of the properties held. In other words, the REIT fund enables the Tokyu group to tighten its control over its railway networks and major hubs.

Figure 3. Spatial distribution of J-REIT office portfolios in the Tokyo region (as of January 2010, compiled by the authors using ARES data)

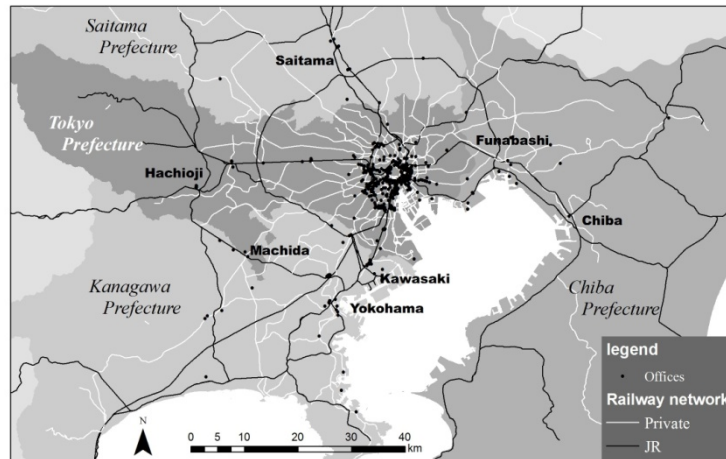
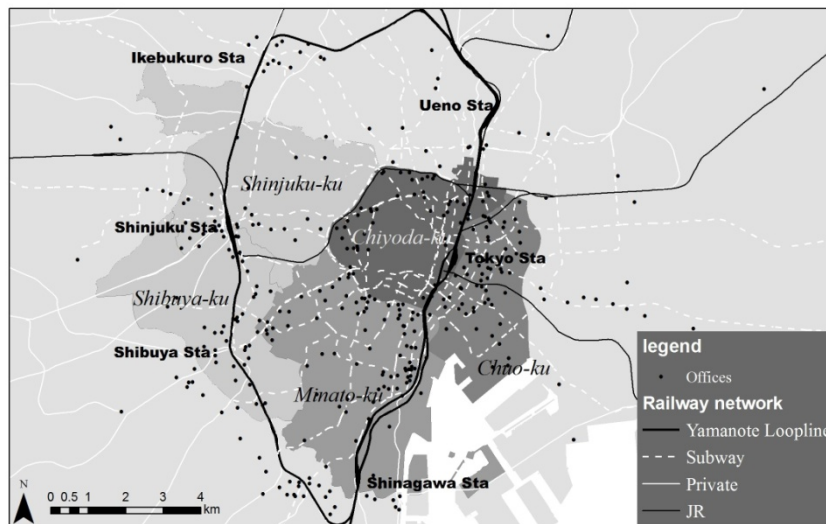
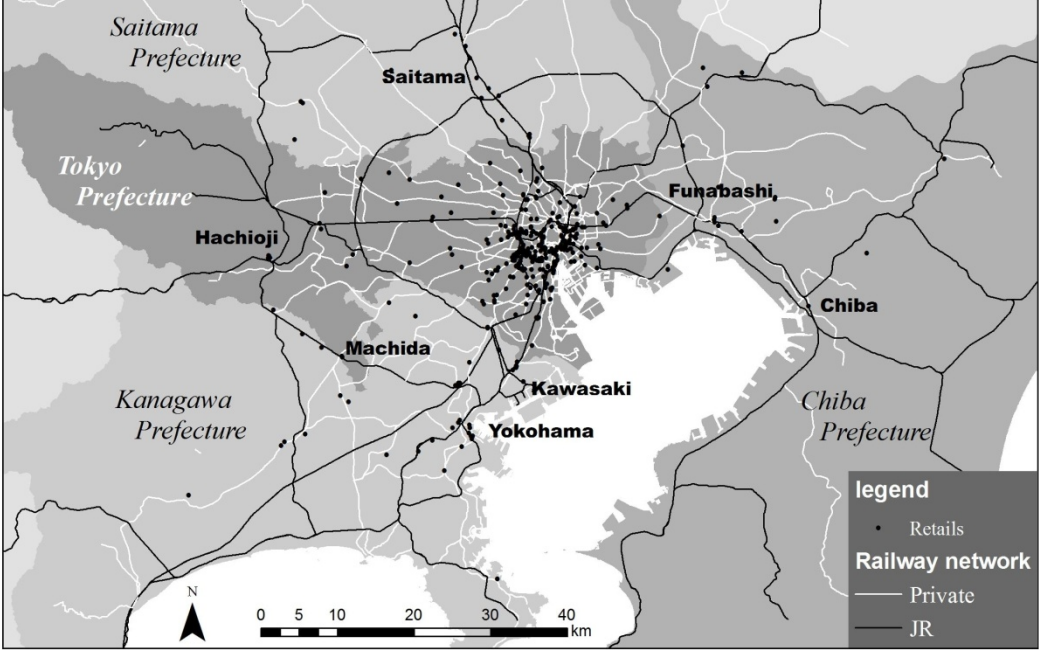


