European Valuer

ISSUE N°27
SEPTEMBER 2022

TEGOVA
The European Group of Valuers' Associations

EDITORIAL

REAL ESTATE VALUATION

BUSINESS VALUATION

PLANT MACHINERY & EQUIPMENT VALUATION

PODCASTS

EDITORIAL #1

Parliament and Council set to roll back the Commission's CRR proposal enabling valuation by AVMs at origination with no valuer involvement

In October, in its Proposal for a Regulation amending the Capital Requirements Regulation (CRR), the European Commission amended Article 208 of the CRR thus:

EXISTING CRR

Institutions may use statistical methods to monitor the value of the property and to identify property that needs revaluation.

v

COMMISSION PROPOSAL

… institutions may carry out the valuation and revaluation of the property value by means of advanced statistical or other mathematical methods …

In the light of the full text of the article, there was still a valuer role in the review of the original valuation, but no valuer involvement was required for the valuation at origination.

Meanwhile, the European Parliament's Rapporteur, Jonás Fernández Álvarez, has reinstated the valuer at origination in his amendment to the Commission Proposal:

FERNÁNDEZ AMENDMENT 199

… institutions may carry out the ***monitoring*** of the property value ***and the identification of immovable property in need of revaluation*** by means of advanced statistical or other mathematical methods …

The Council of Ministers hasn't yet drafted amendments to that part of the Regulation, but we hear that only the Dutch government has defended the Commission's Proposal. They may get help from some AVM-happy Nordic government, but salvaging the Commission's text would require far more support than that.

How did this happen? What caused this reversal? The valuation profession's white horse, the European Central Bank. It waded in with its own 'proposed' amendment to the Commission Proposal. Mr Fernández simply copy-pasted it.

"… the future is meaningful interaction between valuer and machine…"

The ECB's explanation for its amendment was trenchant:

"The use of statistical models should remain restricted to monitoring the need for revaluation. Institutions should not be allowed to exclusively rely on models for valuation of immovable property. Immovable properties in need of revaluation should always be evaluated by an independent qualified valuer.

…

Allowing statistical models also for property valuation and revaluation would imprudently allow institutions to never perform any actual revaluation of the pledged individual immovable property by an independent qualified reviewer. Lower own funds requirements for real estate exposures would exclusively rely on an institution's modelling, which could cause a significant gap in loss coverage should the modelled value not be realised when selling the specific immovable property in case of a default on the secured exposure."

These are early days. The ECB is not a co-legislator. Council has hardly begun, and in Parliament other MEPs may have made counter-amendments that we haven't identified yet, but successful opposition to the ECB seems unlikely. What politician will dare to contradict the ECB, the institution that does "whatever it takes" to safeguard the Eurozone financial system? Imagine a financial crisis caused by systemic bank failure originating in mortgage lending and valuation practices that the ECB had specifically advised against and whose advice was not heeded by those who govern.

Rollback of the Commission's proposed text and return to the existing CRR does not mean the triumph of stand-alone valuers taking sledgehammers to AVMs. Indeed, the ECB's explanation states that "Institutions should not be allowed to exclusively rely on models for valuation of immovable property." This means remaining with the fluid and variable status quo: valuer/AVM 'interaction' along the lines set out by the European Banking Authority and adhered to by EVS:

"The valuer remains responsible for the valuation, while the advanced statistical models should be used as supporting tools …"

EBA Guidelines of 29 May 2020, paragraph 210 (EVS 2020 EVIP 7, p. 288)

As so brilliantly posited by Małgorzata Renigier-Biłozor and Marek Walacik in "Valuers and AVMs – from adversaries to Dream Team" in the June 2022 issue of European Valuer, the future is meaningful interaction between valuer and machine enabling "the key emerging role of the qualified valuer in interpreting AVM results and complementing them with added analytical value addressing new market/client trends and needs."

The EBA Guidelines, the ECB and the likely emerging CRR foster this, but member state governments and bank regulatory authorities will have considerable latitude to get the valuer/AVM balance right … or wrong. See the fascinating description of how the Dutch are dealing with this in the article by Rolph Limpens in this issue.

EDITORIAL #2

The Green Deal buildings legislation is starting to gel, and it's going to deliver

The various European Green Deal laws won't be on the statutes until next year, but the legislative process is far enough advanced to see the contours of the final deals between the Council of Ministers and the European Parliament.

Buildings will be impacted by many Green Deal laws, but two are decisive: the recast of the Energy Efficiency Directive (EED) laying down the energy efficiency renovation requirements for the public building stock, and the recast of the Energy Performance of Buildings Directive (EPBD) setting minimum energy performance standards for all buildings.

It is now clear that both recasts will deliver a step-change to the rate and depth of European building renovation. To understand why, it suffices to compare with the existing legislation:

The EED's Article 6 on the exemplary role of public bodies' buildings

Under the existing Directive, there is an obligation to renovate 3% of the central government building stock per year to an unspecified level of energy efficiency. No obligation for buildings rented by government from the private sector.

