

THE EFFECTIVENESS OF THE DIRECT SALE COMPARISON APPROACH TO OFFICE APPRAISAL IN SINGAPORE

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Abstract

The skyline of Singapore's Central Business District (CBD) reflects the prestige and multitude of office buildings in the city state. Investment in CBD office buildings can amount to billions of Singapore dollars. Any investor in office buildings has indubitably relied or relies primarily on the valuations of these buildings to determine investment returns. The most popular and universally used method for valuing these investment buildings is the Direct Sales Comparison approach.

The position adopted in this paper is that even though the wealth of practical experience favours the use of the Direct Sales Comparison approach, it encounters methodological constraints. The lack of some critical information in the available data tends to make the method less effective than it is claimed to be for office valuation; failure to account for the conditions of sale and the terms of financing can introduce distortion of market values. This can lead to the distortion of the asset pricing of local office space. There will be growing

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concern to regularise the direct sales comparison approach in this regard, and to re-consider the use of the income approach as well as the discounted cash flow approaches, in part or in full.

Key words: Office Valuation, Market Value, Sales Comparability, Adjustment, Market value distortion.

Introduction

Valuers are among the few professionals who are always under public scrutiny. In the United Kingdom and United States for example, values are quite often summoned before the courts for negligence.

The reason for this is quite obvious - valuers are potentially wealth creators. Thus, a well-researched and supported valuation could significantly contribute to the financial well-being of the clientele. Alternatively, a valuation which does not resolve the client's problem about property value by reference to all the relevant social, economic, physical and governmental factors could lead to incalculable financial loss to the property investor(s) and financial institution(s).

Thus, Bonbright (1937) could be forgiven for referring to the appraisal profession as a "dangerous profession". The peril of the profession does not lie in the fallible process of valuation which is adopted to resolve the clients problem about property value. After all, no one, and therefore no profession or group of individual (including the clergy) has a claim to be a paragon of virtue. Thus the danger lies in the way valuers apply the valuation principles to address their clients' valuation problem(s), and the allowable margin of error - plus or minus 20% of the correct valuation (*Banque Bruxelles Lambert SA v Eagle Star Insurance Co Ltd, Professional Negligence, Vol. 10, No. 2, 1994*). It must be admitted that even though valuation is a "scientific-art", a little more effort on the part of practitioners could considerably narrow the margin of error between two competent valuers for the benefit of the clientele, and enhance the reputation of the profession which is waning fast in some parts of the world, including Singapore (references being taken from the local press, the Straits Times

23: November 1994; 30 November 1994; 2 December 1994; 5 December 1994; 10 December 1994 and 14 December 1994; also Whipple, 1990).

The statement by Babcock (1925) that “appraisers are examiners and their responsibility is to fact and accuracy,” is instructive indeed. It is because of these reasons that the authors have been prompted to write this paper. It is a positive critique of far reaching significance to the practitioner.

It should not therefore be dismissed as merely academic; nor should it degenerate into a futile debate between academia and practitioners. The paper is aimed at provoking constructive and useful debate that will lead to an improvement in the valuation of office buildings in Singapore. Furthermore, even though the authors have limited themselves to the valuation of offices, most of the observations in this paper are applicable to the valuation of all properties in Singapore.

Office Properties

Office properties come under the classification of income-producing real estate or investment properties, which have certain distinguishing characteristics that a valuer must emphasise in his valuation.

As with all other real estate, office properties have the following peculiarities:

- (1) They are a highly differentiated commodity that is fixed in location.
- (2) Their immobility places a premium on location.
- (3) They are exchanged in imperfect markets characterised by relatively uninformed buyers and sellers of property rights.
- (4) Because they are often relatively highly priced among all economic goods, their purchase typically requires some debt-financing (i.e. leverage).

In addition to all these characteristics, office buildings have some distinguishing features in relation to investor viewpoint, user orientation, stratification of investor demand, emphasis on functional utility and leasing, mobility of user-occupants etc. (Kinnard Jr, 1971).

One glaring characteristic of an investment(s) in other non-residential property e.g. industrial, is that purchasers are usually influenced by the investment motive itself. In other words, the underlying motivation for acquiring an office property is to receive the actual rental (in the case of investors) or imputed rental (in the case of investor-occupiers) generated by the use of office space. It must be noted, however, that the typical purchaser is often an investor who is seeking benefits in the form of rental rather than from his own use of the property. Thus the amounts which purchasers/investors are willing to pay for such properties are a function of the respective income stream and capital appreciation.