Figure 4. Spatial distribution of J-REIT office portfolios in Tokyo's central zone (as of January 2010)



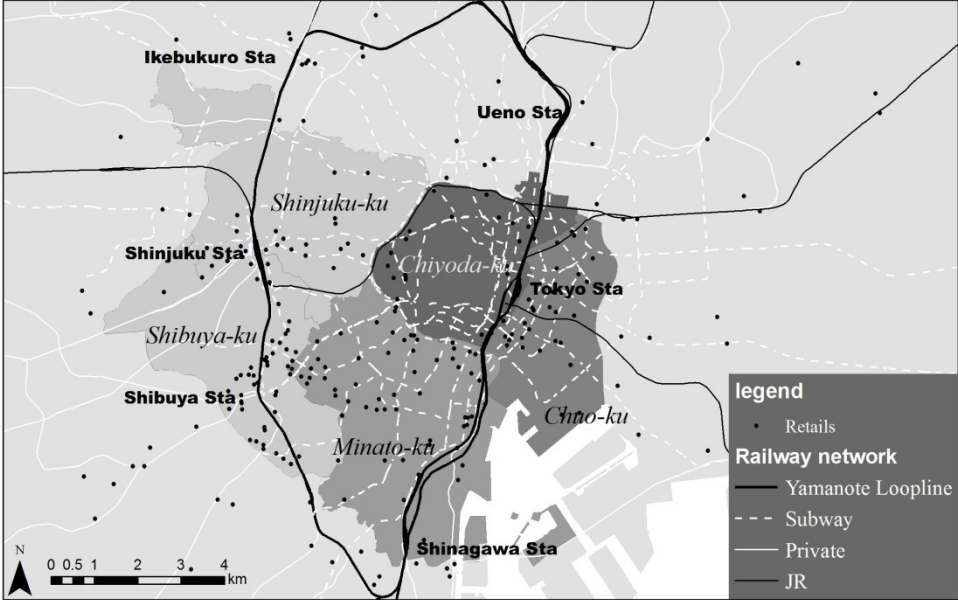
Source: compiled by the authors using ARES data.

Figure 5. Spatial distribution of J-REIT retail portfolios in the Tokyo region (as of January 2010)



Source: compiled by the authors using ARES data

Figure 6. Spatial distribution of J-REIT retail portfolios in Tokyo’s centre (as of January 2010, source ARES)



Source: compiled by the authors using ARES data

3. The impact of J-REIT investment on land prices

We examine here how securitization has altered land market dynamics in Tokyo, especially over the period 2005-2007. The major issue addressed here is the role played by J-REIT funds in the surge in commercial land prices during this period. We will first relate the context in which the ‘mini-land boom’ took place and then perform multiple regression analysis to assess the changing impact of J-REITs over time, taking into account the ‘land bubble’ of the 1980s.

