The Development of REIT Markets and Real Estate Appraisal in Taiwan

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Abstract

This study introduces the development of real estate appraisal and investment securitization in Taiwan, and then explores the appropriate appraisal approaches and relative significant characteristics during the process of real estate securitization. Questionnaires were distributed to real estate appraisal experts, including certified appraisers and researchers in Taiwan. Results show that the income approach is the first priority for appraisal during the process of real estate securitization, followed by the sales comparison approach and then the cost approach. As for impact factors, location, tenants, growth prospects, and property markets are the four main criteria influencing capitalization rates on which most appraisal professionals will focus in Australia, U.S., Canada, U.K., and Taiwan. The findings may enable practitioners and researchers in the international appraisal field to establish uniform valuation standards, especially for real estate securitization.

In Taiwan, the Real Estate Securitization Statute was promulgated in 2003. With the introduction of this new mechanism, real estate can be transacted in the form of securities, which in turn can increase its liquidity. With the passage of the Ordinance of Real Estate Appraisal Techniques in 2001 and the Financial Asset Securitization Statute in 2002, real estate- and mortgage-related industries in Taiwan grew eager to apply the securitization mechanism for raising funds to liquidate real estate investments. Therefore, the appraised value and the technique employed in the process of securitization for initial public offering (IPO) have become the focus of government, appraisers, CPAs, lawyers, and investors.

The value of real estate can be assessed through several approaches according to its function or uses. Different approaches often generate different results, among which the income capitalization approach especially requires profound expertise in both the finance and real estate fields. Securitization per se is a process of accounting calculation, financial projection, and fund raising. The combination of real estate appraisal and securitization has thus become a fairly complicated task, with the further issue of agency problem to public investors. In this process, information disclosure is critical to the results of valuation. On the one hand, the vacancy rate, rental income, transaction price, and related regulation require appraisers in the local area to finalize the assessed value. On the other hand, financial structure, investment decision, corporate governance, dividend policy, risk valuation, and market forecast require an expertise in financial and capital markets (Corgel, McIntosh, and Ott, 1995). Therefore, to become eligible to appraise income-producing property, especially for

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real estate securitization, appraisers should be equipped with expertise in both financial markets and the domain of real estate. In other words, real estate appraisers should eventually turn into real estate financial analysts in undertaking real estate securitization.

Real estate is essentially a very ''local'' product that requires domestic appraisal professionals to determine the accurate assessed value. Besides the aforementioned issues regarding the transformation from physical assets to financial instruments in real estate securitization, international real estate appraisal has also become another complicated subject due to information disclosure and transparency, consumers' habits, local investors' interests, taxation, and other legal issues. Parker (1996) thus attempted to identify the main valuation methods adopted internationally, and the relative importance affecting the capitalization rate. Dorchester and Vella (2000) also addressed the demands arising from the globalization of real estate activities and the importance of the development of the international valuation standards. It is obvious that real estate appraisal has turned into an international financial analysis from the traditional comparison of local physical assets, especially following securitization.

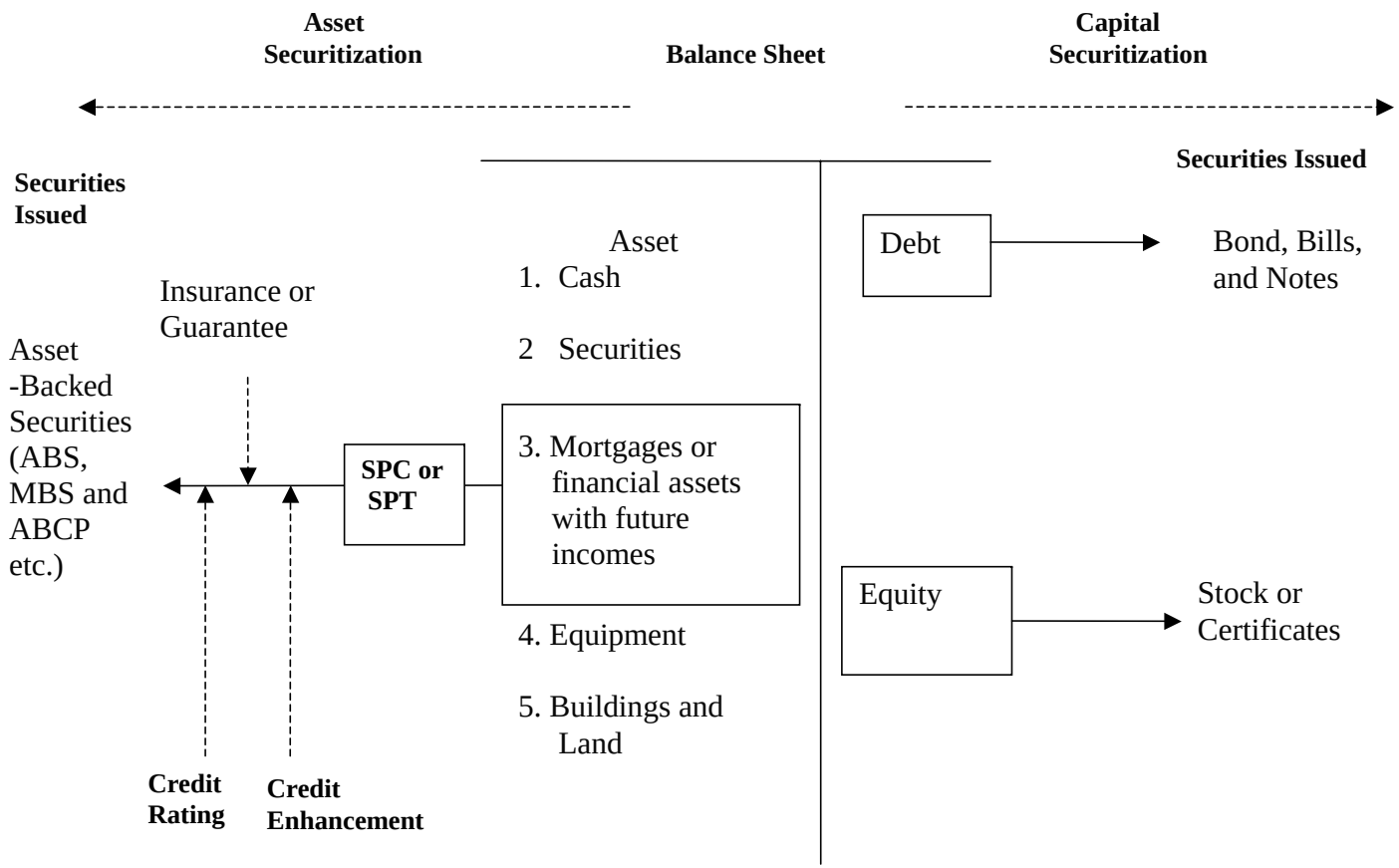
The broad definition of real estate-related securitization can be divided into equity and asset (mortgage) sides (Exhibit 1). The securitization of real estate on the equity side, often known as a real estate investment trust (REIT), involves the split of equity ownership, and the prices of the certificates or stock depend on the operating performance, the appreciation of the final reversion value, and the overall economic condition. The asset-side securitization of the real estate mainly focuses on the increase of the liquidity of future income or accounts receivable, such as mortgages, rental income, or other receivables. The price of the asset-side securities, often known as asset-backed securities (ABS) or mortgage-backed securities (MBS), is reversely affected by the market interest rates due to being a fixed-income stream by nature. This paper focuses on the equity side.