Valuation of Offices

Babcock (1925) stated that "... the principal process used in approaching the values of properties will in each case be that process which most closely approximates the motives and factors considered by purchasers... In other words, that appraisal process is selected as the correct one for each case which most closely corresponds to the market in which the property would be sold." (see also Greaves, 1972).

Since the derivation of rental income is the prime motivation for typical investment(s) in office properties (see Kinnard, Jr., 1971), it is obvious that the valuation method which seems to be most appropriate to the valuation of such properties is the investment method. It is known as the Income Capitalisation approach in the United States of America (USA).

Kinnard, Jr...(1971), in commenting on income-producing real estate investors viewpoint stated:

"Value is typically viewed and measured as the present worth of the anticipated future income forecast to be derived from possession of ownership rights in the estate.

As a corollary to this emphasis, attention is also focused on the capital gain...” (see also Baum & Mackmin, 1989).

Rees (Ed), 1988, categorically states:

“Office buildings are invariably valued by the investment method, which is the determination of the present value of the rights to receive, and liability (if any) to pay a future sum or a series of future sums by discounting them at a compound rate determined by direct comparison with yield obtained on other investment(s), i.e. it is the determination of the value of an interest by the capitalisation of rental income.”

In addition to the investment method, the Direct Sales Comparison approach is also appropriate in the valuation of office buildings under relevant conditions. However, it must be cautioned that even where the Direct Sales Comparison approach is the most appropriate method of valuation, valuers cannot turn a blind eye to the rental income from such properties. Rental income is a material and potent market phenomenon. Consequently, it must be utilised in the valuation either as the primary basis for estimating value, or as the secondary method for checking the validity of the value estimate derived by the use of an alternate appropriate method.

Investment Method

This method is premised on the economic principle of anticipation (Fisher 1960; Albritton 1982; Kinnard, Jr. 1971; AIREA 1991; Shenkel 1991). Thus investors in office buildings, (and in real property in general) purchase “futures” not “history”.

In its simplified form, the formula for the investment method is:

$$CV = NRV (\text{NOI in USA}) \div i \quad \text{or} \quad NRV \times YP (\text{NOI} \times \text{PVAF in USA})$$

where CV = Capital Value

NRV = net rental value (NOI = net operating income)

- i = capitalisation rate expressed as a decimal
YP = years purchase (PVAF = present value annuity factor)

Readers may refer to any valuation textbook and to some of the countless number of articles on the investment method for further information. Examples include Wendt, 1956; Shenkel 1991; Kinnard, Jr. 1971; Boykin & Ring 1993; Britton et al 1989; AIREA 1991; Baum & Mackmin 1989; Greaves 1972; Byrne & Mackmin 1975; Baum & Yu 1984; Trott 1988.

Sales Comparison Approach

When sufficient recent reliable data are available, this is the most direct and systematic approach (AIREA 1991; Kinnard, Jr. 1971; Britton et al 1989). The approach has broad applicability and is persuasive when sufficient and reliable data are available. It is based on the economic principle that a prudent investor or purchaser will not pay more for a property than the price an equally desirable substitute property would bring in the open market at that approximate point in time (Albritton, 1982). Because the method is founded, inter alia, on the principle of substitution, it depends on detailed analyses of recent sales, current listings, purchase options, and offers to purchase as indicators of market attitudes concerning the ability of similar properties to satisfy anticipated objectives.

It must be noted that the method is based on comparing like with like (Britton et al, 1989). Thus, as properties move away from the ideal situation of absolute similarity, so does the method become more unreliable. Because of the heterogeneous nature of real property, the application of this method requires the valuer to simulate the price each “comparable” property would sell for on the date of the subject appraisal if each “comparable” property were identical to the subject property. This simulation or the market value inference demands detailed analyses of data to discern any variance(s) between the subject property and each “comparable” property, in order to apply correctives (or adjustment(s)) to the sale data of the comparable properties so as to convert these prices into acceptable measures of value for the subject property.