For the recast Directive, Council and Parliament still have to iron out many differences over detail, but their final positions going into the talks show that they are entirely agreed on the main elements:

- The obligation is now to renovate 3% of public bodies' buildings at all levels of government (central, regional, municipal).
- The renovation has to be to near-zero energy building (NZEB) level.
- Government tenants must negotiate with private landlords so as to aim for NZEB.

From the outset, this newspaper predicted that the EED would be decisive for the level of ambition for private buildings, because if the member states backed away from their obligations for their own buildings, that would have made it politically very difficult to impose a step-change in private renovation in the EPBD. Conversely, now that they have delivered for public buildings, the EPBD minimum energy performance standards seem secure, and it's just been confirmed.

The EPBD's Article 9 on minimum energy performance standards

Under the existing Directive, buildings undergoing major renovation have to have energy performance improvements, but nothing happens unless and until the owner freely decides to undertake a major renovation.

Under the recast Directive, Parliament and Council are working separately on absolute renovation obligations for owners, whether they are planning to renovate or not. they are planning to renovate or not.

Parliament is going with the Commission's Proposal for an absolute obligation to renovate the 15% worst-performing building stock (defined as energy performance certificate (EPC) 'G' level). But whereas the Commission proposed taking all 'G' level government and commercial buildings to 'E' by 2030 and all 'G' level residential to 'E' by 2033, Parliament's Rapporteur Ciarán Cuffe wants to take all 'G's to 'C' by the same dates.

Council has taken another path:

- **Non-residential buildings:** the 15% worst-performing buildings ('G' level) have to be renovated to a superior EPC class by 2030 and the 25% worst-performing by 2034, but it is no longer indicated to what EPC class.
- **Residential multi-apartment buildings with more than ten building units:** No threshold. Simply, a national linear trajectory for the progressive renovation of these buildings. But there is no harmonisation of the linear trajectory (apart from the linearity), so one member state can be more ambitious than another.
- **Single-family houses and multi-apartment buildings with ten building units and less:**

  If you stay in your house or apartment or if your children inherit it, there is no renovation obligation at all.

  But if you sell it, rent it, donate it (for instance to your children for inheritance tax avoidance purposes) or convert non-residential to residential, then the buyer, landlord, beneficiary of the donation or converter has to renovate to EPC class 'D' within five years of the sale, rental, donation or conversion.

  This has the political advantage of not having EU law impose immediate renovation obligations on citizens simply sitting in – or inheriting – their homes.

And both Parliament and Council have copy-pasted the Commission's additional Proposal of 18 May on mandatory rooftop solar installation by dates varying from 2027 to 2030 (see June 2022 issue of European Valuer).

Much is still in play. For the EPBD especially, there can still be significant changes in Parliament and Council. But the state of play points to an end game that will deliver an accelerated transformation of the European building stock in line with the Green Deal's objectives of net-zero emissions by 2050 and a 55% reduction by 2030.

Michael MacBrien, Editor

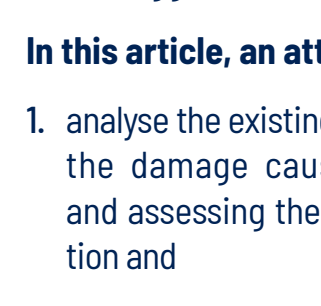
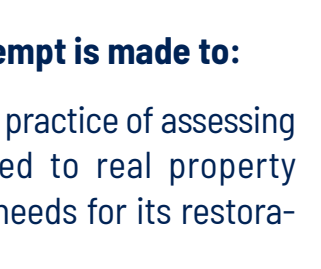
#01

The concept of gross development value in property damage assessment

The TEGOVA General Assembly in Lisbon on 7 May, 2022 unanimously supported the proposal of the Board of Directors to provide Ukrainian appraisers with assistance in developing a methodology for assessing property damage caused by the devastating impact of Russia's armed aggression.

In this article, an attempt is made to:

1. analyse the existing practice of assessing the damage caused to real property and assessing the needs for its restoration and
2. order the existing diversity of this practice by consistently applying the approaches to property damage assessment developed by the World Bank in accordance with the European Commission and the UN Sustainable Development Group's Joint Declaration on Post-Crisis Assessments and Recovery Planning.

Oleksandr Drapikovskyi *Iryna Ivanova*

According to World Bank methodology (Damage, Loss and Needs Assessment. Guidance Notes: in 3 volumes. Word Bank. 2010), the property damage assessment covers three consecutive steps:

1. assessment of direct economic losses due to destruction and damage;
2. assessment of indirect losses of the economy due to the interruption of business activities and additional expenses of the state, business entities and citizens;
3. recovery needs-assessment, which includes both the need to rebuild physical assets and additional business and citizen support programmes to restart economic activity.

Fulfilling these tasks should enable the obtention of objective information on the basis of which weighted decisions can be made regarding compensation for damages and the determination of financial resources necessary for the reconstruction of affected settlements and territories.