In light of the complex issues discussed regarding appraisal and financial analysis, the purpose of this study is to introduce the development of REIT markets and explore the appropriate techniques in the appraisal and securitization process in Taiwan, and propose an international comparison regarding appraisal approaches and relative important factors influencing capitalization rates. The rest of this paper is organized as follows: the next section reviews the appraisal techniques and discusses the importance of evaluating income-producing properties and REITs. The third section introduces the macro economy, real estate, and REIT markets in Taiwan. The fourth section briefly describes the analytic hierarchy process employed in this study. The last section provides an analysis of the questionnaires and prioritizes the valuation approaches and contributing factors in Taiwan, and concludes with an international comparison.

Review on Real Estate Securitization and Appraisal Techniques

Real estate per se is an asset for valuation difficulty. Introducing real estate for securitization to the public involves another set of financial analyses and legal

Exhibit 1
Types of Securitization



processes—real estate appraisal, law, and financial analysis. Unfortunately, there is a paucity of research that discusses these two subjects in tandem. This section briefly reviews the characteristics of various appraisal approaches and stresses the importance in valuing income-producing properties in real estate securitization.

Real estate appraisal techniques can usually be divided into cost, sales comparison, and income approaches. The *sales comparison* approach uses similar properties as the basis for evaluation. The merits of this approach include its ability to reflect the property's market value, and its relative simplicity. The drawbacks are that the appraised value may be inflated during periods of a bubble economy, and the adjustments are sometimes subjective. Kummerow (1997) indicated that the sales comparison approach may misrepresent long-term value where there are speculative bubbles and temporary crashes. Tsukamoto (1999) examined the experience in Japan where the bubble economy in the late 1980s was largely caused by the inability of Japanese appraisers and investors to properly estimate real estate value. Furthermore, the banks in Japan would lend 120% of the market value for the purchase of real property. The result was the long-term economic recession after the bubble burst.

The *cost approach* applies the reconstruction or replacement costs and the deduction of depreciation as the basis for valuation. Objectivity is the well-recognized advantage of this method. The major drawback is that this approach lacks market value and profit consideration. The appraised value through this approach thus often deviates from market value.

The *income approach* discounts all the future net income to present value. It reflects the fundamental value of the property according to the revenues and costs; therefore, this method focuses on the estimation of the income stream and the discount rate. The income approach consists of two routes: direct and yield capitalization. Income-producing properties are the major investment objects for REITs, so the income approach seems to be the most appropriate method for REIT valuation.

In comparison, the *direct capitalization* approach is less dynamic since it only takes into account a one-year income scenario. On the contrary, the discounted cash flow (DCF) approach considers all the income during the operation period and the final reversion, which is believed to be able to rectify the drawback of direct capitalization.

Parker (1996) conducted a survey on the appraisal techniques in income-producing properties to practitioners in the United States, United Kingdom, Canada, and Australia. The results show that practitioners in these four countries responded that the income approach should be the first priority. Further, the DCF approach should be primarily employed in the income approach, and then the direct capitalization approach, unless the stable income in the future can be projected. Mengden and Hartzell (1986) showed that there is a high correlation between the net income and the dividend return of REITs, implying that the income approach might be suitable for appraising REITs. DeWeese (1998) indicated that some Wall Street analysts also apply the direct capitalization approach to determine the net asset value (NAV).

Gorlow, Parr, and Taylor (1993) indicated that the final reversion value should be estimated through the construction costs of the comparable project. The cost approach can assess the construction value; however, the accurate determination of land value of the final period still requires market or revenue information for evaluation. Hirota (1999) stressed that the income approach should put more weight on the operating income than on the final reversion. Optimistic market comparison valuation should be avoided to prevent the occurrence of the bubble-burst experience in Japan in the late 1980s.