It must be reiterated that the validity of the value indications produced by this method is predicated upon the true comparability of the sales data used for the valuation. Unfortunately however, “some real estate practitioners including many appraisers, casually use the term ‘comparable’ to signify a property sale..., but frequently the transaction is not comparable” (Albritton, 1982). Sales data must meet specific tests of comparability to qualify as comparables.

Even though properties must be similar in physical, functional and economic aspects because comparability is measured in terms of productive capacity, efficiency and functionality, it must be noted that there are other factors which affect the ultimate determination of comparability. These factors include:

- (1) Motivation of buyers and sellers
- (2) Terms and conditions of sale, and
- (3) Competitiveness (Albritton, 1982).

The sale must be consistent with the definition of market value to be used as a comparable.

According to Kinnard, Jr. (1971), the detailed transactions data on market sales of similar, competitive properties which are pre-requisites for the sale comparison approach include:

- (1) date of transaction to identify conditions prevailing;
- (2) verified sales price;
- (3) location, land use controls and environmental influences;
- (4) physical characteristics and condition;
- (5) income and expense information (at least potential and effective gross income);
- (6) terms of financing;
- (7) conditions of sale (i.e. motivations of buyers and sellers);
- (8) number of units in property: physical and economic or operational.

In its book entitled ‘Appraisal of Real Estate (1991)’, the American Institute additionally incorporates the following data requirements:

- (1) real property rights conveyed
- (2) property's functional condition and economic characteristics.

All the above data are required for the adjustment process which enables the valuer to ascertain in the following tasks:

- (1) What the comparable sale property would have sold for if it had possessed identical "characteristics" with the subject property instead of the "characteristics" it possessed at the time of sale.
- (2) The difference in sale price which these differences in "characteristics" made. This indicates the amount of adjustment which must be made for each difference, and must be based on market evidence - not on the opinion of the valuer.

The adjustment to the comparable sales data is done through the "elements of comparison" which are the characteristics of properties and transactions that cause the prices paid for real estate to vary.

According to the American Institute of Real Estate Appraisers (1991), there are nine basic elements of comparison which should always be considered in the sales comparison analysis.

These are:

- (1) Real property rights conveyed
- (2) Financing Terms
- (3) Conditions of sale
- (4) Market conditions
- (5) Location
- (6) Physical characteristics
- (7) Economic characteristics
- (8) Use
- (9) Non-realty components of value

This list is by no means exhaustive as additional elements such as accessibility, conservation regulations, etc. may be included where warranted by the circumstances of a valuation problem.

It is evident from the above discussion that a consideration of the nine basic elements of comparison is prejudicial to the comparability of the “comparable” to the subject property. In other words, if all the basic elements of comparison are not considered in the sales comparison approach to ensure that the relevant adjustment(s) is/or are made, where applicable for each “element”, then the comparability of the comparables and therefore the validity of the resultant value indications could be severely impaired so as to make the valuation highly questionable. Thus the sales comparison approach requires full knowledge of each transaction. Where such a knowledge is not existent, the application of the method becomes difficult to justify.

The Singapore Practice

The sales comparison approach is universally applied in Singapore for almost every valuation regardless of the purpose of valuation and/or type of property being valued (Lee & Yu, 1990). This is attested by tables 1 and 2 below that are taken from a study by Lee and Yu.

Table 1: Use of Methods by Purpose of Valuation

Method	Direct	Comparison	Income		Cost		Profits		Residual	
Purpose	M	S	M	S	M	S	M	S	M	S
Property Tax	79.4	0	2.9	23.5	0	23.5	0	11.8	0	8.8
Devt charge	58.8	0	2.9	8.8	0	17.7	0	11.8	2.9	38.2
Stamp/Est Duty	70.6	0	0	11.8	0	11.8	0	11.8	0	8.8
Acquisition	70.6	0	0	11.8	0	17.7	0	14.7	0	14.7
Mortgage	79.4	0	0	32.4	0	32.4	0	26.5	0	29.4
Insurance	14.7	8.8	2.9	8.8	47.1	11.8	2.9	8.8	0	11.8
Asset	50.0	11.8	5.9	32.4	11.8	26.5	0	29.4	0	23.5
Sale/ Purchase	79.4	0	0	29.4	0	23.5	0	20.6	0	20.6
Lease/ License	55.9	0	5.9	17.7	0	17.7	2.9	23.5	0	11.8

M = Main Method

S = Secondary Method

Source: Amy Lee & Yu Shi Ming. "The Valuation Profession and its Practices," Table 5, SISV Journal 1990.