The ‘mini land boom’ (2005-2007) and the role of securitized funds

Unlike private funds, J-REITs were initially dominated by domestic investors as their primary goal was to funnel the savings of Japanese households into the real estate sector. However, foreign funds became very active in these markets between 2005 and 2007. From April 2004 onwards they purchased an increasing volume of shares and invested heavily in J-REITs from December 2006 to June 2007. Investment peaked at over 140 billion yen in February 2007 (Mitsubishi UFJ, 2010, p.37). Meanwhile, foreign investors also launched private funds to acquire major properties held by Japanese funds, notably in downtown Tokyo¹². These cross-border capital inflows were driven by three factors: favorable macro-economic prospects and their positive implications for the office real estate market (low vacancy rates and increasing rents); the considerable development potential of the J-REITs; and the maximization of returns based on low Japanese interest rates.

Boosted by this massive inflow of foreign capital, prices on Tokyo’s property markets began to soar once again. In search of new properties to purchase in the central wards, J-REITs faced strong competition from private funds for the same sites. They tried to keep pace with the markets until their yields threatened to drop below three per cent. Meanwhile, private funds continued to invest in Tokyo properties as they faced no such constraints regarding yields and were strongly committed to investing the funds gathered from equity holders. The surge in property values soon gave rise to a ‘mini-boom’ in commercial land prices, although this was limited to the five central wards. Unlike the land bubble, this mini-boom spread neither to other wards nor to neighboring prefectures (figure 7).

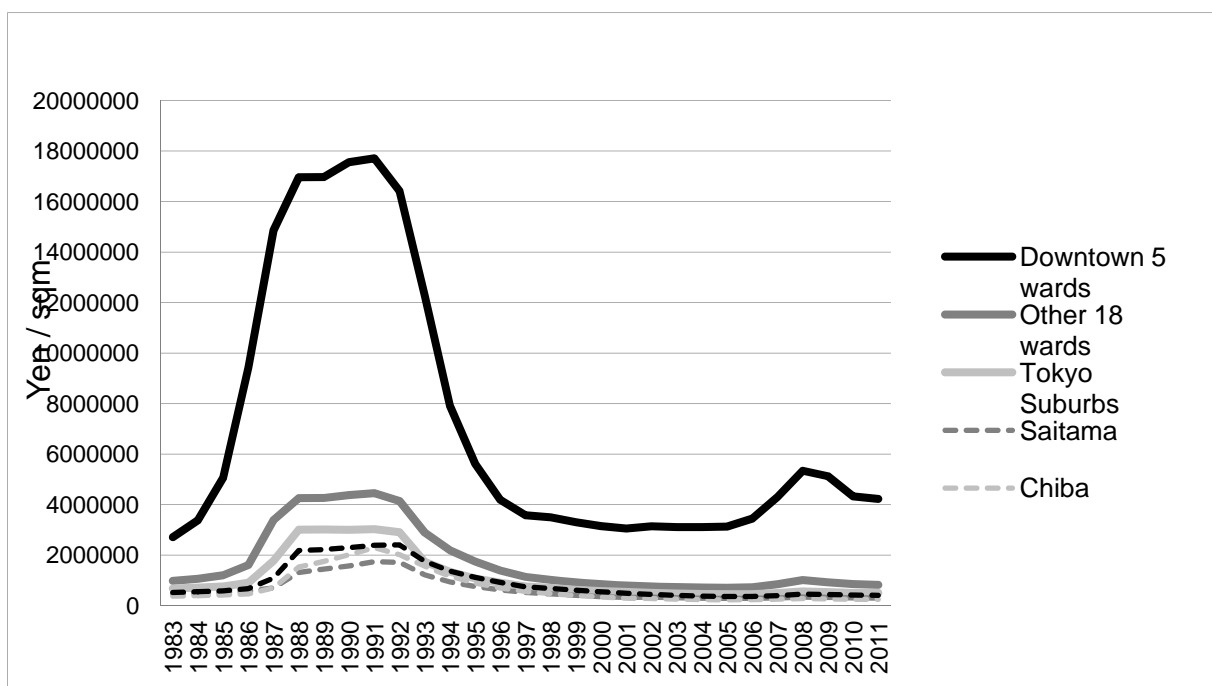
To counteract deteriorating yields, new REIT funds involving specific know-how were established to manage ‘operational assets’ such as hotel or retail facilities. Yet foreign funds continued to pour money into J-REITs until the outbreak of the subprime mortgage crisis which saw them retreat from Japanese securitized markets. The crisis severely impacted J-REITs, causing their asset capitalization value to plunge by 70% (from 6.8 to 2.1 trillion yen) despite the buoyant performances of Tokyo’s office real estate markets. This shock is evidence of the greater volatility of REIT markets relative to other components of the