The assessment of damage caused to real property involves:

- recording the fact of damage;
- establishment of a cause-and-effect relationship between armed aggression and damage;
- determination of the extent of the damage in physical terms as mandatory prerequisites for establishing tortious liability.

Only after establishing the physical scale of the destruction, is it possible to proceed to the calculation of the real damage amount and of what in monetary terms is needed to restore real estate. At the same time, the property damage assessment must be evidential both in recording the facts and the extent of the destruction, and in relation to the valuation criteria on which the valuer will rely.

A literature review shows a certain common ground regarding the valuation criteria for real damages. This is, as a rule, the market value and the depreciated replacement cost, sometimes the book (historical) value. In any case, the monetary expression of real damages involves a comparison of the real property value "before" and "after" the damage. In the first case, the real property value indicator should reflect its actual condition at the time preceding the armed aggression, and in the second case, the change in this condition caused by the armed aggression.

'the property damage assessment must be evidential both in recording the facts and the extent of the destruction, and in relation to the valuation criteria on which the valuer will rely.'

At the same time, there is no such ambiguity regarding the criteria for assessing the needs. With the common view that the basis of this assessment should be the prices (costs) for the repair (reconstruction, restoration) of the damaged property, for the reconstruction of the destroyed property or for the purchase of a replacement for the lost property. Among the valuation criteria, the replacement (reproduction) cost in different variations - depreciated replacement cost, market value and gross development value – is proposed.

There are two points of view regarding the composition of reinstatement costs and their evidence base.

The first focuses on restored buildings and structures, limiting the costs of their replacement or reproduction (in particular, the fees of consultants, payment of commissions, financing, remuneration for entrepreneurial initiative, etc. are not taken into account).

In addition, according to this view, the evidence base for the amount of costs for the restoration of buildings and structures is cost estimates, which according to the International Valuation Standards and to the recommendations of the World Bank are considered to be not devoid of subjectivity and in need of checking for compliance with the expectations of market participants.

Proponents of the second point of view consider the restoration of destroyed buildings and structures as a special case in the restoration of real property as a whole. This view does not lead to the loss of any costs necessary for restoration. Regarding the volumes of these expenses, the evidence base is market data, which must be relevant to the valuation date.

In view of these valuation criteria, the methods used in the property damage assessment will come under the market and cost approaches or a combination of the two *(II. Valuation Methodology / European Valuation Standards. Ninth edition. 2020).*

Market comparison is the simplest and most transparent method, which is especially important for assessing the consequences of a disaster, the outcome of which will be presented to more than one intended user. Market comparison enables the valuer to obtain the market value of the real property (sales comparison method) and, if necessary, apply the contribution to this value of land improvements (extraction method).

Cost approach methods provide an idea of the amount of costs required to replace or reproduce construction objects (replacement cost method and reproduction cost method) and to replace or reproduce real property (depreciated replacement cost method). At the same time, the depreciated replacement cost method, based on market evidence of costs and depreciation, can indicate the market value of real property.

Methods based on a combination of market and cost approaches include the development method and the residual method *(II. Valuation Methodology / European Valuation Standards. Ninth edition. 2020).* In essence, both methods are based on the same valuation model reflecting the relationship between the price that can be obtained in the market from the sale of a completed development real property, also called the gross development value, and the costs of funds and time necessary for this development.

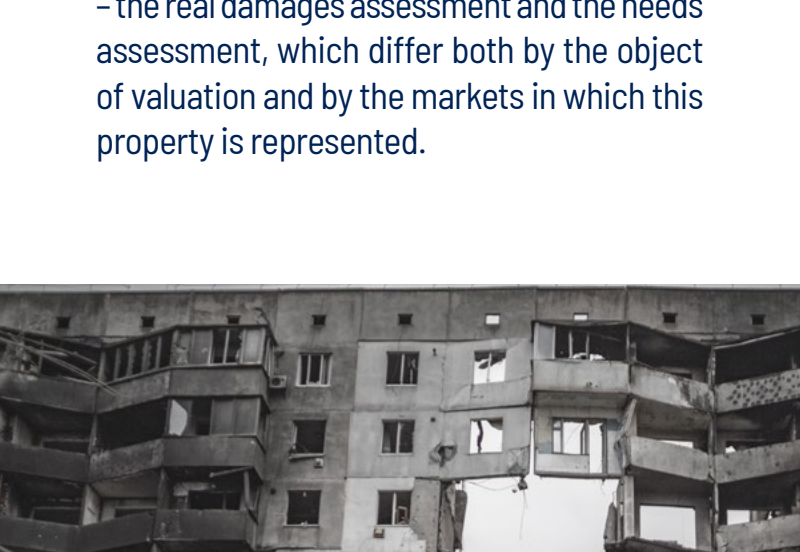
'The combination of elements of the market and cost approaches in one model has significant methodological potential for solving the problems of assessing property damage.'

The combination of elements of the market and cost approaches in one model has significant methodological potential for solving the problems of assessing property damage. The gross development value corresponds, on the one hand, to the price that can be obtained at the sale of the completed real property on the market, and on the other hand, to the amount sufficient to cover all the costs of acquiring a site and its improvement, including financial costs and development profit.

