MASS VALUATION OF COMMERCIAL REAL ESTATE FOR TAXATION & BALANCE SHEET PURPOSES

- Productive review on valuation practice

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[ 2009] 

supervisor:
Hans Lind
FEW WORDS...

From many aspects, the act of criticism is simple. You can copy it or you can create it. Criticism is fun to write and also to read, but critic has to face the reality.

I’ll be happiest on the globe if I fulfill the goal that professor Erik Stubkjær at the beginning whispered to me:

“Always learn in such a way that outcomes of your learning action can be used by others who shares your ambitions.”
ACKNOWLEDGEMENTS...

“I dedicate my work to the mankind”

My family is aware of my appreciation.

This lifetime changing journey couldn’t ever happen if I didn’t meet Åke Uthas. I identified him as “my angel savior”.
I would like to express my gratefulness to all KTH personal and especially all Land Management program led by Professor Hans Mattsson.

Cooperation with my supervisor was so much frequent and resulted with lots of ideas and directions for future research. Yes, I’m so happy and thankful that professor Hans Lind is my supervisor.

This thesis journey started at feb.02.2009 in form of practical master thesis research within Lantmäteriet, department for real estate valuation. Henrik Roos and all other coworkers were very professional, supportive, and pleasant all the time and they had risen up my determination to continue in such way.

My acknowledgements are also aimed at DATSCHA AB, as private sector representative, for their interest to take a part and be introduced with this thesis paper.

Stamenko Kandic was acting like a father to me all the time. Without him I know that the whole journey wouldn’t be easy and so interesting. “Fala Dedo Menko!”
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1. INTRODUCTION...

Since the beginning of this thesis journey, lots of interests rise up among academic and professional circles. At the same moment I was glad that I win attention but I was also shocked, because hypothetical elaboration attracts criticism especially when the results are positive and indicates necessity of changes.

I’ll underline the feedback of my supervisor professor Hans Lind in sense that recent crash of real estate market and global financial crisis created atmosphere for introduction a new and a bit radical idea, for the moment of speaking.

On the same direction I’ll point on, as a little caution, intolerant act which is very contradictory with native Capitalism theory.

State direct financial aid to private banks and companies which were directly affected by the financial crisis is pure nationalization act but in the same time it’s very necessary to be done... also from social aspect.

… The one may be called "value in use"; the other, "value in exchange."…

As much as original and also exclusive opportunity for me is introduction of Mass Valuation model as necessary solution for balance sheet purpose... all purposes. Analogous, as I was over viewing market value definitions I identified a strong, fundamental mirroring of Reference Market Value Concept within mass valuation. This concept of market value can be and has to be used these days purposely to secure stable and continuous path of real estate market, prevented from rapid deviations.

So, the basic concept of this research is:
- detail overview on Swedish, taxation of commercial real estate;
- detail overview on Swedish valuation & mass valuation models;

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1 Adam Smith 1776
- detail introduction of Balance Sheet as financial paper;
- identifying intersection points between Mass Valuation & Balance Sheet;
- conclusion and recommendations;

The entire thesis research is based on official publications, books, laws articles, master thesis, doctoral dissertations and official results from Lantmäteriet.

The aim of this research is to test and identify real time phenomenon and problems within real estate market and to open a door for introduction of new proposals which will contributable to stable and secure Real Estate Market.

I would like to notice that, in this paper Balance Sheet is basic beginning concept of forward proposal. It is considered only in case when it’s matter of big companies, conglomerates or corporations which owns a number >10 of property units and they have to have estimated value of their real estate properties.

This thesis is based on research of Swedish real estate market, taxation law frame and real time information’s from private and public registers. It’s very natural to declare that the best implementation of this thesis proposal is possible in to Swedish society but in cases of transitional economies and development of countries, I believe it will take a little longer period and it’s very needed to be introduced.
2. TERMS...

Before I begin with my thesis paper, I felt a necessity to explain and define the terms which will be taken under consideration prospectively. In many of books, publications, science articles and research reports that I examined, I find out that there is bit confusion during elaboration of functions and meaning of particular terms.

- **Real Estate**;
Very often, transition economic countries use the term “real estate” only as reference to land unit. Detail explanation of this term is:
“Real Estate\'s are all immovable units physically characterized with location, shape, size and reference point such as land, building, house, production plant etc.”

- **Market Value**;
Definition of market value is very complex and can be much flexible in the same time. The pure assessor’s definition is:
“Market value is a value of the subject on the open market according to its location, purpose of use, age and rights, at particular point of time when willing buyer and seller are making transaction”

- **Valuation approach and Valuation method**;
In almost all valuation/appraisal literature we can find out that authors do not make any distinction between approach and method. They use these terms simultaneously for the same function, for example … income approach = income method. My distinction between approach and method is based on following perceptive:

“Approach represents strategy how to solve, work out specific problem. Which functions, acts, tables, algorithms will be use purposely to win a solution or result. In appraisal practice I can recognize three most common valuation approaches:
- Comparable sales approach
- Income approach
- Cost approach“
“Method represents its self as the tool in particular valuation approach, characterized by statistical, mathematical rules and formulas. In appraisal practice there are several valuation methods:
- Area method
- Assessment value method
- Discount Cash Flow method
- Direct Capitalization method”

- MASS valuation;
Mass valuation is a complex strategy interpreted by many processes within several stages which are regulated by Law. Mass valuation is performed under specific methodology, technically executed by developed IT system for efficient market research and accurate assessment of all types of real estate properties.
There is no specific method which is used in mass valuation as referent one. In the practice, used approaches and methods are usually in combination because not always all information’s are available.
3. HISTORY OF MASS VALUATION …

It is very unfortunate reality that there is no written history about Mass Valuation beside the fact that Mass Valuation is one very powerful and necessary strategy in every country purposely and originally for estimating tax base value.

All monarchies, had introduced the very basics of mass valuation process, centuries ago. A property unit, land was estimated according to its capacity of production. Tax base was production amount and rate of that amount was collected as tax. At that time, most probably (historians can confirm), property taxes were collected purposely to fill the gap in the royal budget created by war expenditures.

In Sweden, King Gustav Wasa at the early of 16th century had formed commission which had delimitated the royal land from agricultural land and will create property list recognized as land register which was used for property taxation.