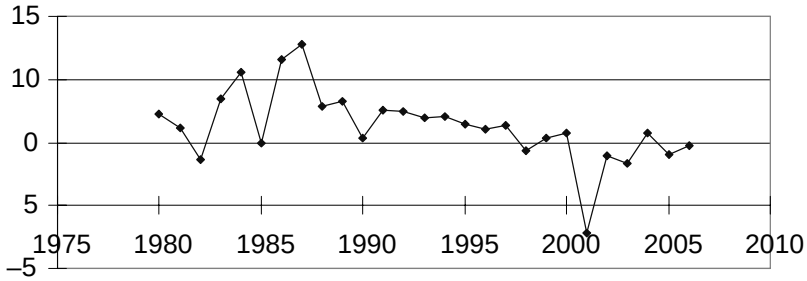
Most of the literature reviewed above shows the importance of selecting the appropriate appraisal methods, especially for income-producing properties. However, scientific analysis was rarely conducted or empirically tested to determine the appropriate appraisal approach and related impact factors. After the enactment of the ''Real Estate Securitization Statute'' in 2003 and introduction of several cases to the markets in Taiwan since 2005, the techniques in real estate appraisal and related factors affecting the valuation for securitization have become the focus of practitioners in the appraisal and financial fields. This study thus intends to investigate the opinion of experts in the appraisal field in Taiwan through questionnaires, and then compare the results with international experiences.

The Economy and Real Estate Markets in Taiwan

The Economy

For the past thirty years, Taiwan has experienced impressive economic growth. The export-oriented industry led Taiwan to a double-digit economy growth in the mid 1980s, and prompted Taiwan, together with South Korea, Hong Kong, and Singapore, to be known as the renowned Newly-Industrialized Countries (NICs), or the Four Dragons. International societies called this success Taiwan's ''Economic Miracle.'' Exhibit 2 shows economic growth in Taiwan for the past three decades. This accelerated growth during the 1980s drove the dramatic appreciation of currency (New Taiwan Dollar, NTD), stock, and real estate prices in Taiwan. For example, the

Exhibit 2
The Economy Growth (%) in Taiwan, 1980–2006



The source is the Council of Economy Development, Taiwan (2006).

exchange rate rose from 1USD for 38NTD in 1985 to 26.5NTD in 1995, an appreciation of over 40% in ten years. The composite index stock markets rose sixfold from around 2,000 to 12,000 points, and the real estate price grew threefold in the late 1980s. The escalation of asset prices in Taiwan in the late 1980s indicated the close relationship between a macro economy and its currency, stock, and real estate markets (Lin, 1993).

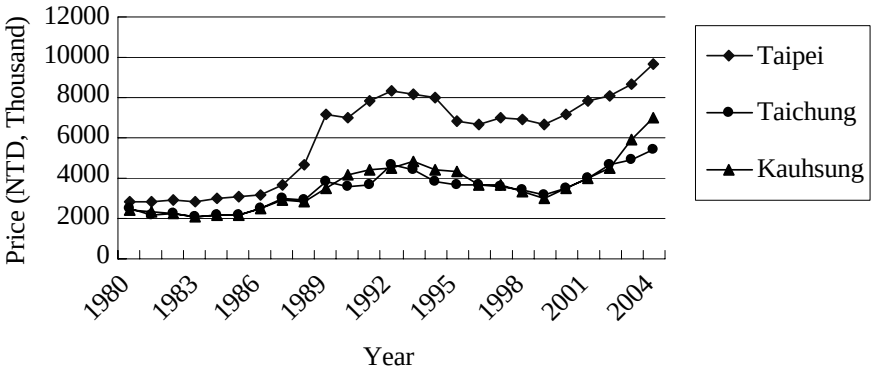
In the early 1990s, the growth of Taiwan's economy was affected by the inflation of asset prices. After the implementation of the ''open-door policy,'' China has attracted a tremendous amount of investment from the world since the 1980s. Together with the increased land and labor costs in Taiwan and the investment movement leaning toward China, Taiwan's economic growth tended to slowdown to around 7% in the mid 1990s. In 1997, financial crisis severely hit many Asian countries, such as Thailand, Indonesia, the Philippines, Malaysia, and South Korea, causing the currencies and stock indices of these countries to depreciate at least over 30% and 40%, respectively. Taiwan was slightly affected, partly due to the accumulation of the third highest foreign reserve in the world (next to Japan and China) versus very little debt, and partly due to the continual positive current accounts for the past twenty years.

In the late 1990s and into early 2002, the world's economy was caught in a downturn of deflation. This was partly due to the attractive investment opportunity in China. Together with the attack of SARS, the economic growth in Taiwan dropped to −2% in 2002 for the first time in thirty years. Afterwards, Taiwan's economy tended to retain a stable growth rate of around 3%–4%. Since 2002, Taiwan has successfully focused its principal industry on electronics exports, despite the turmoil caused by the political situation. It is worth noting that the economic dependency between Taiwan and China has been dramatically increasing despite the unsolved political dispute between these two governments.

The Real Estate Markets

As in most other countries, the property market in Taiwan is significantly affected by a macro economy. The major growth of the real estate markets in Taiwan occurred in the mid 1980s in accordance with the appreciation of stock and currency. Exhibit 3 shows the trend of the real estate markets in the three largest cities in Taiwan (Taipei, Kaohsung, and Taichung) for the past twenty-five years. Taipei is the largest city in Taiwan with a population of over 2.6 million. Being the business and political center in Taiwan, the average real estate prices in Taipei are more than double than those of Kaohsung and Taichung. Further, the price fluctuation of real estate in Taipei also tends to be narrower than these two cities, especially during the economic downturn in the late 1990s. Many foreign banks started to pull out of the mortgage business in Kaohsung and Taichung in the mid 1990s according to the prediction of a declining macro economy. After the worst conditions of negative economic growth and the SARS event in 2002, the real estate markets in Taiwan started to recover. The price stability of the real estate market is the major reason that most object properties for REIT IPOs in Taiwan are located in Taipei.

Exhibit 3
The Real Estate Markets in Three Large Cities in Taiwan, 1980–2004



The source is Taiwan Real Estate Information Center (2006).