Table 2. Use of Methods by Type of Property

Method	Direct	Income	Cost		Profits		Residual		Residual	
Type of Property	M	S	M	S	M	S	M	S	M	S
Residential	88.2	2.9	2.9	17.7	0	17.7	0	5.9	0	20.6
Commercial	85.3	2.9	8.8	23.5	11.8	8.8	0	11.8	0	20.6
Hotel	58.8	2.9	14.7	26.5	0	23.5	8.8	23.5	0	5.9
Industrial	76.5	8.8	8.8	11.6	5.9	20.6	0	11.8	0	14.7
Special Ppty	32.4	5.9	11.8	35.3	14.7	35.3	14.7	17.7	2.9	8.8
Vacant Land	55.9	2.9	0	2.9	2.9	11.8	0	14.7	14.7	35.3

M = Main Method

S = Secondary Method

Source: Amy Lee & Yu Shi Ming, Op cit, Table 6

The above findings are supported by a recent study by Chokkalingham (1993/94) which found that all valuers in Singapore employ the sales comparison approach as the main method for valuing offices.

In their study on “The Valuation Profession and its Practices,” Lee and Yu (1990) expressed surprise that the income method is not considered (in Singapore) “to be a main method for all purpose of valuation.” However, an attempt was made to justify the practise of subjugating the income method to the other methods with the statement: “Perhaps the local appraisal fraternity has not yet been seriously called upon to give investment counselling beyond the establishment of value.”

While the implication of such potential consulting holds out for the local appraisal fraternity, it is just as essential for the fraternity to promote and not to preclude the use of the method in valuing income producing properties in Singapore. This is because the method lends itself to both investment and market valuation. Failure to do so makes it incumbent on the fraternity to establish and defend the rationale and the expediency issue in this potential area of investment counselling.

Universal Application of Sales Comparison Method

The main reasons for the universal application of the Sales comparison method to almost every valuation problem in Singapore are given in table 3 below.

Table 3. Reasons for the Use of Market Comparison Approach

	Percentage
Simple to calculate	67%
Easy to understand	75%
Gives an accurate value	58%
Quick means of valuing a property	75%
Fewer assumptions to make	42%
Widely accepted in Court	8%
Not aware of modern technique	8%

Source: P. Chokkalingham, Application of Discounted Cash Flow Technique to Valuation, SBEM 1993/94

It is interesting to note that 58% of the valuers who responded to the survey think that the method gives an accurate valuation. It must be cautioned, however, that 50% of this group of valuers indicated that the value derived through the sales comparison method is only fairly accurate.

Furthermore, the widespread use of the sales comparison method has been defended on the pretext of:

- (1) the availability of comparable sales data;
- (2) expertise and market experience of appraisers (Lee and Yu, 1990).

Certainly, experience which is the best teacher of the learning process, is invaluable in valuation. However, “experience” is the best teacher only when “experience” is not one mistake repeated with increasing frequency in later years, especially with regard to shortcomings and/or ignoring better alternatives of a current system in use.

As far as the availability of sales data is concerned, this is particularly true of strata units (i.e. individual offices within a block of offices). The market is, however, relatively very thin as far as whole blocks of offices are concerned. Reliable Market data in Singapore are mainly documented in the Singapore Institute of Surveyors and Valuers (SISV) database and the Singapore Association of Realtors database.

The intriguing question is whether the abundance of sales data on strata units justifies the universal application of the sales comparison method to the valuation of offices in Singapore. The answer to this question requires a scrutiny of the quality and comprehensiveness of the available sales data.

Since about 91% of all practitioners in Singapore use the SISV Sales database (Lee and Yu, 1990), this database is briefly discussed below.

The SISV Sales database is a computerised database of all property sale transactions which have been registered with the Registry of Titles and Deeds. The accuracy of the data is therefore dependent on the veracity of vendors and purchasers.

Furthermore, the SISV sales records provide data on tenure, district, street, floor and area of the respective properties, and the date of the transaction. Some of the critical data which are prerequisites for the comparison method such as: financing terms, condition of sale, economic characteristics and physical features are not available.