At beginning of 20th century, at 1934 in USA, appraisal practice was officially presented as Municipal Finance Officers Association (MFOA). During the following years, because of the international recognition of that association, at 1959 the name and the legal frame were changed into International Association of Assessing Officers - IAAO2. One of the main goals of this organization was constant educational development of own members and offering professional service to clients world wide. IAAO had set up the valuation administration and standards which were publicized as articles in their monthly newsletters and later on at 1965 were published as Assessor’s Journal. On one of their work shops, at beginning of 1980’s, they had introduced the Computer Assisted Mass Appraisal (CAMA) strategy, which had resulted with great interest by the members and international appraisal community.

Mass valuation as strategy is very complex and takes time & money and represents a whole system for its self. It is legally framed and technically utilized, for achieving more accurate and reliable results - assessed value. Methods for assessment of properties remain the similar during the years. Modifications and combinations

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2 “IAAO’s 70th Anniversary
between methods are done because of real estate market differentiations in each
country and lack of information’s about real estate transactions.
The first modifications, improvements and accelerated development of Mass
Valuation starts at beginning of 1950’s with introduction of computers as the best
technical support for such process. At that very beginning computers were technically
undeveloped, massive objects with slow and limited performance. But as we are
aware of IT development, computers took the leading role in all areas of human
existence. Evolution of computers in mass appraisal process resulted with reliable,
accurate, effective, graphically oriented software applications which are part of
CAMA system.

**3.1. Evolution of Computers in Mass Valuation**

<table>
<thead>
<tr>
<th>Decade</th>
<th>Description</th>
</tr>
</thead>
</table>
| 1950’s | - Computer slow and unreliable  
- Used for assessment roll processing and billing |
| 1960’s | - Speed and reliability improved  
- Used for data storage and cost calculations |
| 1970’s | - Main frame computers common  
- Mass appraisal software commercially available  
- Computers used for market analysis and multiple regressions |
| 1980’s | - Speed and reliability further improved  
- Micro computers introduced  
- Most jurisdictions using computers |
| 1990’s | - Software proliferates – highly effective  
- Hardware very affordable and personal computers very powerful  
- Extended applications, such as field computers, video imagery and GIS  
- More complete integration with administrative and LIS  
- Networking of personal computers and internet applications |
| 21st century | - Computer’s speed and liability rapidly improved  
- Nano technology introduced  
- High speed necessary networking between relevant institutions  
- “User friendly” oriented CAMA systems |
3.2. Purpose of Mass Valuation

Ever since, the mass valuation was created purposely to estimate property value which will be used as property taxation base. But during the years and development of global economy, mass valuation product, assessed value, is used on national level not only for property taxation but for many other taxes such are inheritance & gift tax, wealth tax, stamp duty and tax which is tightly connected with purchase or mortgage of real property. On local level assessed value is used for shares & cost distribution between property owners for maintenance and operating of common facilities, urban planning and development and should be used for many other purposes such as banking, trading etc.

3.3. GIS as tool for Mass Valuation

With rapid IT development, at beginning of 1990’s GIS was introduced, implemented and developed in field of valuation. As result from preliminary and main studies from 1993 in Sweden, suitable technology was chosen deliberately to set up standard value maps for general property assessment. Main frame for digital map data base was established based on topographical maps on scale of 1:50000. ARC-GIS was software solution which was recognized as the most effective and reliable product. In Sweden there is a well developed CAMA system known as ADBTAX which enable market analysis and analysis of comparative purchases. Test valuation is middle process which is done for calibration of the system its self. ADBTAX is capable for sorting and excluding out irrelevant purchases. Following the price trends and confirming the final price level in a special area is powerful function of Swedish CAMA.
4. VALUATION APPROACHES & METHODS...

Within Mass Valuation strategy, there is no particular, specific or unique method for assessment. It is usually mix of single valuation methods adapted to real estate market conditions of the country.

In Swedish mass valuation strategy, it is defined and prioritize sorted by the law that first valuation approach is Comparable Sales, second one is Income and as final is Cost approach. In mass appraisal practice we can recognize several methods which are used according to pre-recognized valuation approach. Each method refers to specific valuation approach. I took under consideration 2 most commonly used valuation approaches and I will notice which valuation methods are intersected.

4.1. Comparable Sales Approach

This approach is basically a process of comparing similar properties that have been recently and officially transacted on the open market, under certain conditions. This approach is applicable to all types of real property only if there are recent, adequate and reliable transactions on the market.

This approach requires previous analyzing of market, neighborhood and targeted subject properties. Main advantage is that, if the appraiser is experienced enough he/she can use this approach as shortcut valuation process. Also, if comparable properties have the same facilities and services, they can be used directly with very small or not at all adjustments on their price. From the other hand, this approach have a big disadvantage (especially in transition economies), because the real estate market is weak and there are lack of officially registered property transactions.

Generally speaking, there are several steps in comparable sales approach:

1. Research recent sales
2. Analyze the sales
3. Adjust for differences
4. Arrive at value estimate
Elements of comparison among the available properties are

1. Real property right
2. Financing terms
3. Conditions of sale
4. Expenditures after transaction
5. Market conditions
6. Location
7. Physical characteristics
8. Economical characteristics
9. Usage
10. Non-reality component of value

Most commonly used methods by Comparable Sales Approach are:

1. Area method, where properties are similar between each other and are located in the same close area. In this method we make adjustment over date due to economical change.

2. Assessment value method is method which is containing information about assessed value from previous official assessment.

4.2. Income Approach

In the income approach we analyze the capacity of the property to generate future benefits and to capitalize the income into an indication of present value. Any property which generates income can be valued by this method. By default, properties which generate income are: multiple residential units, commercial and industrial buildings, stores, offices, shopping centers, hotels etc.

Methods which apply on this approach are Discount Cash Flow and Direct Capitalization Method.
1. Discount Cash Flow (DCF) analysis is appropriate for any pattern of regular or irregular income\(^3\). This method clearly indicates the future incomes and costs, which will provide a general idea for the investor. Investor makes forecast and relies on DCF, especially in multitenant properties such as shopping centers and office buildings.

2. Direct capitalization method is used in income approach purposely to project a single year’s capital income into an indicator of future value. This method is not used as referent on because do not consider more market changes information.

**Chapter 4 conclusion**

As conclusion for this chapter, I’ll notice that Comparable Sales Approach is the best strategy that so far is developed in field of valuation. All methods can intersect this approach and can be more effective, accurate and reliable. In both, concepts of Taxation & Balance Sheet, Comparable Sales Approach has the highest priority before Income and Cost approach... but...