The Development and Characteristics of REIT Markets in Taiwan

The Development of Real Estate Securitization

After decades of discussion and legislation, Taiwan eventually promulgated a series of legislative acts regarding real estate markets. The ''Law of Real Estate Appraisers'' was enacted in 2000, followed by the ''Ordinance of Real Estate Appraisal Techniques'' in 2001, the ''Financial Asset Securitization Statute'' in 2002, and the ''Real Estate Securitization Statute'' in 2003. These acts eventually integrated the real estate and financial markets in Taiwan, and provided precise ordinances governing appraisal and securitization of real estate, mortgages, and other financial assets with stable incomes (e.g., rents). The real estate securitization market in Taiwan has thus been launched since the passage of these acts.

Taiwan provides two types of vehicles for real estate securitization: real estate investment trusts (T-REITs) and real estate asset trusts (T-REATs). T-REITs are similar to REITs in other countries, involving raising funds first and then acquiring real estate objectives. However, Taiwan only allows the operation type of investment trust (special-purpose trust, SPT) instead of the investment corporation type (special-purpose corporation, SPC). There is no specific investment period for T-REITs. A T-REAT is established to hold defined real estate for specific periods first and then to raise funds in exchange for the specific properties. Rental and other incomes, and the capital gains, generated from the object properties will be distributed to investors during the holding periods and after sale, respectively. Both T-REITs and T-REATs are only allowed to operate as closed-end funds, and at least 75% of the funds must invest in cash, existing properties, or related rights that generate steady income, ABSs, bank deposits and acceptance, short-term commercial papers, and Treasury bonds. Real estate development activities, although under discussion, are still prohibited for both the portfolio of T-REITs and T-REATs. The only exception for real estate development for securitization is the urban renewal development under the revised

Urban Renewal Acts in 2005; however, there has not been a successful renewal case for securitization so far due to the complications in negotiation with property owners.

The Current REIT Markets

After the enactment of the ''Real Estate Securitization Statute'' in 2003, Taiwan introduced the first case of securitization to the public market in early 2005. The first T-REIT, FuBon REIT #1, was introduced to the market by the FuBon Group in March, 2005. The initial target properties were three office buildings with a 100% occupancy rate located in Taipei city. The issuance scale accounted for NT$5.83 billion, and then increased to NT$8.09 billion with the addition of one retail center in Taipei.[1] This first T-REIT successfully attracted market interests for investment, with a fivefold oversubscription amount of the fund scale. According to FuBon Group, there are 60% individual investors in the breakdown of FuBon REIT #1 ownership, indicating the intention of investment diversification of real estate securitization in Taiwan.[2] Following FuBon REIT #1, more REITs from various groups entered into the application process for issuance. Object properties are mainly located in Taipei city, including office, retail, hotels and warehouse distribution centers. As shown in Exhibit 4, the total volume IPOs for T-REITs reached NT$54 billion by September 2006,

Exhibit 4
Markets of Real Estate Securitization in Taiwan
(by September 2006)

Name of REIT	Object Property (Location)	Long Term Credit Rating[a]	Date Issued	Scale (NT$ billion)
FuBon REIT #1	3 offices and 1 retail (Taipei)	twA+, twA−1	March & July, 2005	8.09
Cathay REIT #1	2 offices and 1 hotel (Taipei)	twA−	September, 2005	13.93
FuBon REIT #2	3 offices (Taipei)	twA−	October, 2005	7.30
Shin Kong REIT #1	3 offices (Taipei), 1 retail (Tainan)	twAA	November, 2005	11.30
San-Ding REIT	1 office (Taipei), 1 retail (Taipei), 1 warehouse (near Tao Yuan international airport)	twA−	July, 2006	3.85
KeeTai Star REIT	1 office and 1 office/ hotel (Taipei)	twBBB+	August, 2006	2.47
Cathay REIT #2	3 offices (Taipei)	twA	September, 2006	7.00
Total Volume				54

Notes: 1 USD = 32.5 NTD in 2005–2006.
[a]By Taiwan Rating Corporation.

indicating the popularity of this new mechanism to both investors and issuers in Taiwan. Taipei 101, the highest skyscraper in the world, is longing to go for securitization after its occupancy rate reaches over 85% (Economic Daily News, 2006).

Property Valuation for T-REITs

The object properties for securitization in Taiwan are required to undergo a strict appraisal process. At least two independent certified appraisers are required for valuation when the value of the property is worth more than NT$300 million, and the difference between these two appraised prices should not exceed 20%.[3] Aside from two appraisers, one independent appraisal expert (certified appraisers or accountants) is required to give objective comments on the appraisal reports and appraised value. Prior to the IPO of a T-REIT, the appraisal reports and experts' comments have to be approved by a valuation committee organized by the Department of Interior Affairs and the Financial Supervision Commission (FSC).[4] The board members consist mostly of university professors with expertise in real estate, appraisal, finance, and land economics. In early 2006, there was one REIT applying for IPO in Taiwan; this was not approved due to an over-appraised value of NT$1 billion considered by the board. The stringent appraisal process shows the objective for investor protection provided by the Taiwanese government, due to several previously failed cases regarding real estate securitization in the 1980s in Taiwan.[5]

In July 2006, the FSC imposed several regulations regarding appraisal in ''The REIT Management Guidelines'' (or the ''Guidelines'') for T-REITs. Appraisers for T-REITs should be replaced every three years, and the same appraiser is not permitted to serve for the same REIT within one year after the leave. Due to the long process of the valuation meeting (usually over half a year), the Guidelines allow the application for a T-REIT IPO to shorten the supervision procedure (to less than three months) if the following requirements are met:

1. Single tenant's occupancy does not exceed 40%.
2. The average occupancy rate of the object properties in three years is over 85%.
3. If originators and related parties are tenants of the object properties, the rent rate should be assessed by certified appraisers.
4. If the object properties include land investment and the ownership is less than 100%, the risk management mechanism should be specified.
5. There should be appropriate geographic distance between object properties (for diversification).
6. The proportion of each parcel of the original object properties should not exceed 45%. Exceptions are made for specific mechanism of risk management.
7. Illegal (against building codes and with title conflicts) and physically unsecured buildings are not eligible for investment.