¹² Loan Star bought the three towers of the Kokusai Akasaka Bldg in 2004; Morgan Stanley, the Shinagawa Grand Central Tower, the Daikyo Bldg and a chain of 13 ANA Hotels in 2006-2007; Da Vinci Advisers acquired the Pacific Century Marunouchi Bldg, the Toranomon Pastoral Hotel and the Shiba Park Bldg in 2007. However, the most conspicuous transaction was the purchase of the Tiffany Building in Ginza by Goldman Sachs in August 2007. This property was sold at auction for more than double the price paid four years earlier by the ‘Tiffany and Company Japan Inc.’ fund (i.e., 37 billion yen, compared to 16.5 billion).

property sector. The slightest movement spreading between segments of the stock market can have a disproportionate impact on this segment. The resulting drying-up of capital inflows impacted the entire real estate industry as J-REITs were no longer able to purchase buildings commissioned by private developers.

It is worth noting that the surge in land prices in the 2000s was caused by foreign capital inflows whereas in the case of the previous speculative ‘land bubble’, capital fled from Japan to foreign countries where it triggered boom-bust cycles. There is no doubt that securitization has significantly facilitated inflows of foreign investment into the seemingly inaccessible Japanese property markets.

Figure 7. Change in commercial land prices in the Tokyo Region (as of July 2011)



Source: compiled by H. Ai using *koji chika*.

Note: The five downtown wards are Chiyoda, Minato, Chuo, Shinjuku and Shibuya.

The role of J-REITs in land market dynamics in Tokyo: from the ‘bubble’ to the ‘mini-boom’

In order to examine the role of J-REITs in Tokyo land market dynamics we have conducted a multiple regression analysis on land markets in 1991 and 2008 (the peak years of the land boom periods), with particular attention to the spatial distribution of the securitization market. As mentioned below, the data set we used in the analysis tends to reflect the land markets with a short time lag: the data sets for 1991 and 2008 correspond to the peaks in land prices in 1989 for the ‘bubble’ and in 2007 for the ‘mini-boom’, respectively.

In terms of land price data, *koji-chika* (official land prices) have been used as the dependent variable. *Koji-chika* are appraised prices based on the ‘normal’ land price for fixed sites as of 1 January each year and do not correspond to actual transactions¹⁾. ‘Normal’ here refers to

prices free from any distortion, such as that due to hasty purchasing and selling, or excessively speculative behavior. Under this evaluation method, the appraised value tends to track actual land prices but with a time lag. The peak in land prices during the first 'bubble' is thought to have occurred in 1989; however, the peak in *koji-chika* can be seen in 1991. After the first bubble burst there was a perception that *koji-chika* were incapable of reflecting the actual land market situation and an amendment was made to the appraisal process. Although this may have enabled *koji-chika* to reflect market prices more closely, a short lag in trends remains. The peak of the 'mini land boom' can be seen in 2008.

Since *koji-chika* are not real transaction data, ideally we should use transaction price data in our analysis to discuss land price dynamics during and after the bubble. However, a sufficient quantity of actual land transaction data is seldom available because these data include personal information such as addresses, land plot area and detailed information regarding the buildings located on the plot.

Multiple regression analyses are designed to establish whether or not land pricing factors have changed over time and to discuss the relationship between J-REIT resource allocation and land prices.