... because lack of company’s internal financial information’s and transactions on market, DCF can not be used in taxation purposes...

... however, for balance sheet purposes, estimation of real estate assets value is firstly based on Area Method, Assessment Method and Direct Capitalisation Method as aid in cross checking the variation in the estimated market value based on those methods... later on, Discount Cash Flow takes place for detail scan of real estate’s economical reality...

...so, all above clearly blink, that CAMA system, only need, all reliable and applicable information’s which had projected total economical reality of the real estate...

\(^3\) Statement on Appraisal Standards No:2
5. **SWEDISH REAL ESTATE TAX ASSESSMENT...**

Present time! Real property assessment system in Sweden is centralized but cost-efficient. Data’s is collected, analyzed from official registers and by the official authorities. The assessment as process is represented by uniform CAMA system. All activities are transparent and rely on several levels for testing and double-checking.

Since the beginning of 80’s there has been a continual, periodical national wide tax assessment of property in Sweden. Particularly in 1979 a special Law, the Real Property Assessment Law (FTL) was introduced for estimating assessed value for taxation purposes. This law was used for the first time in 1981 for the general assessment. In this law is clearly projected that:

"The assessed value is based on its value on the open market and represents 75% of the market value during one specific year, known as reference year"

Main players in assessment process are Swedish National Tax Board (NTB) and National Land Survey (Lantmäteriet) together with support from valuation experts of private sector.

Generally elaborated, Tax assessment in Sweden is cyclic process which is done schematically as follows:

- General Assessment is done every six years purposely to analyze real estate market and to indicate what changes in valuation zones or indexation need to be done, after previous general assessment.
- Simplified General Assessment take place three years after General Assessment, purposely to make test on valuation model within CAMA system.
- Special assessment can be done suddenly every year as result of newly erected building or if new settlements are developed etc.
According to the latest update of Fastighetstaxeringslag\textsuperscript{4} (1979:1152) regulations and schedule of general & simplified assessment are projected as follows:

Section 7; General assessment of real estate.

Beginning in 2003 and continuing in 6 years cycle, general assessment for single family houses.
Beginning in 2005 and continuing in 6 years cycle, general assessment for agricultural units.
Beginning in 2007 and continuing in 6 years cycle, general assessment for industrial, commercial units and apartment blocks.

Section 7a; Simplified assessment of real estate.

Beginning in 2004 and continuing in 6 years cycle, simplified assessment for commercial properties.
Beginning in 2006 and continuing in 6 years cycle, simplified assessment for single family houses.
Beginning in 2008 and continuing in 6 years cycle, simplified assessment for agricultural units.

From the regulations above we can notice that practically there are assessment activities every year which are divided according to their category and type of tasks. We can also notice that between general and simplified assessments (and vice versa) there are 3 years period for setting and executing sub processes.

General assessment process is divided on two sub processes, preparatory work and execution of assessment.

Lantmäteriet is responsible for preparatory work as base of General Assessment. Tasks which are fulfilled in this sub process are: collecting and analyzing sales price,
property transactions, market data collection, developing CAMA system, upgrading valuation model and tables, producing valuation maps etc.

Future execution of assessment calculations is based on value zones. The point of value zone is that there is one base value for one value zone. These value zones are represented on valuation maps which are created separately for each category of real estate.

As already initiated, real properties are categorized with idea to make the cyclic assessment process simpler and to distinguish properties for different use. So today we can recognize several categories of real properties.

<table>
<thead>
<tr>
<th>CATEGORIES</th>
<th>No: of taxation units</th>
<th>No: of sales per year</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Agricultural &amp; forest units</td>
<td>366000</td>
</tr>
<tr>
<td>2</td>
<td>Single family house units</td>
<td>1699000</td>
</tr>
<tr>
<td></td>
<td>Summer house units</td>
<td>600000</td>
</tr>
<tr>
<td>3</td>
<td>Apartment block units</td>
<td>128000</td>
</tr>
<tr>
<td></td>
<td>Commercial units</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Industrial units, power plant, other</td>
<td>162000</td>
</tr>
<tr>
<td>5</td>
<td>Special units which are exempt from taxation</td>
<td>84000</td>
</tr>
<tr>
<td></td>
<td><strong>TOTAL</strong></td>
<td><strong>3039000</strong></td>
</tr>
</tbody>
</table>

*Results from 2008 assessment, source Lantmäteriet*

Commercial and Industrial units together with apartment blocks are valuated as a group, “commercial properties”, every three years. Main reason for grouping these categories is that they are profit generators. According the results from 2008 assessment, in Sweden there is 3390 value zones for this group of properties. 1910 value zones apply for commercial real estate & apartment blocks and the rest of 1480 value zones apply on industrial real estate.

Schools, hospitals, churches and some others socially oriented properties are excluded from taxation process.

During the preparatory work, because lack of information’s from official property transactions, according vacant space and rent price, additional forms are sent to the
owners of commercial properties. Main reason for this is that rent price is “key factor” for estimating Net Profit of commercial property.

Swedish CAMA model relay on comparable sales approach as primary strategy. The effectiveness and precision is in tight correlation with number of officially registered transactions on the open market. Method for assessing commercial properties is based on the Gross Income Multiplier. As part of preparatory work, analyzing real estate market refers on examination of property transactions and reported rents and vacant space by property owners. As result we have GIM which future on will be used for assessing properties.

Property transactions such as heritage or gifts are not taken under consideration. After data collection and analyzing, test valuation take place within main reason to calibrate the valuation model and to initiate the necessary adjustments in valuation zones, if there are any!

As main factors / criteria for valuation of commercial properties are:

    Ø For land
    - permitted land use
    - development rights
    - location

    Ø For building
    - gross rent
    - ownership & other rights
    - Age
    - Location

When its matter of property taxation, it has to be mentioned that tax rates are purely political decision. In 2008, tax rates for commercial properties are divided according each category:

- apartment blocks…..tax rate = 0,4%
- commercial units…..tax rate = 1,0%
- industrial units ……tax rate = 0,5%

Swedish real estate market is very stable and have tendency to increase. This declaration is supported by the fact that total number of taxation units in 2007 is 2,955,557 and in 2008 are 2,979,170. Referred assessed value of Swedish real estate market for 2008 is 4,896,924 mil SEK
5.1. Regression Analysis

Mass appraisal process begins and relies on powerful mathematical technique, Regression Analysis. Regressions analysing helps to estimate or predict the most probable value of dependent variable by analysing the observed, measured independent variable or variables. When its matter of real estate valuation, there are many independent variables which are describing market itself and projecting property’s internal and external characteristics such as: sale price, living area, building age, utilities, number of rooms etc.