Other Regulations

The REIT Management Guidelines also set up several regulations on the financial structure, dividend payout policies, and other guidelines. Some important bylaws are selected for discussion as follows.

1. The ceiling for financial leverage is 35% for REITs with a twA credit rating. If the credit is rated as twAA by two rating companies, the leverage ratio can be raised to 50%. The same rating should remain after the leverage.
2. The issuance for T-REITs in the future should not be named after the originator group for the sake of independency.
3. Originators' holding ratio should not exceed 20%.
4. The scale of the property purchase plan for IPO should exceed $NT 3 billion.
5. No extra performance bonus for REIT management is allowed.
6. At least 90% of distributable dividends should be paid out. The purpose for the retained portion should be specified.
7. If there is substantial change in the appraised value of the object properties and the REIT prices may be affected, the information should be declared by the month of the value change.

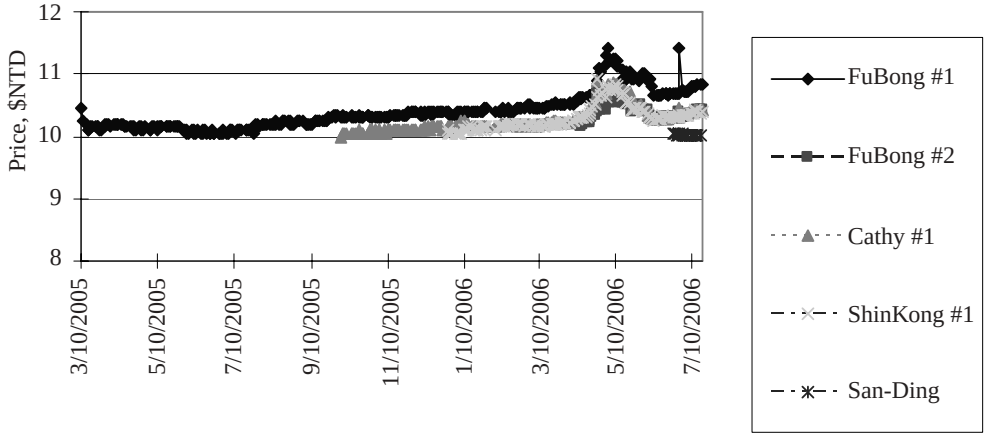
The original purpose for the Guidelines is to speed up the supervision process for T-REITs. Real estate professionals, however, criticize such requirements for these stringent bylaws since they may reduce the applicability of the Guidelines.

The tax benefits are another incentive T-REITs use to attract individual investors. Dividends paid out are not taxed at the trustee level, and they are only subject to a 6% withholding tax for individuals. As compared to 40%, the highest bracket for individual income tax in Taiwan, the tax-saving benefit to investing in T-REITs is one obvious reason to successfully attract individual investors.

The Price Movement of T-REITs

As compared to REITs in other countries, the price movement for T-REITs tends to be less volatile. For example, the highest and lowest price of Fu-Bong REIT #1 from March 2005 to August 2006 are NT$11.43 and NT$10.1, respectively, and the standard deviation for annual return is 2.1%. By July 2006, the market prices for all the T-REITs have never fallen below the face value of NT$10, as shown in Exhibit 5.[6] The price movement and the fluctuation of T-REITs may indicate that most investors take REITs as long-term investment vehicles. It may also show that the market prices of T-REITs are subject to the periodically appraised net asset value (NAV) and the limited transparent dividend policy. Real estate professionals that participated in the study discussed in this paper indicated that the low return and volatility may reflect the limitation to offshore investment of T-REITs for diversification purposes, which is subsequently reflected in the low transaction volume and turnover rates.

Exhibit 5
Price Movement of REITs in Taiwan



The source is the *Taiwan Economy Journal* (2006).

Research Method

The process of decision making often involves the comparison of quantifiable and intangible criteria. Without a scientific measurement, the decision may become subjective. Saaty (1980, 1990) proposed that the Analytic Hierarchy Process (AHP) is a multi-criteria decision-making approach in which factors are arranged in a hierarchic structure. The AHP approach not only provides an overall view of the complex relationships, but assists decision makers with assessing whether the criteria in each level are of the same order of magnitude for comparative purposes. Vargas (1990) also stated that AHP can be applied in two phases. The first is the hierarchic design, which requires experience and knowledge of the problem area. The second phase is evaluation, which is based on the concept of paired comparison.

Numerous studies have applied the AHP approach in the complicated decision-making process in various industries. For example, Arrington, Hillison, and Jensen (1984) employed the AHP to determine auditors' preferences. The authors concluded that is an operable method for investigating the role of qualitative attributes in audit judgment settings. Iwasaki and Tone (1998) constructed an AHP model for the analysis of the administration investigation and criminal inspection of public sector decision making in Japan. They found that the probability of finding incorrect declarations was significantly improved.

Kamal (2001) utilized the AHP to prioritize the prequalification criteria and to select the best contractor for project management. Byun (2001) also explored the use of AHP for car purchasing decisions in Korea through the pair-wise comparison of various criteria. He concluded that AHP is an appropriate method for selecting the best car model for both consumers and manufacturers. Ghodsypour and O'Brien

(1998) also employed the AHP method in selecting a supplier, and concluded that the best suppliers can be chosen, the optimum order quantities can be placed, and the optimum of the purchasing value can be obtained using the AHP method.