Conceptually, the gross development value provides an opportunity to build an expanded model of the market value of the completed real property in the context of the costs of its creation, which are justified from the point of view of market participants.

An acceptable valuation procedure for determining the gross development value is the compounded cash flow model, which is based on the principle of unreimbursed investment. In the framework of such a model, the gross development value is determined by the sum of the future site value and the future contracted works value, for the calculation of which a compound rate is used, the value of which is determined by the duration of real property development and ensures both the investor`s and the developer`s interest.

This model can be applied to solve two tasks – the real damages assessment and the needs assessment, which differ both by the object of valuation and by the markets in which this property is represented.



The real damages assessment refers to the property as it was at the time of the damage and consists of comparing the utility of the real estate "before" and "after" the destruction, that is, the main task of this assessment is to determine the value that was lost. Therefore, when assessing real damages, the valuer should not operate on costs, but should take into account the technical condition of the real property and the degree of suitability of its individual structural elements for further use.

The needs assessment refers to the object to be created in new market conditions in the context of real estate development, involving certain expenses of funds and time and requiring a review of the conditions of restoration with a view to comprehensive rebuilding according to the principle of Build Back Better, compliance with the requirements of energy efficiency and sustainable development legislation, as well as the effectiveness of institutional tools aimed at eliminating probable mismatches of supply and demand (III. Valuation and Sustainability / European Valuation Standards. Ninth edition. 2020).

In general, the application of the model for determining the gross development value as a basis for assessing the real damages due to the loss (the loss of control over property remaining in the temporarily occupied territory, currently estimated by the Ukrainian government at $118 billion just for Crimea), damage and destruction of real property and for assessing the needs for restoration of such property makes such assessments transparent and understandable for those who will rely on their results.

Editor's note

On 5th October 2022 at the National Science Academy in Kyiv, the Ukrainian Association of Bank Valuation Specialists and The Ukrainian Society of Appraisers will hold a European Valuation Conference on "The Impact on Real Estate and Valuation of Ukraine's EU Candidate Status".

TEGOVA Chairman Krzysztof Grzesik will give the keynote speech on "Ukraine's EU Candidate Status – Consequences for real estate and valuation".

Oleksandr Drapikovskyi REV is manager of the Center of urban land use economics and management, Ukraine; editor of the scientific and practical journal of the Ukrainian Society of Appraisers

Iryna Ivanova REV is deputy manager of the Center of urban land use economics and management, Ukraine; vice president of the Ukrainian Society of Appraisers

#02

The use of AVMs in Dutch real estate valuation – a complex and unstable pa

The Netherlands can be regarded as having a mature housing market with a large amount of publicly available data making it easy to generate automated valuation model (AVM) reports. Dutch lenders are pioneers in Europe when it comes to using AVMs in the process of granting individual mortgages.

R. (Rolph) J.L. Limpens

Introduction

Due to new legislation from the Dutch Parliament which was seeking to limit the costs of real estate transactions, from 2016, Dutch banks were able to grant mortgage loans on the basis of stand-alone AVM computations of value. The only condition was that the loan should amount to no more than 90% of the value computed by the AVM (90% loan-to-value or LTV)*. A full valuation continued to be required if a higher mortgage loan was sought or if a customer wanted a National Mortgage Guarantee (guarantee in case of loss of income or divorce), an option used by only a few banks and on a modest scale.

Desktop valuation

The situation has changed since the coming into force on 1 July 2021 of the European Banking Authority (EBA) Guidelines stating that a "desktop valuation" must be "carried out" by a valuer and "supported by advanced statistical models".

One Dutch lender, in collaboration with one particular AVM supplier, has developed a product for this purpose. The product, named 'desktoptaxatie' (desktop valuation) uses an AVM to determine a property's value. An appraiser then (briefly) examines it and either rejects or approves the AVM value.

This product has been adopted by most lenders in the Netherlands. Since 1 July 2021, the National Mortgage Guarantee scheme (NHG) has also accepted this product for loans of up to 90% LTV. The product costs EUR 85. The valuer is under no obligation to undertake an inspection, does not visit the property and does not need to be familiar with the area. The product is to be delivered to the applicant within two hours. Desktoptaxatie valuation is frequently used.

Office valuation

As a counterbalance to this product, the valuation and brokerage professional organisations NVM, Vastgoedpro, VBO and the Real Estate Valuers Register of the Netherlands (NRVT) designed a product that employs two AVMs. Within this product, the valuer has a duty of (partial) investigation, and must be familiar with the area, as is required for physical real estate valuations in the Netherlands. No physical viewing takes place with this product, which is to be delivered within two working days and costs approximately EUR 350.

This product is called an office valuation and is also suitable for lending with an LTV of up to 90%. In practice, office valuations are rarely employed.