We selected the logarithm of *koji-chika* as the dependent variable after checking some functional forms. The following independent variables are used in our analysis. Variable **LnFAR** is the natural logarithm of the maximum FAR permitted in the district in which the plot of land is located. FAR is expressed as a percentage and calculated by dividing the total floor area of the building by the area of the plot. The designated FAR will be a minimum of 50% and a maximum of 1,300%. Variables **J0250**, **J0500**, **J0750** and **J1000** are dummy variables indicating, respectively, whether the plot is located 0-250m, 250-500m, 500-750m or 750-1000m from J-REIT sites. Although J-REITs were established in 2001, long after 1991, we have still included variables **J0250**, **J0500**, **J0750** and **J1000** in the 1991 model. This allows us to analyze whether or not J-REIT investment allocations are linked to areas of high land prices. Variables **S0250**, **S0500**, **S0750** and **S1000** are dummy variables indicating, respectively, whether the plot is located 0-250m, 250-500m, 500-750m or 750-1000m from the nearest railway station. When determining the nearest stations for the 1991 dataset, we excluded railway stations that were not yet open at the time. Variables **Chiyoda**, **Chuo**, **Minato**, **Shinjuku** and **Shibuya**, named after Tokyo's five downtown wards, are dummy variables with a value of 1 if the land plot is located in the ward, and 0 if it is not. Variable **LnTokyoSta** is the natural logarithm of the time distance from the nearest station to Tokyo Station. The time distance is given in minutes by comparing the arrival time at Tokyo Station and the departure time from the nearest station to the land plot. We used the Yahoo! Rosen Joho website²⁾ which provides a railway route planner. The arrival time at Tokyo Station was set at 8:30am which falls during the morning rush hour. Railway stations and lines that opened after 1992 were excluded from the time distance calculation in the 1991 dataset. Figure 8 shows the basic statistics for the variables. These results are in line with lower investment by REIT funds in Tokyo's downtown property markets in the years 2005-2007. J-REITs were hit by a drop in yields that resulted from increasing real estate values and prevented them from expanding their portfolios at the same rate as previously. This situation may have altered the impact of REIT properties on commercial land values.

Figure 8. Basic Statistics of the Variables

Variables	Unit	1991				2008			
		N	Mean	Min.	Max.	N	Mean	Min.	Max.
Price	Yen	281	8,606,840	687,000	38,500,000	740	2,600,566	247,000	39,000,000
LnPrice	ln (Yen)	281	15.50779	13.44009	17.46617	740	14.12121	12.41714	17.47907
FAR	%	281	529.5374	300	1000	740	519.1892	200	1300
LnFAR	ln (%)	281	6.220981	5.703782	6.907755	740	6.194249	5.298317	7.17012
J0250	<i>dummy</i>	281	0.505338	0	1	740	0.05	0	1
J0500	<i>dummy</i>	281	0.213523	0	1	740	0.083784	0	1
J0750	<i>dummy</i>	281	0.099644	0	1	740	0.208108	0	1
J1000	<i>dummy</i>	281	0.064057	0	1	740	0.547297	0	1
S0250	<i>dummy</i>	281	0.597865	0	1	740	0.581081	0	1
S0500	<i>dummy</i>	281	0.238434	0	1	740	0.298649	0	1
S0750	<i>dummy</i>	281	0.099644	0	1	740	0.078378	0	1
S1000	<i>dummy</i>	281	0.035587	0	1	740	0.020270	0	1
Chiyoda	<i>dummy</i>	281	0.071174	0	1	740	0.089189	0	1
Chuo	<i>dummy</i>	281	0.071174	0	1	740	0.074324	0	1
Minato	<i>dummy</i>	281	0.060498	0	1	740	0.078378	0	1
Shinjuku	<i>dummy</i>	281	0.067616	0	1	740	0.075676	0	1
Shibuya	<i>dummy</i>	281	0.042705	0	1	740	0.048649	0	1
TokyoSta	Minutes	281	19.71886	2	43	740	19.46622	0	45
LnTokyoSta	ln (Minutes)	281	2.826642	0.693147	3.7612	740	2.798258	0	3.806662