Thus, the usefulness of the available comparable sales data on their own, as far as the comparison method is concerned, could be subject to some extent of undue variability. In order to ensure the reliability of the value inferences derived from these data, the onus is on the valuer not only to verify the sales data but also to fully understand the behavioural characteristics of the buyers and sellers who are involved in the relevant property transactions. The warning by AIREA (1991) that “incorrect assumptions and conclusions may result if the appraiser relies on cold statistical data without regard for the motivation of the parties to the transactions”, is instructional and timely.

It may be contended that all the valuers who use the SISV Sales database also rely on their own database, and/or their companies’ database to complement the SISV sales records to rectify any apparent inadequacy. Unfortunately, valuers in Singapore tend, on the whole, to set aside the conditions of sale and financing terms in the process of working through the comparison method of valuation. Therefore, it is unlikely that individual valuers may have information on the “conditions of sale” on their own and/or on the companies’ database to compensate for any deficiency in the SISV data.

Effects of the Failure to Account for Conditions of Sale

The essence of taking cognizance of all the nine elements of comparison is to ensure the representativeness, and therefore the comparability of all the comparables on every “count”. This would make it difficult to reconcile with the approach adopted by Ho (1979/80) in his study on “The Market Comparison Method Valuation” in Singapore. Ho justified the exclusion of conditions of sale in the adjustment process by stating, inter alia, that “... it could be argued that such terms and conditions tend to be similar for similar types of properties at any given time.”

It would be difficult to conceive how Ho's approach should hold indefinitely. Experiences in Singapore show that such a simplistic approach is not a steady state phenomenon. The sale of the former Standard Chartered Bank Building, now known as 'Number 6 Battery Road' in the heart of Singapore's prime Central Business District, is an indictment against such an approach. This particular transaction, was among other things, a sale-leaseback. Without such foreknowledge adequately addressed to complement the SISV record of this particular sale transaction, market value distortion could well be introduced. This is because of the disinformation concerning the property basis upon which the value of the comparable subject property is derived. It could lead to an unexpected contribution to asset inflation or deflation of local property prices. It must be noted that the building was sold for \$800 million. This was 20% below the most conservative estimate. Furthermore the \$800 million selling price was not the highest bid. Thus, the "below-market" selling price was due to the special conditions of sale surrounding this transaction. This means that any valuation which utilizes this transaction as a comparable without any adjustment for conditions of sale is likely to lead to under-valuation of the subject property.

Two interesting recent transactions facilitate further discussion on the above issues: the Matterhorn and the International Factors buildings.

According to the local press, the 'Straits Times' of 27 April 1994, the Matterhorn Building was bought by the local leading property developer, City Developments Ltd, for S\$72 million (at close of tender on Tuesday, 26 April 1994). The relevant background information on this property are as follows:

- (1) Singapore Finance and Hong Leong Finance (the vendors) had been trying to sell the property for the past six years.
- (2) The first unsuccessful attempt to sell the property was in 1989 during a time of market boom for office properties. The reserve price was S\$60 million.
- (3) The second unsuccessful attempt at selling it was made in 1992 at the reserve price of S\$45 million.

- (4) The property was sold for S\$72 million at the third attempt in 1994 after a reinvitation to an earlier tender. The second highest bid was about S\$59 million (see St, 27 April 1994).
- (5) The property has a development potential which permits the existing floor area (33,207 ft²) to be more than tripled.
- (6) Both vendors, and City Developments (i.e. the purchaser) are controlled by the local and wealthy Kwek Family - a fact which makes the City Developments purchase entirely different from an arm's length transaction, having no vested interests.

According to the Straits Times of 27 April 1994, consultants and commentators on the whole felt that the City Developments bid was "on the high side". It was also reported that "CityDev's high bid will definitely boost the capital value for office space here."

The sentiments of local property experts were consistent with those of an analyst from a local securities firm:

"Perhaps CityDev is trying to set much higher office rentals for its Republic Plaza project being marketed now" (Straits Times dated 27 April 1994).

All these can happen only if the Matterhorn's sale price as recorded on the SISV database, is "unjustifiably" used as a comparable (without any adjustment) for valuing other properties. In the situation where no adjustment(s) is/or are made for the conditions of sale, the City Development's bid in turn could well be used to value other office properties, thereby propelling market values into an upward spiral.