AHP has also been widely employed in the decision-making research in the real estate field. Saaty and Niemira (2006) gave an example of the decision-making process on retailer site selection. Business and government applications of AHP include companies like British Airways, Xerox, and Ford Motor Company for various decision-making purposes. Kauko (2006) also employed the AHP to determine the attractiveness of cross-country housing markets in Helsinki, Finland and Randstad, Holland. For multi-criteria decision making, Beynon, Cosker, and Marshall (2001) combined AHP with Dempster-Shafer (DS) Theory to identify residential properties to visit for real estate broker firms. Ho, Ong, and Sing (2006) also adopted strategic asset allocation (SAA) with AHP in an international real estate investment strategy. They found that the SAA-AHP model is reliant on an ex ante assessment of alternative asset allocation strategies, based on expert judgment of the macroeconomic environment and the Asian office markets.

Real estate appraisal is essentially a complicated decision-making process. It involves the selection of different approaches according to the uses of the property. Each approach contains different quantifiable (e.g., income) or intangible (e.g., location) factors that may significantly affect the resulting valuation. For example, it is difficult to quantify the adjustments in the sales comparison approach, and they have always been criticized as subjective. For income-producing properties, the income capitalization method is frequently employed for valuation, but the valuation results often deviate from the market prices. Further, the assessment of the capitalization rate, although quantifiable, always has a tremendous impact on the appraised value, and consequently becomes the focus of appraisers, banks, and real estate investors. In order to prioritize the appraisal approaches and the subsequent impact factors, the study discussed here employs the AHP method to improve the subjectivity of the traditional appraisal system, especially for real estate securitization.

Application for AHP

The AHP methodology consists of several levels, including problem formation, proposal of alternatives, and then pair-wise comparison. Several criteria should be provided for the selection of alternatives. The decision can be made by selecting the alternative with the greatest weights given to the AHP analysis. Furthermore, not only the best choice can be found, but the second and third alternatives can be sorted by importance.

Parker (1996) investigated real estate practitioners' viewpoints towards the priority of appraisal approaches and analyzed the impact factors on capitalization rates for income-producing properties in the U.S., U.K., Canada, and Australia. This paper follows Parker's (1996) research to explore similar questions to the appraisal professionals and researchers in Taiwan for comparison. One hundred questionnaires were sent out to eighty certified appraisers and twenty professors in the field of real

estate appraisal and finance in Taiwan in May 2005; seventy-seven were determined to be valid.

In the cross comparison of AHP, the number of criteria for comparison should not be more than eight, since the significance level will be reduced if there are too many elements. Besides the comparison of the three major appraisal approaches, this study summarizes eight impact factors according to Parker (1996) and appraisal professionals' experiences in Taiwan. Factors affecting the appraisal of income-producing properties are listed as questions for pair-wise comparison and weight calculation. They are briefly explained as follows:

1. State of property market: supply and demand of office property, market stability, etc.;
2. Location: position, situation, transportation, etc.;
3. Economic situation: overall macro and regional economic index, including costs of capital, economic growth, taxation, etc.;
4. Holding period: lease structure, likelihood for renewal, etc.;
5. Growth prospects: potential growth in rental income, operating income, or capital appreciation, etc., indicating the timing of investment;
6. Expense ratio: management fee, power expenses ratio, etc.;
7. Tenant: the image and scale of the tenants, etc.; and
8. Income stability: stability of income stream, default rate, vacancy rate, etc.

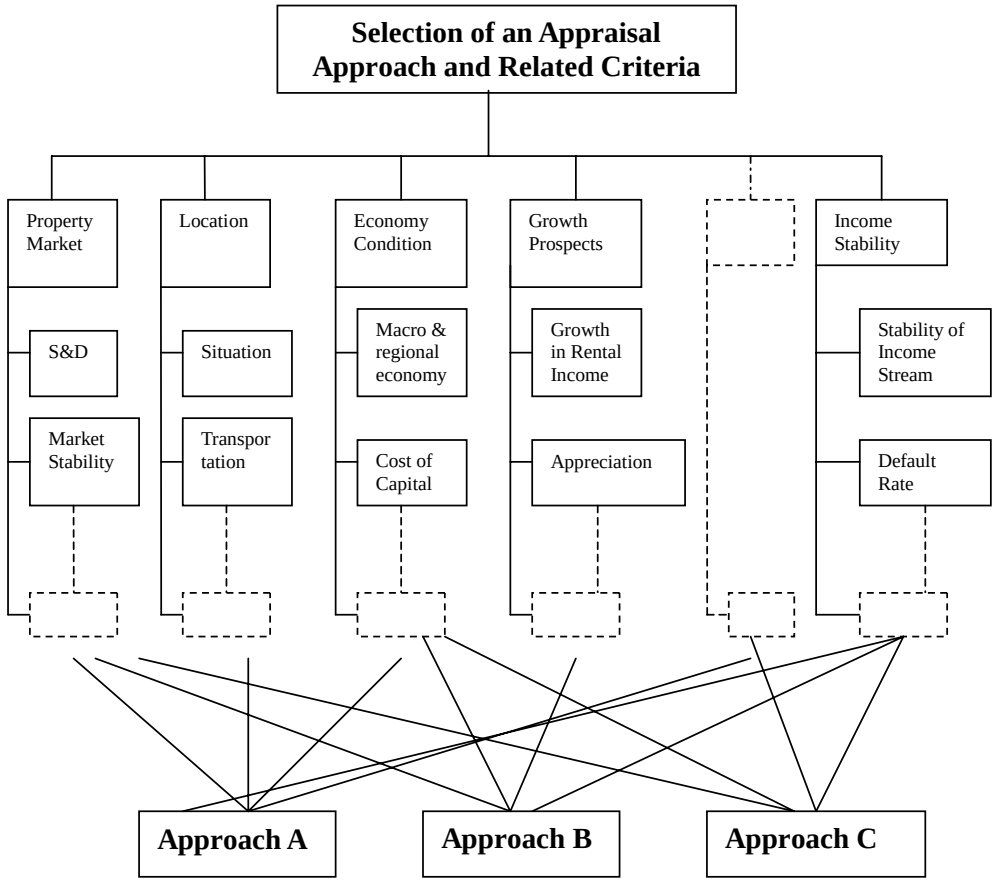
The interrelation of these factors and appraisal approaches are illustrated in Exhibit 6. Suppose that there is an object property for appraisal and there are three approaches for comparison: A, B, and C. The criteria for comparison include: state of property, location, economic situation, growth prospects, and the other factors discussed above. Each criterion will be cross-compared in the questionnaire for their relative importance. For example, if ''property market'' is absolutely more important than ''location'', then the ''9:1'' will be marked on the important side for property market; otherwise, 1:9 will be marked. For n criteria, there are $n(n-1)/2$ comparisons in total. Using the Expert Choice software, the appropriate approach and the related affecting factors will consequently be selected through the ranking of the weights.