Multiple regression analysis is a mathematical technique which is widely spread among economic and financial circles for various purposes such as estimating assets value, shares value, company’s returns\(^5\) value etc.

As already mentioned, using comparable sales approach, directs the CAMA system to operate with a large quantity of data’s which are levelled according several criteria for location, rent price, age etc, so than the basic request for more accurate regression results is fulfilled “more transactions more accurate model”

It has to be mentioned that regression model is more or less the same for all types of real estate. Main difference is that for some more complex properties such as industrial, more variables are considered.

General multiple regression analysing formula is:

\[ y = a + b_1x_1 + b_2x_2 + \ldots + b_nx_n + e \]

\(y\) – is dependent variable, in case of valuation it’s a market value / price of transaction
\(a\) – is intercept parameter, constant number
\(b\) – are slope parameters, constant numbers
\(x\) – are independent variables represent real estate & market characteristics such location, size, age etc.
\(e\) – is random error it’s practically adjustment to the model if we have lack of information about some others independent variables

\(^5\) Study of Swedish market between 1985 and 2007
All of these independent variables, parameters represent different types of characteristics which can not be grouped, measured under same scale. Philosophically speaking, operating with different kinds of variables is the power of regression analysis as tool.

Multiple regression technique recognizes four basic categories of variables represented in forms of scales: rational, interval, ordinal and nominal scale.

**Ratio scale**; most familiar terms which are represented by ratio / quotient scales are length, area m², volume etc. My simplest elaboration for this scale type will be: “Subjects are represented with numbers and ratios/differences between the numbers reflect the differences/ratios within the subjects. This scale is characterized with an **absolute zero**.”

**Interval scale**; most familiar terms which are represented by interval scale are temperature in degrees Fahrenheit or Celsius, calendar date, air pressure etc. In the same sense like previous explanation of scale type: “Subjects are represented with numbers and differences between numbers reflect the differences between subjects”.

**Ordinal scale**; most familiar terms which are represented by ordinal scale are hardness of steel column, quality of material, grades for academic performance (A, B, C ...) etc. So the explanation of this scale type will be: “Subjects are represented with numbers in particular order. Such order of the numbers reflects an order relation defined on the subject”.

**Nominal scale**; if we consider the certain variables such are: numbering of football players, terrace house, multifamily building etc, we can easy conclude that there are no differences between variables in terms of higher/lower or good/bad. “Two or more subjects can be assigned the same symbol if they have the same attributable value”
Chapter 5 conclusion

It’s easy to conclude and describe that Swedish Real Estate Taxation System is very developed, technically prestigious, supported by the Law and produce reliable information which can be - has to be used in all spheres of economical life purposely to secure stable real estate market.

Today, in such technically developed period, running of multiple regression analysis is very easy and simple process. We can recognize several software applications like MS Excel, SPSS and many others.

I’ll make hard notice that collecting of information’s and setting them in appropriate order is the key for having quality multiple regression output.
6. VALUE CONCEPT...

Before I continue with detail elaboration of real estate mass appraisal, I would like to make a snapshot, little overview of value concepts. Main reason for this is my technical and engineering background which directs me to conclude that one real estate is physically characterised with exact location, shape, dimensions, quality etc. and it’s not normal, insecure and irrational to have a “palette” of market values for that same object, depending only from which purposes that value is estimated for. Again why? Because using different “prisms” within valuation process, we’ll make the market to be weaker and tectonic movements will be repeated as we are all witness of. That’s why one crucial question I’ll ask:

Why don’t we have/propose a central & unique source, system for determining one market value under the same value concept for all purposes?

… yes I know that in capitalistic society, market value depends and follows the demand & supply link but that is the weak point that I indentify in the system. It’s a proven fact that the market itself can also have negative rapid oscillations - collapse.

… just to be mentioned… at the moment in valuation practice we can recognize several value concepts such as: Individual investment value, Mortgage lending value, Long-run market value etc… common for these definitions is that they are base on predictions for future returns and kind of long-term sustainable aspects of subject property…exactly this value concept approaches are resulting with pumping up market value of the property and causing unstable real estate market.

… another interesting fact is that when its matter of banking purposes, estimating of real estate value is based of risk that bank’s take over in act of borrowing money to the client. So their calculated value does not represent the market value of the property.
6.1. Reference Value Concept

I will strongly support Reference Value Concept - RVC that professor Hans Lind explained as a possible strategy, because it was recently demonstrated that is highly risky to pump-up the value of commercial real estate based on prediction for the near future or even worst, for the long run.

Developed by purely physic’s phenomenon, chaos theory is very strong explanation that Lind’s recall on, appointing on great distortion on whole system from small changes of only one variable.

Reference Value Concept indicates that it’s so easy and much safe to estimate value of a commercial real estate based on past incomes and costs. Such approach of estimating real estate value is used in taxation assessment. At that time and even today, this approach was in fact forced by the reality that public sector, Lantmäeteriet, has lack of available information’s about real estate transactions and investments. In that direction, while introducing Reference Value Concept, Bo Nordlund asked the crucial question: “Does, for instance, the market value of an asset give the relevant information required?”

So in the same direction, I can freely propose that assessed value for tax purposes, which is product of a system represented by state authority, supported by the law and use a reference value concept for considering the facts from the past, should be used for any purposes. I will also add, if we consider the fact that assessed value for taxation represents 75% of market value, then it’s much easy to calculate the market value or vice versa which’s one of the basic ideas in reference value concept.

My contribution on this phase, is that, I’m supporting the explanation that of RVC shouldn’t be “true” or “correct” at the moment, but I’ll add on this that RVC should be consider as basic approach in assessment processes no matter for which purpose.

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6 Hans Lind 2003
7 Bo Nordlund 2008
6.2. Crucial point of RVC

Reference value concept is determined as value that rational investor should arrive at if he/she assumed that the future would look like past:

- Future cash flows (rental incomes, operating and maintenance expenses, etc) would be like those of the past.
- Cap rates and discount rates would be like average cap rates and/or discount rates in the past.