Figure 9. Regression model for ln (*koji-chika*) in 1991

Variables	Partial Reg. Coeff.	SE	β	F-value	t-value	p-value	SL.
LnFAR	1.5201	0.1028	0.5050	218.5954	14.7850	0.0000	**
J0250	0.3241	0.0893	0.1657	13.1588	3.6275	0.0003	**
J0500	0.1889	0.0906	0.0792	4.3465	2.0848	0.0380	*
J0750	0.0715	0.1014	0.0219	0.4978	0.7055	0.4811	
J1000	0.0875	0.1156	0.0219	0.5723	0.7565	0.4500	
S0250	0.3129	0.1465	0.1569	4.5594	2.1353	0.0337	*
S0500	0.1545	0.1517	0.0673	1.0367	1.0182	0.3095	
S0750	0.0574	0.1605	0.0176	0.1281	0.3579	0.7207	
S1000	-0.2200	0.1895	-0.0417	1.3484	-1.1612	0.2466	
Chiyoda	0.6259	0.1157	0.1646	29.2797	5.4111	0.0000	**
Chuo	0.6630	0.1180	0.1744	31.5729	5.6190	0.0000	**
Minato	0.8309	0.1099	0.2026	57.1499	7.5598	0.0000	**
Shinjuku	0.7007	0.1003	0.1799	48.7882	6.9849	0.0000	**
Shibuya	0.9258	0.1230	0.1915	56.6694	7.5279	0.0000	**
LnTokyoSta	-0.1529	0.0664	-0.0968	5.3034	-2.3029	0.0221	*
Constant term	5.8161	0.7239		64.5565	8.0347	0.0000	**

N=281, R²=0.9165

Figure 10. Regression model for ln (*koji-chika*) in 2008

Variables	Partial Reg. Coeff.	SE	β	F-value	t-value	p-value	SL.
LnFAR	1.4235	0.0802	0.4957	314.7232	17.7404	0.0000	**
J0250	0.1805	0.1060	0.0401	2.8974	1.7022	0.0892	
J0500	0.0876	0.0906	0.0247	0.9364	0.9677	0.3335	
J0750	0.1653	0.0769	0.0683	4.6227	2.1501	0.0319	*
J1000	0.1615	0.0756	0.0819	4.5669	2.1370	0.0329	*
S0250	0.4701	0.1389	0.2362	11.4603	3.3853	0.0007	**
S0500	0.2017	0.1409	0.0940	2.0509	1.4321	0.1526	
S0750	0.2807	0.1515	0.0768	3.4309	1.8523	0.0644	
S1000	0.1626	0.1920	0.0233	0.7169	0.8467	0.3975	
Chiyoda	0.5746	0.0915	0.1668	39.4634	6.2820	0.0000	**
Chuo	0.5160	0.0906	0.1378	32.3994	5.6920	0.0000	**
Minato	0.9070	0.0829	0.2483	119.7967	10.9452	0.0000	**
Shinjuku	0.5666	0.0793	0.1526	51.0758	7.1467	0.0000	**
Shibuya	1.1904	0.0966	0.2608	151.8803	12.3240	0.0000	**
LnTokyoSta	-0.1092	0.0493	-0.0740	4.9019	-2.2140	0.0271	*
Constant term	4.8498	0.5784		70.2996	8.3845	0.0000	**

n=740, $R^2=0.8396$

Tables 3 and 4 show the results of the multiple regression analyses conducted for 1991 and 2008. Railway stations were found to have been an important factor in pushing up land prices. **S0250** in particular had a significant positive impact on land prices in both the 1991 and 2008 models. As expected, **LnTokyoSta** shows a negative impact on land price; i.e., land prices drop if the nearest station to the plot is far from Tokyo Station, the main station in the CBD. These results confirm the general trend of higher land prices when the plot is closer to a railway station and downtown Tokyo. Variables **LnFAR**, **Chiyoda**, **Chuo**, **Minato**, **Shinjuku** and **Shibuya** have a major positive impact on land prices in both models. This suggests that in both 2008 and 1991, land prices tend to be higher if the plot is located in a high FAR district or in the five downtown wards. In 1991, all of the five wards can be seen to have a significant impact on land price, whereas in 2008, the regression coefficient β of Minato and Shibuya rose, while that of the three remaining wards declined. This difference suggests greater intensity in these two wards around 2008. Presumably, redevelopment projects such as Tokyo Midtown, Shinagawa Intercity, Shinagawa Grand Commons and Shiodome Sio-site in Minato Ward, and Shibuya Mark City, Cerulean Tower and Omotesando Hills in Shibuya Ward may have significantly boosted land prices. The majority of these projects transformed large plots of residential, industrial, railway and military land near railway stations into retail and office complexes.