As far as the International Factors Building is concerned, the transaction seemed to be arm's length. However, the sale price of S\$96 million (or S\$1,886/ft²) reflects that it is a function of the development potential of the property (Straits Times dated 23 December 1994). Thus, the sale price cannot be used as a comparable for valuing other office properties which have no development potential without making the necessary adjustment(s). The requisite adjustment(s) could be determined through the paired-data set analysis, etc.

The foregoing discussion, nevertheless, highlights the potential problem of non-representative sales data being utilised (without any correctives) for valuations that could introduce distortion of market values to some extent. The solution lies in the need for valuers to disclose and to account for the “conditions of sale” in their valuation statements.

Financing Terms

Another critical element which is not accounted for when the Sales comparison approach is employed for valuation in Singapore, is the financing terms. The main reasons are:

- (1) the lack of information on financing terms
- (2) the absence of mortgage assumption in Singapore.

The lack of information on “financing terms” should not exonerate valuers from taking due cognizance of it in their valuations. It should rather be the difficulties of taking account of the financing terms, arising from the paucity of information, that should negate the universal application of the sales comparison method for valuations in Singapore.

On the question of mortgage assumption, Ho (1979/80) stated that:

“In Singapore however, most valuers are not bothered with such problems ... Most properties are sold free and clear of the mortgage ... As a general rule, a valuation should reflect a price which implies a valuation free from mortgages.”

It is apparent from authoritative books that adjustment for financing terms is not a function of mortgage assumption per se. Differences in loan amounts and terms warrant the adjustment of sales prices (AIREA, 1991).

Furthermore, the “free and clear” argument is somewhat anachronistic. The property may be sold “free and clear of all encumbrance(s).” However, it may not be purchased without “encumbrance(s).”

The definition of the market value assumes that the purchaser-investor is prudent, informed and rational who seeks to maximise his investment returns. Certainly, such an investor knows that he can, and often obtains debt financing; and that by borrowing as much of the purchase price as the ‘traffic will bear’, he can substantially benefit from trading on equity through leverage. Because of these reasons and the need to supplement equity funds with debt capital to complete the purchase of real estate, especially that of income-producing properties, mortgage financing is a persistent feature of the property market. Since the typically available financing and its terms can and do influence property values, and since the valuer is a recorder, an analyst and an interpreter of market behaviour, it then becomes imperative for the valuer to pay due attention to financing terms in his valuation.

In Singapore, debt financing comes in various forms. The loan to value ratio (up to 80% of valuation or price whichever is lower) can differ substantially; the loan period may also differ; and the interest charged on the loan can differ.

All of these items call for the adjustment of sale prices. Commercial loans in Singapore attract an interest charge of the prime rate plus 1.5% to 3.0%. The norm is prime rate plus 1.5% to 2%. Typically, a commercial loan at the prime rate plus 1.5% is an attractive deal. However, there are some privileged customers who can and do take commercial loans at the prime rate.

For illustration purposes, let us assume that the typical purchaser-investor of an office unit raises a commercial mortgage at the prime rate of interest plus 1.5% (i.e. 7.75% at current rate). Consider the position of an investor who purchases an office for \$1.25m with 20% equity and 80% commercial loan for 10 years at the prime rate of 6.25% per annum with monthly compounding. This commercial loan is based on atypical market financing which warrants the adjustment of the purchase price before it can justifiably be used as a “comparable” for valuation(s).

To illustrate how the adjustment is done, it is further assumed (for simplicity) that the prime rate will remain at 6.25% p.a. for the period of the loan. Thus, the sale price (S\$1.25m) adjusted for financing will be equal to the sum of the cash payment (equity) and the present

worth of the monthly mortgage payment (based on 6.25%) discounted at the market rate (i.e. 7.75% p.a.).