Full valuation

In addition to these developments with regard to AVMs, NVM, Vastgoedpro, VBO, NRVT, lenders and NHG have seized the initiative to raise the quality of full valuations and improve the standards of property valuation professionals by initiating a process to broaden the scope of valuation report models. The structural component has been broadened in scope and an expanded energy section has been added, which means that the real estate valuation report now provides more information about the property's structural condition and energy efficiency, thus also lending more credence to the valuation.

The valuation report model uses reference properties identified by the valuer in addition to two AVMs (if available). Full valuation reports used for mortgage financing (mandatory above an LTV of 90%) have had to use this model since 1 October 2021, as agreed between the financiers and NHG.

Training in the use of the new model has been underway since October 2020. The training was followed by an exam, which real estate valuers needed to pass in order to be allowed to continue valuing properties from 1 October 2021 onwards. This model assesses and takes into account all relevant private law, public law and other legal aspects in the Netherlands. In addition, an onsite survey including both a structural inspection and the taking of measurements is conducted, along with a visual assessment by the valuer. Depending on the valuer and the size and location of the property, this product costs between EUR 650 and EUR 1,000. The valuation report generally then needs to be submitted to the Netherlands Housing Value Institute (Nederlands Woning Waarde Instituut – NWWI) for an additional check for lending purposes. The NWWI works with valuers who assess the report for consistency and plausibility.

> *'While the valuer is responsible for desktop valuations, he or she performs no substantive research and is not required to have any local knowledge.'*

Perplexities

A year after the implementation of both desktop and office valuations and based on experience garnered during that period, the Dutch professional organisations concluded that neither product meets the desired quality requirements. While the valuer is responsible for desktop valuations, he or she performs no substantive research and is not required to have any local knowledge. In addition, the desktop valuation is used for properties which it is not possible to value in this way, because non-public documents (such as the annual accounts of the owners' associations in the case of flats) play a role in the valuation.

A DESKTOP/AVM BLIND SPOT: THE DOCUMENTS OF APARTMENT OWNERS' ASSOCIATIONS

An apartment building is managed by the owners of the units in an Owners' Association (VvE in the Netherlands). The VvE has legal obligations such as drawing up a maintenance plan, saving for the maintenance and insuring the superstructure of the building. If no VvE is active, or if the VvE does not (sufficiently) fulfill its obligations, this will affect the value of the apartment, usually negatively, but sometimes positively, for instance when the VvE has more cash than needed for the maintenance plan.

If several apartments in a large complex have been sold in a short period of time, it can be assumed that the functioning of the VvE is included in the value. However, if it is a small complex with hardly any sales, then it is not known how the functioning of the VvE is included in an AVM. On the other hand, a valuer will always assess the documents of the VvE.

There is another problem with both products. Residential property valuers in the Netherlands conduct valuations in accordance with the European Valuation Standards (EVS). The valuation report model is fully compliant with the EVS. In the case of desktop and office valuations, the European Valuation Standards are largely ignored. The concept of value applied in the valuation report model is market value, in accordance with the definition of EVS, while the concept of value used in the desktop and office valuations (in the AVMs) is unclear, which is understandable, as the EBA Guidelines only refer to 'value' rather than to 'market value'. This immediately creates the first problem, because neither the EBA nor the EVS defines the concept of 'value'. So the question is: what is actually being determined?

It seems that any value will do. Nonetheless, if the valuer is required to confirm an AVM value, he or she has to compare the value to something and the sector and professional organisations take the view that the valuer should compare the value figure computed by the AVM to the market value, given that other definitions are lacking. And that is where things go awry, because a market value has to be determined and that can only be done according to the rules of the EVS. That means a full survey, local knowledge and inspection of the property.

The EBA guidelines make the valuer responsible for the value, regardless of whether it is determined by an AVM, yet the desktop and office valuations in particular give rise to the question of whether it is possible for the valuer to be responsible without very deep knowledge of the workings of the machine. At a very minimum, this will require a statement from an accountant or specialised agency to say that the model is reliable. The provision of such statements requires there to be an identical standard against which all model value providers are assessed. In the Netherlands, a large number of AVM suppliers are now working to establish a uniform evaluation framework, but, unfortunately, the supplier of the AVM for the desktop valuation* is not (yet) a participant in this process.

Actions and solutions

In the Netherlands, the NRVT (the valuer register) is working on a separate regulation to set out the role of valuers in checking and correcting or rejecting the AVM's determination of value. In order to limit the liability of the valuers and make it clear how the product was arrived at*, the desktop and office valuations will need to contain clear exemption clauses.

In addition, it is necessary to define all the various concepts of value, as well as making it clear what each value represents and how valuers should determine it.

Finally, it is recommended that valuers be given guidelines that set out what they should take into account in order to reach a correct, responsible assessment of the AVM's computation of value. These guidelines will be in the form of a framework and, given the differences in legal systems, may vary from country to country.

Conclusion

To define the situation on the ground in the Netherlands today as 'complex and unstable' is putting it lightly. Many uncertainties remain with regard to the concept of value, the duty of investigation and the valuer's responsibilities. The European Commission's Proposal amending the Capital Requirements Regulation's valuation provisions by replacing 'market value' with 'prudently conservative valuation criteria' may simply add to the confusion. And yet real estate markets and the valuation profession need clarity.