In 1991, J-REIT sites displayed a significant positive correlation with land prices for **J0250**. This was the most significant positive factor among J-REIT distance dummy variables, followed by **J0500**. However, **J0750** and **J1000** were significant positive factors in 2008, meaning that land prices in 2008 were higher if the plot was located between 500m and 1000m from J-REIT sites. These results suggest that J-REIT investments have mainly targeted areas where land prices increased during the first bubble or those where land prices remained relatively high after the bubble burst. This is in line with Yabe's (2008) assertion that the areas which benefitted from J-REIT investment are limited to business districts, most of which are located in the five downtown wards. However, as previously mentioned, certain

redevelopment projects in downtown Tokyo have recently transformed non-commercial land into retail and office complexes. This trend may be not visible in Yabe (2008) because the dataset used in his paper predates 2005. Our 2008 model suggests that the aforementioned projects have developed new commercial hubs and that land price increases in these areas seem to have weakened the correlation between land prices and location of J-REIT sites.

Conclusion

We have given an account in this paper of the significant role played by real estate securitization in the recovery of property markets and the subsequent cleansing of bad debts. By providing alternative funding resources for urban development, real estate securitization helped to unfreeze property markets and to prevent further deterioration in the collateral values that underpin the entire banking system. Securitization also provided a timely solution that enabled the corporate sector to get large idle landholdings off their balance sheets. Offloading cumbersome land assets enabled corporations to focus on their core businesses and recover more rapidly.

Securitization also strongly impacted the methods and behavior of real estate players. It introduced new appraisal standards and methods based on Anglo-Saxon approaches. The old comparison method was replaced by the more sophisticated DCF technique. New players have emerged and financial criteria now predominate in the decision-making processes of property investors. Furthermore, full information disclosure regarding the portfolios and performances of J-REIT funds enables small investors to gather sufficient knowledge for their investments. By focusing on profitability rather than capital gains, securitized core funds have conferred a new status on real estate to the extent that land is no longer viewed as a property's sole component of value.

Although financial methods and analysis techniques may have become standard in Japanese property markets, this is not to say that Anglo-Saxon approaches have gained full acceptance in Japan. J-REIT funds, which embody the highest form of convergence between finance and real estate, are far from being merely financial vehicles. Dominated by the major domestic industrial and financial conglomerates, these funds are used as a means of maintaining control over the most prestigious sites in Central Tokyo. In this sense they serve the rent-seeking strategies of the big groups, just as in the pre-bubble days (when the 'land myth' still held sway). The prestigious J-REIT office portfolios managed by conglomerates are also instrumental in satisfying the evolving needs of the big firms – their major clients – and providing them with a continuous supply of state-of-the-art buildings equipped with cutting-edge IT systems. Moreover, although J-REIT markets are undoubtedly well served by up-to-date and comprehensive data, this is not the case for private funds, which are greater in number than the J-REITs and with a cumulative asset value that is more than twice as high. Not to mention the other segments of the real estate market for which information disclosure has not improved.

Nevertheless, the use of financial techniques has had a significant impact on the strategies of asset managers in terms of the spatial distribution of J-REIT portfolios. Strong emphasis is placed on the Tokyo region and this trend has intensified in the wake of the subprime mortgage crisis. Although other large Japanese cities have a sizable regional GDP – Osaka's equals that of a European country like Portugal –, the Tokyo Metropolitan Region would appear to be the only promising place for an investment. Within this region, J-REIT office and

retail real estate investments are mostly concentrated within the Yamanote loop line.

Has real estate securitization altered the dynamics of land markets? Looking at the changes in commercial land values in the Tokyo region over the past three decades, we have highlighted a difference between the two land booms: the 1980s bubble spread from Tokyo's CBD (five central wards) into peripheral areas and neighboring prefectures, whereas the 2005-2007 land boom was confined to the five central wards. The results of our multi-regression analysis indicate that while J-REITs may have influenced land values in the early 2000s, their impact weakened subsequently. This is consistent with the fact that J-REIT funds reduced their investment levels during the 'mini land boom' in order to prevent an excessive drop in yields. However, real estate securitization may have played a determining role in the surge in land values between 2005 and 2007 given the primary role of securitized private funds as vehicles for foreign investment over this period.

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