Analysis of Questionnaires

Selection of Appraisal Approaches

According to the survey on certified appraisers and researchers in Taiwan and subsequent analysis, the income capitalization approach was ranked as the first priority while valuing an income-producing property (office building) with each different criteria being singled out for comparison, followed by the sales comparison approach and then the cost approach. Exhibit 7 shows the comparative weights of these three approaches. Saaty (1980) suggested that the smaller the value of the consistency index (C.I.), the higher is the consistency of comparison. The acceptable range of the consistency index should generally be no more than 0.1. The C. I. in the current study is 0.018, indicating that the consistency in the analysis of this study is acceptable.

Exhibit 6
Illustration of AHP Method



The results show that certified appraisers and real estate researchers in Taiwan agree that the income capitalization method should be the first priority in selecting the appraisal approach for real estate securitization, followed by the sales comparison approach, and then the cost approach.

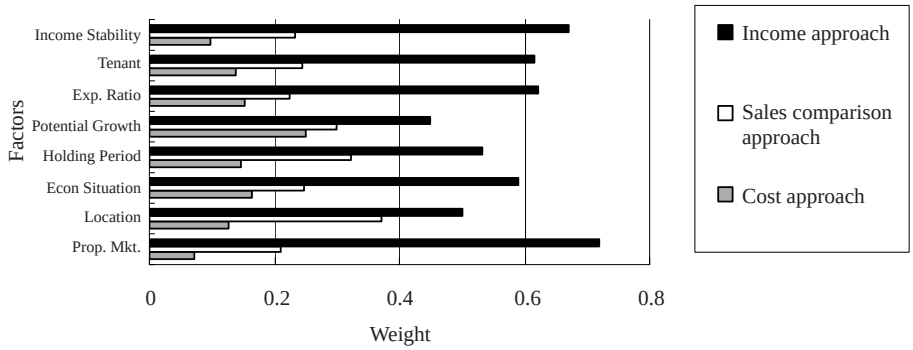
Priority of Different Criteria Affecting the Valuation

Exhibit 8 shows the results of the cross-comparison of the eight impact factors for their importance. According to the AHP analysis, the ranking of the impact factors influencing the capitalization rate in the appraisal of office building is: (1) location, (2) growth prospects, (3) income stability, (4) economic situation, (5) tenant, (6) expense ratio, (7) holding period, and (8) state of property markets, respectively.

Exhibit 7
The Relative Importance of Appraisal Approaches of Income-Producing Property (Office Building) towards Various Factors

Weight	Property Market	Location	Economy Situation	Holding Period	Potential Growth	Expense Ratio	Tenant	Income Stability	Overall Ranking
Cost approach	0.071	0.127	0.164	0.146	0.250	0.152	0.139	0.097	3
Sales comparison approach	0.209	0.372	0.247	0.321	0.300	0.225	0.246	0.232	2
Income approach	0.720	0.501	0.589	0.533	0.450	0.623	0.615	0.671	1
Sum	1	1	1	1	1	1	1	1	

Note: C.I. = 0.018, C.R. = 0.012.



Results

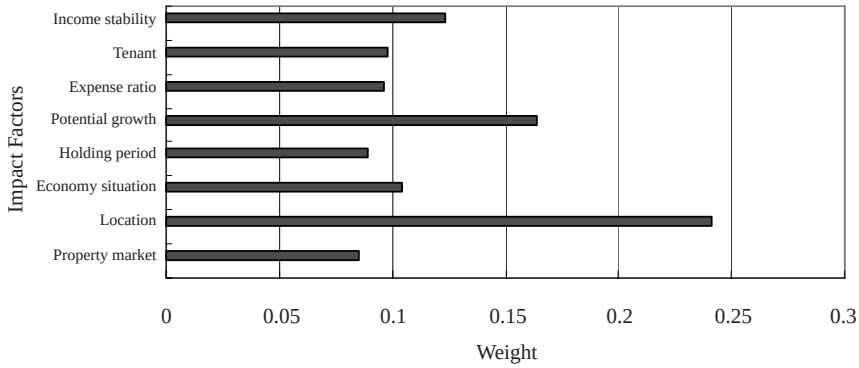
From the analysis above, appraisers and researchers in Taiwan give the most weight to location, with a weight of 0.241, followed by growth prospects, with a weight of 0.164, income stability of 0.124, economy situation of 0.104. and tenant of 0.098. The results may reflect that certified appraisers and real estate academics in Taiwan agree that the most important factor in valuating incoming-producing properties, especially for real estate securitization, is location. This conclusion is consistent with the conventional wisdom of the most important factor in real estate investment—''location, location, location.'' The second priority is growth prospects, indicating that appraisal experts in Taiwan agree that potential for growth or appreciation, or investment timing, is an important factor next to location.