![Graphic of secured path line of value - RVC](image)

Crucial point of Reference Value Concept that professor Lind initiated is that strong argument are needed to believe that future will be much different from the past than to believe that future will be much more like the past.

These kinds of arguments will contribute on more transparency of valuation process its self and more accuracy within financial reports, statements. But!, ... crucial point is to determine at which point of time reference value concept will begin. How much backward should we consider the value change? Should we consider the factors when the market value reach the maximum or when collapse?

Any way, Reference Value Concept is designed to achieve value which doesn’t have to be “true” or “correct” for the moment of speaking, but to set point of time at which factor rates will be considered as referent one purposely to make stable market value, prevented of big distortions.
7. VALUATION MODEL

Mass appraisal model characterise itself with process of statistical analyzing on large number of transactions and market research, executed with MRA. Lantmäteriet has well developed system, strategy for valuation of commercial properties. Fundamental principle in assessment model is to determine “Level Value” which will be used as referent one in the whole process of mass valuation. This reference value is calculated for benchmark unit with classification of value factors. Basic approach in this process is to estimate value separately for building and land.

\[
\text{Land Value} + \text{Building Value} = \text{Assessed value}
\]

Several value factors are included while value is calculated

<table>
<thead>
<tr>
<th>Value factors for land unit:</th>
<th>Value factors for building:</th>
</tr>
</thead>
<tbody>
<tr>
<td>- location</td>
<td>- location</td>
</tr>
<tr>
<td>- type of use</td>
<td>- type of use</td>
</tr>
<tr>
<td>- size - development rights</td>
<td>- gross rent (rental area)</td>
</tr>
<tr>
<td></td>
<td>- age of building</td>
</tr>
</tbody>
</table>

Main value factor and first step in mass valuation is determining value zone. There are 1910 value zones in Swedish ADBTAX system for commercial properties. Zones are very different between each type of real estate. In case of commercial real estate the pattern of value zones differ from small, concentrated areas in central parts of cities, until large, wide areas in countryside’s. In process of general assessment, value zones are upgraded or even new value zones are created. This is mostly done in newly developed areas within cities, initiated by building new shopping centres.

Next high relevant factor is rent because it is base information for calculation the main denominator, Effective Gross Income, in mathematical formula for GIM. Rent factor is very specific because contain lots of information about way of payment, security, taxes, parking plats etc. and also enable us to estimate, predict vacancy losses.
Real time issues, particularly for tax assessment are vacancies of commercial real estate and registration of transactions. Such situation is created after July.1.2003 when by the Law Inkomstskattelag (1999:1229)-IL 25a kap.5§, it’s allowed to have official “kind of internal” transaction to sell business-related shares which are tax free. At the moment, It’s physically impossible to obtain and to have non-stop real-time update of information’s about vacant space, but the Swedish ADBTAX system has possibility to make adjustment on property value for vacancy losses, called as “unusual circumstances”

At the beginning of each year Skatteverket publish one handbook which contains methodology, formulas and factor tables for tax assessment.

This handbook tables contain value factors about many details such as: age, quality of the building, number of room, garage, quality of interior, type of use of the building, quality of the land and many other factors.

So, calculation of benchmark units for building and land is done separately with different formulas.

Calculation of benchmark building unit is done according following formula.  

\[ R = N \times H \times f \]

R = value of benchmark building unit,  
N = level factor for building ... HL=4, 0  
H = rent  
f = capitalization factor… HK-table

It's normal that calculated value can be very detail number so rounding of the value is done according following steps:

- Until value of 5 mil, it’s rounded down on 1000 SEK  
- Value more than 5 mil, it’s rounded down on 200000 SEK  
- Value more than 25 mil, it’s rounded down on million SEK

Calculation of benchmark land unit is done according following formula.

\[ R = V \times S \]

R = value of benchmark land unit  
V = value per sqm  
S = size of the unit ... HL = 700

---

8 Handledning för fastighetstaxering 2007
Rounding of calculated value for land unit is done according the same principles:
- Until value of 5 mil, it’s rounded down on 1000 SEK
- Value more than 5 mil, it’s rounded down on 200000 SEK
- Value more than 25 mil, it’s rounded down on million SEK

At the end ADBTAX system present all calculated results in forms of reports separately by county and in many other variations.

There is no written methodology how the commercial real estate should be valuated principally in case of balance sheet. It is a practice that big companies which own lots of real estate units, use services for assessment of these units from others specialized firm known as real estate consultants. These consultant firms uses known valuation methodologies and techniques, but assumptions and reverences for variables such as yield, inflation, rent etc. are influenced by client’s wish and as result there is an irrationally higher market value of the real estate.

Main idea for both cases is to develop, calculate Gross Income Multiplier from the market and to set it, as capitalization factor for future assessment of commercial real estates. Does not matter is it case of mass valuation or balance sheet, this GIM varies according location, type of property, age or condition, size and other such vital characteristics of commercial real estates.

Theoretically explained, relation among net income and market value of real estate is affected by four major factors:
- required rate of return, known as discount rate or yield rate;
- remaining economical life;
- rate of change in net income;
- percentage of income attributable to land;

The first factor, required rate of return play hard role in both concepts because can be setup monthly, quarterly or annually.
Chapter 7 conclusion

As conclusion for this chapter I’ll indicate that tax assessment, especially of commercial real estate is very dynamic process caused by lack of information’s according transactions. Market itself can be generally projected but the crucial info’s about real estate economical situation are much more available in process of assessment for balance sheet as internal purposes…

… from that point I’ll notice that assessment for balance sheet is done based on predictions and approach that the value of the real estate will rise constantly, purposely just to satisfied the will of the share holders.
In case of estimating market value of real estate for balance sheet purposes, GIM is calculated purposely to be shown how big ca be the variation of market value.

From the other side, taxation concept has very stable methodology of assessment based on researching the past cycles of the market, but it’s facing the reality of having limited information’s about transactions of commercial real estate.

From this chapter its easy to be noticed that location factor, within process of tax assessment is fundamental and have the same relevant weight in process of asset assessment for balance sheet purpose.
As it’s underlined by state sector, rent level is another crucial factor for tax assessment. Again, in sense of company’s financial snap shot, rent factor will very easy tell us does we have rent income in terms of current assets or we have to deal with liabilities which have to be fulfilling on short or long term period.
8. INTRO to BALANCE SHEET...