This can be mathematically expressed as follows:

$$\text{PVMMP} = \text{MMP} \times \text{PVAF}_{i,n}$$

where $\text{MMP} = \text{MC}_{i,n}$ (Loan amount)

$\text{MC} =$ Monthly mortgage constant

$\text{PVMMP} =$ Present Value of monthly mortgage payment

$\text{PVAF} =$ Present Value of an annuity factor

$\text{MMP} =$ Monthly mortgage payment

$i =$ annual mortgage interest rate

$n =$ term of mortgage in months

Given that: Mortgage : S\$1m (i.e. 80% of S\$1.25m) for 10 years @ 6.25%
 Equity : S\$0.25m (i.e. 20% of S\$1.25m)

$$\begin{aligned} \text{Thus, MMP} &= \text{MC}_{0.0625/12,120} (\text{S}\$1,000,000) \\ &= 0.01122801 \times \text{S}\$1,000,000 \\ &= \text{S}\$11228.01 \\ \text{PVMMP} &= \text{S}\$11228.01 \times \text{PVAF}_{0.0775/12,120} \\ &= \text{S}\$11228.01 \times 83.325813 \\ &= \text{S}\$935583.06 \\ \text{Add Equity} &\quad \text{S}\$250,000 \\ &\quad \text{-----} \\ &\quad \text{S}\$1,185,583.06 \\ &\quad \text{-----} \end{aligned}$$

The sale price adjusted for financing is imputed to be S\$1,185,583* which gives the borrower a saving of S\$64,417.

Any valuation which utilises this particular transaction as a comparable must be based on S\$1,185,583 and not \$1.25m. The failure to account for financing terms means that some non-representative sales data (due to atypical market financing) are bound to introduce distortion of market values and, therefore, the price of properties.

Furthermore, it is worth noting that the lower the prime rate, the bigger will be the difference between the adjusted and unadjusted sale price, and vice versa. Similarly, the longer the loan period, the bigger the difference between the two figures. For example, for a loan term of fifteen years, the difference between the adjusted and unadjusted figures would be S\$89,087.

Another way of looking at favourable financing terms is the advantage conferred on the privileged borrowers. In a competitive market, a privileged borrower-investor could use all or part of the “savings” (i.e. the S\$64,417) to outbid his competitors. Such a bid (i.e. price) will be an “above-market” bid which is invariably a function of below-market financing.

The cumulative effect(s) of an atypical favourable loan-to-value ratio and favourable financing terms on market values and on the price of office properties in Singapore, due to the neglect of financing terms, could be quite substantial.

Conclusion

“The more or less complicated series of mathematical manoeuvres for making the adjustments ... encourage violation of the basic principles of the comparable sales method ..., to wit: that the appraiser should establish the value of a subject property by reference to bona fide sales of sites having the same or nearly the same characteristics ... In summary, it would appear to be much more rewarding for the appraiser to spend his time seeking out sales which are truly comparable and less time in attempting fancy adjustments of non-comparable data by use of dubious mathematical procedures.” (P.F. Wendt, 1956).

* If the market rate is assumed to be the prime rate plus 1.75%, this figure becomes S\$1,175,429 - a savings of S\$74,571 to anyone who borrows at the prime rate.

The wisdom in the above statement cannot be over emphasised. However, it has been established earlier on that the true “comparability” of sales data is a function of all the elements of comparison. This means that failure to account for any of the elements of comparison is prejudicial to the comparability of the “comparable”, and thus to the valuation, the market value and the price. In other words, the probability of distorting market values and/or the price of properties as a result of failure to account for all the warranted elements of comparison could be quite substantial.

This does not mean that every valuation of offices which has ever been done in Singapore is inaccurate. What is more important is the lesson drawn from the study that there is a possible weakness of the valuation process in Singapore in that non-representative sales data might have been used, and are being used, for valuing offices because of the failure to account for the “conditions of sale” and the “financing terms”. The consequential effect of such neglect on market values and/or the prices of offices in Singapore over the years could lead to asset inflation or deflation of local office space.

Hence, there appears to be the need for a re-think of the direct sales comparison approach to make it more robust for office valuations in Singapore. Its effectiveness can be enhanced via regularising the associated adjustment process to incorporate appropriate details on the conditions of sale and the terms of financing. Such critical information tends to be overlooked. As far as income-producing properties (such as offices) are concerned, it would appear that the income approach, and especially the discounted cash flow methods are either better alternatives or second-best checking methods carried out in parallel. (Rees, 1988; Britton et. al. 1989; Trott, 1986).

Although the direct sales comparison approach is deemed by its professionals in Singapore to be practically effective, it faces methodological constraints that tend to make the approach for office valuation somewhat debatable.

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