As for the selection of appraisal approach, most real estate appraisal practitioners in Taiwan recognize income capitalization as the primary choice for the appraisal of income-producing properties, especially for real estate securitization, followed by the

Exhibit 8
Weights of Impact Factors on the Capitalization Rates of Income-Producing Property in Taiwan

	Property Market	Location	Economy Situation	Holding Period	Potential Growth	Expense Ratio	Tenant	Income Stability
Weight	0.085	0.241	0.104	0.089	0.164	0.096	0.098	0.123
Ranking	7	1	4	8	2	6	5	3

Note: C.I. = 0.015.



sales comparison approach, and then the cost approach. In the income approach, direct capitalization is preferred only when future stable income can be projected; otherwise, the DCF should be employed. Further, more weight should be placed on the income stream for the operation period (e.g., ten years) rather than on the last reversion. Taking the U.S. experience as an example, the ten-year DCF approach is the most commonly-used method for income-producing properties. The former portion of income from operation is considered relatively more important when compared with the final reversion, since the latter is far away from the projection point.

International Comparison

As compared with Parker (1996), results of the survey in Taiwan appear to be mostly consistent with the U.S., U.K., Canada, and Australia (Exhibit 9). Certified appraisers and researchers in Taiwan tend to agree that the income capitalization approach (especially the DCF method) should be initially employed for the valuation of income-producing properties. The market comparison approach should be considered next.

As for the determinants of the capitalization rate, respondents in each country gave different determinants of various rankings. As shown in Exhibit 10, appraisers in Australia and the U.K. both stress the importance of tenants, partly due to their close historical, cultural, and economic links. Appraisers in Taiwan, as well as the U.S.,

Exhibit 9
International Comparison of the Selection of Valuation Methodology

Country	Principal Method	Secondary Method	Other Method
Australia	DCF	Capitalization	Market Approach
United States	DCF	Capitalization	Cost & Market Approach
Canada	DCF, Capitalization	Capitalization, DCF	Market Approach
Great Britain	Capitalization	DCF	Market Approach
Taiwan	DCF	Capitalization	Market Approach

Notes: This table uses office investment property as an example. The sources are Parker (1996) and the author.

Exhibit 10
International Comparison of the Determinants of the Capitalization Rate and the Rankings

Ranking	Australia	United States	Canada	Great Britain	Taiwan
1	Tenant	Location	Growth	Tenant	Location
2	State of property market	Building	Location	Building	Growth
3	Growth	Growth	Tenant	State of property market	Income stability
4	Risk	State of property market	Sentiment	Location	Economy situation
5	Location	Tenant	State of property market	Sentiment	Tenant
6	Building	Economy situation	Risk	Alternative investments	State of property market

Note: The sources are Parker (1996) and the author.

give location as the first priority. Canada emphasizes the importance of growth prospects, followed by location. The results may be explained by the close relationship and proximity of the U.S. and Canada, and the legislation and market experiences that Taiwan has learned from the U.S.

Despite the different priorities given to these determinants affecting the capitalization rate in the process of appraising income-producing properties in different countries, location, tenant, growth prospects, and the state of property markets are ranked as the top four common impact factors in these five countries. International appraisers and researchers should consider taking the results into account while conducting appraisal tasks or similar research in the future.

Conclusion

Real estate investment has turned traditional tangible assets into prevailing financial instruments after securitization, significantly increasing its inherent low liquidity. From the successful development and popularity of REITs among investors in the U.S. and Australia, and the increasing trend to join the global stream for Asian countries, it is evident that the prospects for real estate securitization is full of great potential.

In the process of real estate securitization, the combination of real estate appraisal and the security valuation for an IPO is a complicated assignment. This study introduced the development, structure, and markets of real estate securitization in Taiwan. Secondly, questionnaires regarding the priority of appraisal approaches and impact factors were given to certified appraisers and real estate professors in Taiwan for AHP analysis. The results indicate that income capitalization approach is the most appropriate approach for income-producing properties in real estate securitization, and that location and potential growth (or investment timing) are the top two priorities in determining impact factors for valuation in Taiwan. Therefore, Taiwan's revised Ordinance of Real Estate Appraisal Techniques[7] (June 2006) requires that the DCF method should be given more weight in averaging various results from different approaches in REIT valuation. Due to various features regarding investment limitations and tax laws for REITs, and the valuation criteria in the appraisal process in different countries, international investors and appraisers may need to take into account the basic distinctions between valuation of real property markets and REITs to reach a reasonable and objective appraised value for real estate securitization.

Endnotes

1. The additional purchase of another retail center for FuBon REIT #1 is a special case in the development of a T-REIT due to the legislation insufficiency. The Financial Supervisory Commission has thereafter prohibited similar additional fund raising due to the essence of close-end fund designation of T-REITs.
2. The minimum investment amount of a T-REIT is NT$10,000, which may also be the reason the investment has the potential to be an investment diversification.
3. According to # 22 of the Real Estate Securitization Statute.
4. The supervision meeting of the valuation board is no longer required to simplify the process since August 2006.
5. There were several failed real estate securitization attempts (e.g., Fong-Dieh and Europe Mutual Community) in Taiwan in the 1980s due to imperfect regulation. Turmoil arising among investors, issuers, and governments led to disorder in the real estate and financial markets. Thereafter, the Taiwanese government has been very cautious in regulating the mechanism for investor protection.
6. Only KeeTai Star and San-Ding REIT fell slightly below face value after IPOs in August 2006, partly due to credit ratings and the absence of strong group backup for these two REITs.

7. The revised Ordinance of Real Estate Appraisal Techniques in Taiwan in June 2006 referred to terminologies in the International Valuation Standard proclaimed by the International Valuation Standard Committee for international consistency.

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