Main idea of this chapter is to notice and indicate necessary activities for better understanding of Balance Sheet as union of all fundamental information’s which reflect the real financial image of one company. Balance sheet represents financial reality of a company at particular point of time. It is very simple equation which shows relationship between assets, liabilities and equities.

\[ \text{ASSETS} = \text{LIABILITIES} + \text{EQUITIES} \]

As we can observe from equation above three basic elements should be explained, purposely to distinguish which information’s are contained.

Assets represents category of what company own in different formats. Speaking in that nature assets are divided in few subgroups such are:

- Current assets are category of assets which have a life-time of one year or less, originally created to be converted in petty cash or bank deposit very easy.

- Non-Current or Fixed assets, are total opposite of current assets and they have life-time more than one year and they can not and it’s not recommended to be converted into current assets so easily. Such assets are divided in two groups:
  - Tangible assets such are land, buildings, machinery, technical equipment etc.
  - Intangible assets are licences, patents, copyrights, reputation of company, skilled management, human resources, franchise etc.

Liabilities represent financial obligations of the company, with other words what company owes to outside subjects. Also identical like assets, liabilities can have long and short life-time.

- Current liabilities are financial obligation which company has to fulfil within period of one year or less.

- Long-term liabilities are financial obligations and debts that have to be paid by the company on long term period.

During reading the balance sheet, we can notice that there is on key point for checking company’s operating capabilities. That amount is widely known as Net Working Capital and represents difference between current assets and current liabilities.
The last term, equity, most often apply on shareholders equity which is the primary investment to start a business, or latter on selling shares on stock market. Mathematically elaborated, company’s equity is amount which came from decreasing total net working capital and non-current assets, for amount of long-term liabilities.

<table>
<thead>
<tr>
<th>Assets</th>
<th>dec-01</th>
<th>dec-02</th>
<th>change</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Current assets</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>cash &amp; securities</td>
<td>75</td>
<td>110</td>
<td>+35</td>
</tr>
<tr>
<td>Receivables</td>
<td>433,1</td>
<td>440</td>
<td>+6,9</td>
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<tr>
<td>Inventory</td>
<td>339,9</td>
<td>350</td>
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<tr>
<td><strong>Total current assets</strong></td>
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<td>900</td>
<td>+52</td>
</tr>
<tr>
<td><strong>Fixed Assets</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>property, plant, equipment</td>
<td>929,5</td>
<td>1000</td>
<td>+70,5</td>
</tr>
<tr>
<td>less accumulated depreciation</td>
<td>396,7</td>
<td>450</td>
<td>+53,3</td>
</tr>
<tr>
<td>net fixed assets</td>
<td>532,8</td>
<td>550</td>
<td>+17,2</td>
</tr>
<tr>
<td><strong>Total assets</strong></td>
<td>1380,8</td>
<td>1450</td>
<td>+69,2</td>
</tr>
<tr>
<td><strong>Liabilities and Equity</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Current liabilities</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>debt due within 1 year</td>
<td>96,6</td>
<td>100</td>
<td>+3,4</td>
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<tr>
<td>Payables</td>
<td>349,9</td>
<td>360</td>
<td>+10,1</td>
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<td><strong>Total current liabilities</strong></td>
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<td>460</td>
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<td>Long term debt</td>
<td>425</td>
<td>450</td>
<td>+25</td>
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<tr>
<td>Shareholders equity</td>
<td>509,3</td>
<td>540</td>
<td>+30,7</td>
</tr>
<tr>
<td><strong>Total liabilities &amp; equity</strong></td>
<td>1380,8</td>
<td>1450</td>
<td>69,2</td>
</tr>
</tbody>
</table>

<table>
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<tr>
<th>Other financial information:</th>
<th></th>
<th></th>
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</thead>
<tbody>
<tr>
<td>market value of equity</td>
<td>598</td>
<td>708</td>
<td></td>
</tr>
<tr>
<td>Average number of shares (millions)</td>
<td>14,16</td>
<td>14,16</td>
<td></td>
</tr>
<tr>
<td>Share price ($)</td>
<td>42,25</td>
<td>50</td>
<td></td>
</tr>
</tbody>
</table>

*(Sample balance sheet from “Corporate finance” pg – 786, figures in $ millions)*
8.1. Analyzing the Balance Sheet

The frame format of balance sheet can be horizontal (as shown on the picture above) or vertical, purposely to be broken on two sides which will represent “+” & “-” financial information’s. It’s very important for all balance sheet users to know how to analyse provided info’s and which the key points within balance sheet itself are, with other words how liquid, productive or profitable the company is. In many literatures this process of analysing is presented as Balance Sheet Ration Testing or Ratio Testing which will help us to ask right questions.

If we are interested of company’s capital we can easy calculated by subtracting total current liabilities from total current assets.

\[ 900\text{mil} - 460\text{mil} = 440\text{mil} \text{ Net working capital} \]

This equation is a true indicator of showing real time financial capabilities and does the company have strength for future operations.

There is a possibility where balance sheet shows equality between total assets and total liabilities but current assets are lower than current liabilities and in that case company’s capital is negative which means new loans for operating is needed or else!...but

Next key point for testing is company’s financial power / leverage. This ratio will help us to recognize does the company’s wealth is created by management operative and efficient capability to earn additional rate of return or they do it aggressively by financing their expansion with more debt. Basic Debt Ratio formula is as follow:

\[ \frac{\text{Total Liabilities}}{\text{Shareholders Equity}} \]

This formula show us that, as much lower the ratio is that much financially stable the company will be. If this ratio indicates that liabilities are several times higher than equities, we can conclude that company will not have the power to handle additional interest rates. This scenario will lead the company to bankruptcy, which would leave shareholders with nothing.
Other relevant ratio, known as **Current Ratio** represents proportion between current assets and liabilities. Both of these categories can be and will be executed within near future.

**Current ratio = current assets / current liabilities**

Quick negative change in this ratio is consider as signal for a problem, because most probably company has borrowed a big amount of money and had invested in short-term securities. If Net Working capital does not change but current ratio does then alarm is on. Having this example in mind it’s suggested to subtract all short – term investments & debts, when current ratio is calculated.