* The product must clearly state how it was created and what has and has not been assessed by the person ultimately responsible (read: the valuer). For example: It should be recorded that there has been no inspection of the property, no investigation of contaminated soil, etc.)

R. (Rolph) J.L. Limpens is Policy Advisor to Vastgoedpro, the Association of Real Estate Agents and Valuers of the Netherlands

#03

Derivation of interest yield (property yield) for the income approach

Bernhard Bischoff

Valuation can be so simple: The market value is the capitalisation of the property's rental and other income. EVS 2022 describes the Income Approach method:

The income method used within the Income Approach can be divided into two types of a model:

- Traditional income growth-implicit models, known as capitalisation methods, including direct capitalisation, term and reversion, layer (hardcore and top slice) and growth-implicit discounted cash flow models; and
- Income growth-explicit models usually known as Discounted Cash Flow (DCF). The main feature of the growth-explicit discounted cash flow method (explicit DCF) is that anticipated growth in income and costs is explicitly incorporated into the model by the valuer.

In many cases a simple formula is used:

$$MV = \frac{RE \times 100}{p}$$

with

- MV: Market Value
- RE: net profit in a year (income)
- p: interest rate

Certain problems are inherent to this kind of valuation:

- "Net profit" needs to be defined. It must be clear whether net profit is the actual income on the day of valuation, the typical market income based on actual rents or whether the net profit is based on other definitions.
- The gross annual income is needed so as to have the difference between gross and net income.
- This simple formula is suitable for an unlimited capitalisation, but valuation of properties requires calculation of the period of income.

In Germany a special kind of Income Approach method is used: The values for the building and of the land are considered separately, so in this model the income is earned from the building and the land is lost money. At the building's end of life, the land is ready for a new one and at this point in time the value of the land must be a part of the valuation. This model is set down in law in the German valuation regulation.

This essay contains the German formulas but without the special German criterion the formulas and the result are the same (simply by doing without 'BW'), so that the means to achieving a yield founded on property market results and based on real prices is the same.

The formula for the German method is:

$$vEW = (RE - BW \times LZ) \times KF + BW$$

$$\text{with } KF = \frac{q^n - 1}{q^n \times (q - 1)}$$

$$q = 1 + LZ \qquad LZ = \frac{p}{100}$$

- vEW: Income Approach value = Market Value
- RE: net profit in a year (income)
- BW: Value of the ground
- LZ : Property Yield
- KF: present value factor
- n: remaining life expectancy (useful remaining life)
- p: interest rate

The final result of every transaction is a price, enabling derivation of the yield describing this transaction. In other words:

The price a buyer payed is the market value. If all elements of the formula are known, it is possible to calculate a capitalisation approach for every transaction, enabling description and proof of a yield formed in the market. The capitalisation approach in the market is the average of all single values.

The formula shows the calculation:

$$p = \frac{RE}{KP} - \frac{q - 1}{q^n - 1} \times \frac{KP - BW}{KP} \times 100$$

- p: interest rate in %
- RE : net profit in a year (income)
- KP: purchase price
- BW: Land value without buildings
- q: 1 + 0,01 x p
- n: remaining life expectancy (remaining useful life)

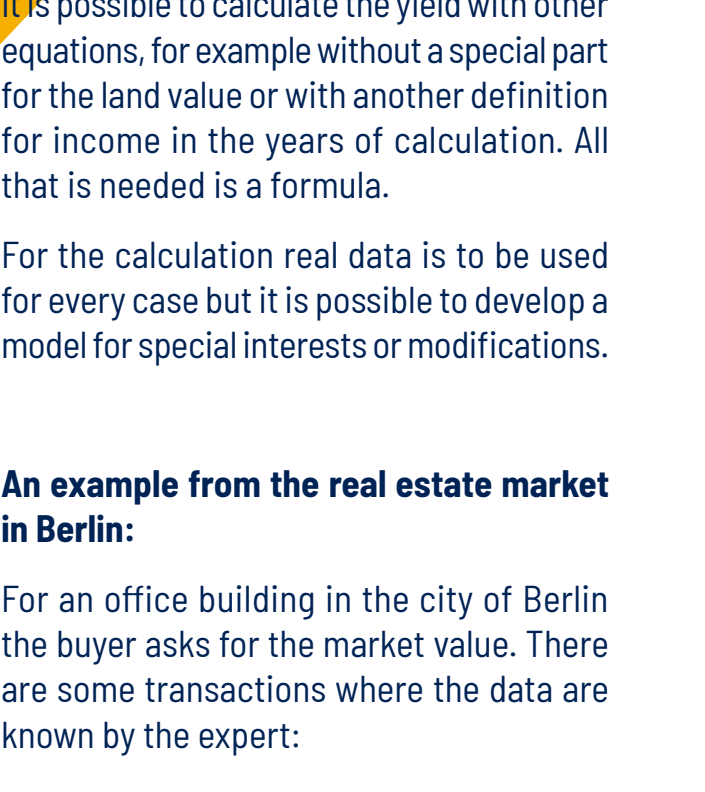
This formula contains a problem: The interest rate is part of the formula on both sides of the equation, so it is not possible to calculate the yield directly. But there is a way because this equation is an iterative algorithm. The solution is to calculate more than one step. For the first calculation the approximation is:

$$p_0 = \quad \times 100$$

The calculation is complete if the result and the approximation used are identical. Normally the iteration ceases in these cases after three to five calculations.