Taking under consideration the proportion between the most liquid assets and current liabilities, we’ll have summary measures of liquidity known as **Cash Ratio**

**Cash ration = (cash + short-term securities) / current liabilities**

If we add *receivables* to the formula above within nominator, new proportion will be created named as **Quick Ratio**. This way of calculation is only for shareholders interest because receivables represent customer’s bills which are not paid yet.

Be side the Balance Sheet, It’s very necessary for any investor to get familiar with two others fundamental financial statements, such as Income and Cash Flow statements, which represent the true financial reality of a company.

These statements consists relevant and detail information’s about **Gross Income**, **Net Income**, **Research & Development Expenses**, **Capital Expenditures** and **Taxes**.

When it’s matter of investment analysing, we can recognize several other ratio groups as part of quantitative analysis purposely to test liquidity, efficiency, profitability and market itself. I will mention that these ratios all over the literature have a bit varieties in their names but the reason and setting formulas are the same.

As short conclusion for this chapter I want to appoint on efficient functionality of Balance Sheet as table structure which can produce vital financial picture only by using simple mathematical equations based on economical philosophy (one hand – other hand). The key point is that, financial picture will be less-blurred if real estate assets are estimated more rationally without satisfying client’s wishes for bigger value.
9. CONCLUSION...

... MASS VALUATION intersects with BALANCE SHEET

I find out that there are an Intersection points with in real estate valuation purposely for taxation and balance sheet, as concepts. This thesis elaborate that both of these concepts apply on different environments but with one same characteristic, which is a big number of subject units. From one hand mass valuation for taxation purposes, estimates value of a large number of real estates. From the other hand one conglomerate or other nationally wide company such as Ericsson, Statsoil, Ellite hotels etc. also owns a big number of real estates, which has to be presented in their financial reports with estimated value.

I determined that there are several basic intersection points between concepts of taxation and balance sheet:

1. In Sweden it is written regulative that mass valuation for taxation purposes has to be done on periodical cycles every 3 years. On the other side, balance sheet is a financial statement which, also has to be done on periodical cycles, quarterly per year and includes estimated value of real estate assets.

2. Both of the concepts have a preparatory work, according assessment of commercial real estate, which includes analysing of real estate market: purchase prices, rents, inflation, net profit etc. All these information’s are derived from registered transaction, internally by the company in case of balance sheet, or from national registers in case of taxation assessment.

3. High-light intersection in both concepts is using the multiple regression analysis as technique and mathematical tool for estimating, predicting value of commercial real estate.

Strongly supportive information in sense that Mass Valuation as concept can be used for Balance Sheet purposes, is that assessed value is guaranteed by the law and represents 75% of market value. Also, estimated value can be used in connection with banking, trading, marketing, urban development in a way of contributing to increase transparency of real estate market.

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9 Henrik Roos 2009
10. NEW PROPOSAL...

As I ended in chapter “Before I start”, my proposal is based on Swedish public &
private sector legal activities according valuation and taxation practice. In Appendix
of this paper you will face the real time information’s about differences in market
value that appears in valuation practice only because the different purpose of
assessment, for the same group of real estate.

On several occasions, all over my thesis paper I appointed and noticed on positive
sides and missing corners of valuation practice.
I know that the idea sounds strange! I’ll be happy if I’m the first to present, but I’ll be
happier if somebody else already did it. I also know that I want to present it.

I’m presenting the idea for creating one system which will produce one Official
Market Value for All Purposes. This concept will be based on estimating market value
of real estate according Reference Market Value definition. Assessment will be done
not under predictions for future incomes but according past incomes and costs of
particular point of time.

This system will be legally framed in public-private partnership and will be
represented by new institution, self financed agency. When its issue, how this
structure will be illustrated, I salute Magnus Svantegård\textsuperscript{10} believing that:
"Making processes in the real estate industry more efficient by making smart use of
Internet."
… I support virtual revolution …yes, and it’s also nice to be seen, physically, the
ambient from board of directors.

On public sector side I’m allocating Lantmäteriet, Skatteverket, Ministry of Finance
and all other authorities which has registered transactions of real estates. On the
other side, within private sector I’m assigning Bank’s, private companies, financial
consultants and all other associations which servicing, supporting and protecting
interests of real estate owners.

\textsuperscript{10} http://www.magnussvantegard.com/sa/node.asp?node=188
10.1. Structure elaboration It’s very simple.

Main argument, for positivism of my proposal I’m seeing it in following equation: PUBLIC vs. PRIVATE < (PUBLIC & PRIVATE or PRIVATE & PUBLIC), which means that any type of collaboration, cooperation, partnership etc between Private & Public sector is more productive than having opposition situation between them.

I’m visualizing my proposal in pyramid structure which will have vertical and horizontal entering points & filters, with one main purpose, to be a service to the client placed on the top of the structure.

FUNDAMENTAL LEVEL…This pyramid structure is constructed on fundamental base of official registers from private & public sector. Based on GIS’s principles all existed real estate registers which operating on the market such as cadastre register, tax register, internal banks registers, court registers, statistic register, municipalities registers, private sector registers etc. will input information’s in to one system, necessarily, to fill the gap of missing information about real estate transactions and economic realty. In fact, this fundamental level will be a storage room for all registers information’s.

- When its matter of info-transaction, these registers, they can be but doesn’t have to be physically connected. They can exist as they are at the moment but they will be obligated to prosecute “fresh” and all information’s for real estate transactions, no matter from which sector they are coming from.

- This fundamental level will secure the whole structure, in a way, which will delegate the technical development of the system as main condition for wining license in private sector and serving the CLIENT. Supply and Demand of information will be recognized in this level after passing vertical filter of management and quality control.

MIDDLE LEVEL... of the structure is operational one. Here, requirement and executions of valuation will be done according Reference Market Value – RMV. On this level, “quality control” will have the same weight as “law & technical” sectors. These sectors will determine approaches and methods for valuation of real estate. Requested execution for accurate and efficient valuation will depend on upload and download of information.
HIGHER LEVEL… of the structure will be representative and management one. 51% state capital vs. 49% private will be legal frame for the structure, (constitutional right of ownership will be protected, result 50%:50%). Main responsibility of this level will be to monitor all activities of levels under them but also to handle the selling activities, take over the risk from the operations and awarding the whole structure with gained benefit.

CLIENT… is the top level of the structure. At the same moment, it’s a key control factor and service demander. At this top level, client can be:
- company from private sector (demanding valuation for investments, banking or…)
- state authority (demanding valuation for taxation, planning or other need)
- individual (demanding valuation for private need)

10.2. Proposal’s Requirements and Effects

One crucial and critical requirement, for such proposal to be implemented, born, is Political and Business spirit for facing the reality of necessary changes within real estate market functionality. We are all witness that speculative orientation of the market leads to collapse, even for those who had benefited from speculations. This proposal, initiate future research of law regulations and introducing new Law frame which will be leaded by parole “securing & stabilizing real estate market”.
- New Law has to determine that assessed value from this system has to be used in all spheres of real estate market functions such as taxation, banking, urban development and with all other types of transactions.
There are will be huge palettes of benefits, valuation will be highly transparent and accurate. Real estate market will be stable and highly transparent. Product of this proposal will be unique and can be used for all purposes non matter for which sector are required.
I would love to speak and elaborate side effects and problems with this proposal but that is a kind of post processing research, which means that the proposal firstly have to be implemented, tested.
APPENDIX

As appendix of my thesis paper I’ll present a parallel analyzing of Lantmäteriet Mass Valuation Application and DATSCHA’s valuation product with representative sample of randomly selected commercial real estates. Both of the software are testing editions but operating with real time relevant information.

Short Introduction of DATSCHA AB

Before I start elaborating, I’ll point on functional sample of DATSCHA & Partners as fundamental puzzle within my MVAP proposal.

In format of meeting’s minutes, I would notice that working ambient within DATSCHA AB is highly professional, fulfilling the friendly environment. Meeting was open and directed towards debating ambient of over-viewing my thesis work. After that, I was introduced to DATSCHA AB service and product.

NEWSEC leadership felt the essentiality to expand their HR capabilities in to virtual space. Legally framed as DATSCHA AB, DATSCHA was born! It’s actually a web service, essentially created for real estate market research, supported by GIS solution for more efficient, accurate and flexible assessment of real estates. These separated companies are physically under same roof, which is normal, neutral and natural act. If later on, these units or any other operating on the RE market, legally and economically, merge to each other (which is possible and acceptable only for developing & securing the market its self) will be just contribution “YES” to my MVAP proposal.

DATSCHA existence and functionality, is respectable sample of functional partnership between private sector entities and state authorities, presented trough transparent cooperation with Forum, DTZ, Lantmäteriverket, Metria, SCB, UC and FastighetsSverige. As business strategy they have projected and devote their efforts for introducing efficiency, attractiveness and relevant role of real estate market within entire markets family. DATSCHA vision of their business activities is to be a virtual leader in development of real estate market for commercial & residential properties on national and EU level.
Both products are web oriented applications:
Lantmäteriet:  http://kaparen.lmv.lm.se:7779/forms/frmservlet?config=fft10_tst
DATSCHADA:  

Accuracy of the applications is supported by respectable amount of relevant information’s about real estate transactions from public and private sources. Selection of examined units was done randomly under one criteria: type code of real estate 321 (within Swedish real estate market, this code is representation of commercial real estates category, including apartments, offices and retail). Both applications have entering page with advance search option for market information, property units, owners etc.

As global rule in valuation practice, Comparable Sales Approach as strategy is used in both, state and private system. They are operating within each others data bases where real estate transactions are registered. Its Interesting detail of “valuation picture”, that, state is using private sector as checking tool in taxation process and private sector is using public registers as relevant data base, but still both sides are missing information for their purposes and making the real estate market unstable.

State’s sector is suffering from lack of information about rent price and vacancy space and that’s why it’s forced to use GIM, Direct Capitalization as method for assessment. This method it’s much more reliable to be used, because it’s based on Reference Market Value philosophy instead of value created on future predictions. That’s why, while tax assessment process is in role, state sector is using services from private sector purposely to fill that gap of info’s about rent level and vacant space and to update value zone maps.
From the other, private sector’s side, we can face the reality that the most powerful, economical method for valuation, Discounted Cash Flow, is used for assessment of commercial real estate. Even this method, DATSCHA’s application had proved that can do Mass Valuation. Crucial, tricky point that I’ll refer on, is, using important assumptions, predictions for future value of variables such as inflation, exit yield, discount rate etc, on annual intervals for next 5 years and more. Flexibility, possibilities for adjustments of the both applications is result of knowing what customers need to do for better assessment of their real estate and which information has to be used for more accurate tax assessment.

Valuation process, in both sectors, is complex one and requires experience, technological solutions and time to be executed. Preparatory work, in sense of market research, site visits, over-view of transaction etc. is under default tasks which have to be fulfilled.

As conclusive recommendation that I would point on, as contribution for MVAP proposal, is using DCF as valuation method but without predictions and assumptions for future value of variables, but based on past values of those variables.
Test Results

Type code of real estate: 321
Number of subject units: 13

<table>
<thead>
<tr>
<th>Property</th>
<th>Municipality</th>
<th>Area m²</th>
<th>Estimated value* (kSEK)</th>
<th>Assessed value** (kSEK)</th>
<th>Theoretical Market Value (tax base + 25%) (kSEK)</th>
</tr>
</thead>
<tbody>
<tr>
<td>BECKASINEN 9</td>
<td>Linköping</td>
<td>2 069</td>
<td>7 543</td>
<td>12 842</td>
<td>16053</td>
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<tr>
<td>BJÖRREN 5</td>
<td>Karlstad</td>
<td>3 440</td>
<td>42 969</td>
<td>22 029</td>
<td>27536</td>
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<td>BUREÅ 2:11</td>
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<td>1 735</td>
<td>2169</td>
</tr>
</tbody>
</table>

* Assessed Value with DCF method by DATSCHA
** Tax base value, assessed value for 2008

This test just proves and confirms my statement of unstable real estate market. Red numbers shows main contrast because assessed value, tax base value, should always be lower than estimated market value and should represent 75% of the market value, as it’s written in the Fastighetstaxeringslag.
FOOTNOTES...

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jurnal "Fair & Equitable" july 2004

3, Statement on Appraisal Standards No:2 of the Uniform Standards of Professional  
Appraisal Practice addresses criteria for proper DCF analysis as well as unacceptable practice

4, http://www.notisum.se/rnp/sls/lag/19791152.htm

5, Marko Zivkovic & John Peter Vinnars  
"Expropriation of Minority Shareholders"  
(Study of Swedish market between 1985 and 2007)  
Master thesis in France - Feb, 2009  
http://www.uppsatser.se/uppsats/927c4fa417/


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