Proceeding this way with most or all transactions gives an overview of the real interest yield in the market and proof that the yield is based on transactions and not speculation. There are four steps to achieving this:

1. Establish the real process of purchase with all necessary data: prices, rents, costs, remaining life expectancy.
2. Calculate the interest yield for every comparison price.
3. The result must be an overview of property market interest yields.
4. The average of all transactions and their yields must be an interest yield made using a comparative method describing what the buyers and sellers arrange in the contracts.



It is possible to calculate the yield with other equations, for example without a special part for the land value or with another definition for income in the years of calculation. All that is needed is a formula.

For the calculation real data is to be used for every case but it is possible to develop a model for special interests or modifications.

An example from the real estate market in Berlin:

For an office building in the city of Berlin the buyer asks for the market value. There are some transactions where the data are known by the expert:

NO.	STREET	AREA	GROUND	GROSS ANNUAL INCOME	NET ANNUAL INCOME	RENT RESIDENTIAL	RENT OFFICE	PRICE	MULTIPLIER
		m²	€	€	€	€/m² month	€/m² month	€	
1	A	1.558	7.416.080					48.500.000	
2	B	1.134	5.660.928	889.176	711.341		17,48	20.700.000	23,28
3	C	1.909	4.390.700	1.255.843	1.004.674		13,81	18.150.000	14,45
4	D	3.695	19.130.680	6.123.890	4.899.112		22,27	116.724.860	19,06
5	E	4.460	4.906.000	1.905.426	1.524.341			33.000.000	17,32
6	F	4.437	44.591.850					112.000.000	
7	G	1.442	2.740.000					15.500.000	
8	H	1.344	4.717.440	1.216.293	973.034		16,51	17.975.000	14,78
9	I	4.179	3.309.768					24.925.000	
10	J	2.599	5.198.000	1.762.254	1.409.803	12,24	13,64	24.476.000	13,89
11	K	1.871	7.558.840	1.295.923	1.036.738	14,72	16,73	17.730.000	13,68
12	L	815	5.721.300	1.008.696	806.957	15,5	16,87	13.350.000	13,23

NO.	PRICE	INTEREST YIELD 1	INTEREST YIELD 2	INTEREST YIELD 3	INTEREST YIELD 4	INTEREST YIELD 5	INTEREST YIELD 6	INTEREST YIELD 7
	€	%	%	%	%	%	%	%
1	48.500.000							
2	20.700.000	3,436	3,058	3,000	2,991	2,989		
3	18.150.000	5,535	5,363	5,350	5,349	5,349	5,349	5,349
4	116.724.860	4,197	3,872	3,828	3,822	3,821	3,821	
5	33.000.000	4,619	4,339	4,306	4,302	4,301	4,301	4,301
6	112.000.000							
7	15.500.000							
8	17.975.000	5,413	5,237	5,224	5,223	5,223	5,223	5,223
9	24.925.000							
10	24.476.000	5,760	5,597	5,585	5,584	5,584	5,584	5,584
11	17.730.000	5,847	5,733	5,727	5,727	5,727	5,727	5,727
12	13.350.000	6,045	5,939	5,935	5,934	5,934	5,934	5,934
	Average	5,107	4,892	4,869	4,867	4,866	5,134	5,353
	Standard Deviation	0,925	1,025	1,044	1,048	1,048	0,782	0,575
	Coefficient of Variation	0,181	0,209	0,214	0,215	0,215	0,152	0,107
	Number	8	8	8	8	8	7	6

In this case the valuer now has an overview of the interest yield in the Berlin office building property market at the day of valuation after five iterations. Simple statistical calculations show a good yield under the income approach method.

Sensitivity Analysis

For experts it is interesting to control the result of the valuation and to describe what happens if the yield changes.

For this example, a sensitivity analysis was made to show how the result changes if the yield is changed:

NO.		1	2	3	4	5	6
Gross annual income	€	3.881.571	3.881.571	3.881.571	3.881.571	3.881.571	3.881.571
Net annual income	€	3.560.775	3.560.775	3.560.775	3.560.775	3.560.775	3.560.775
Capitalised income value (building)	€	62.889.992	73.729.806	66.245.719	59.762.680	54.119.484	44.846.331
Land value	€	11.925.647	11.925.647	11.925.647	11.925.647	11.925.647	11.925.647
Interest yield	%	4,25	3,5	4	4,5	5	6
Market value	€	74.815.639	85.665.453	78.171.366	71.688.327	66.045.131	56.771.978
Difference	€	0	-10.849.814	-3.355.727	3.127.312	8.770.508	18.043.661
	%	0	-14,5	-4,5	4,2	11,7	24,1

The table above clearly shows the big changes that a small correction of the yield produces. And a yield describing the real estate market is far superior to one that is untested and unproven.

"For experts it is interesting to control the result of the valuation and to describe what happens if the yield changes."

Summary

- For every capitalisation, each yield must be well justified.
- A small difference in yield has a big impact on the result.
- Every property valuation requires a correct and exact yield.
- The importance of this result is not limited to the income approach. It is equally valid for Discounted Cash Flow or other valuation methods with capitalisation.
- Experts and valuers can be liable for not getting this right in their reports.

Dipl.-Ing. Bernhard Bischoff REV is a publicly certified and qualified expert, publisher and author of German valuation standards work and lecturer.

#04

The business valuation challenges of war and sanctions

The war in Ukraine and the economic sanctions imposed on Russia have radically changed the environment for European companies. The consequences are not only higher prices for agricultural commodities, fertilizers and some industrial metals, of which Ukraine and Russia are the main exporters, but also disruptions in logistics and global supply chains, affecting the prices of a much wider range of industrial goods and services, and leading to extremely high inflation.

Ivars Strautiņš

Partly due to the EU's embargo on Russian energy imports, energy prices are the second major factor, negatively affecting almost all sectors of the economy except for the energy and mining sectors. The sectors most exposed to commodity price increases and supply chain disruptions are food and agriculture, machinery and equipment, chemicals and pharmaceuticals, automotive, transport and logistics, computer and electronics as well as optical products industries. The inability to fully pass on the increase in production costs to consumers reduces the profit margins of companies and increases the going concern risks.

Furthermore, consumer demand is strongly influenced by perception of how the conflict in Ukraine will evolve. As for many consumers, purchase of essential goods like food, energy, and transport could require a greater part of their disposable income, the opportunity to market new, higher-priced and optional products and services is decreasing. The stock market is characterised as a bear market, where most stocks continuously reach new lows. All this is a real challenge for the preparation of reliable business valuations.

The main guidelines for European business valuers – European Business Valuation Standards (EBVS) 2020 – lay down that before applying one of the relevant valuation methods, it is important to understand the subject business, its historical performance, core activity, capacities, customers and suppliers, political and macroeconomic environment (economy), specific industry and relevant market. The valuer needs to be aware of any changing cultural aspects, business trends, availability of debt and equity financing, the economics of supply and demand for the sector, as well as the extent and distribution of any actual or proposed competition, any possible changes in transport infrastructure, geographical location, or socio-economic profile of the customer base. Given the current challenges and diverse predictions about the development of the geopolitical situation and its impact on business, it is almost impossible to meet all of these requirements.

At the same time, it should be noted that EBVS 2020 is based on the best appraisal practices developed mainly during the previous 30 years of relative economic stability, but the current uncertainty about the future forces business valuers at all stages of valuation to apply not only judgement, but also creativity and flexibility. Much can be learnt from valuation practices during and after the 2008 financial crisis, as well as the recent Covid-19 lockdown, when business valuers had to find ways to deal with uncertainty and ensure the credibility of valuations . In general, periods of uncertainty impose certain limitations on the application of approaches that are commonly used in business valuation.

In the Market (Comparison) Approach, the valuation is produced by comparing the subject business with the evidence obtained from market transactions related to similar companies, either publicly traded (comparable) or private companies, that fulfil the criteria defined by the valuer. In the current economic climate, the stock prices of publicly traded companies in general are significantly lower than they have been over the past years, resulting in lower valuation multiples.

"In general, periods of uncertainty impose certain limitations on the application of approaches that are commonly used in business valuation."

Another problem is lack or inaccuracy of up-to-date transaction data as some transactions are results of previous long-term M&A processes (potentially deemed more feasible to go through with than to abort), but most of the already announced private company transactions are either delayed, or these transactions are executed under financial pressure.

Thus, the main limitation on the correct application of the Market Approach is the lack of reliable current data, and the valuer should be very careful when using and interpreting older market data, as these are unlikely to reflect the current market, making the reliability of the Market Approach under conditions of uncertainty in many cases questionable.

The Asset-based Approach provides an indication of value based on the valuation of all assets and liabilities of the business at the valuation date. Although, in general, the Asset-based Approach is not suitable in cases where the historical performance results are more indicative of the business value than the value of the net tangible assets used, the possible reduction of production and the increasing risk of recession can lead to cost optimisation, which requires reorganisation, sale of redundant assets or even closure of companies. In these cases, as well as for valuation of investment and real estate holding companies, the application of an Asset-based Approach could be justified. However, caution must be used to reflect the market value of said assets, taking into account recent high inflation, especially when there is uncertainty about whether the market exists.

The value of the business by the Income Approach is determined by capitalising or discounting the estimated future economic benefits to be derived from the business. The success of this approach is highly dependent on the predictability of future income streams, the risks associated with earning income, and the profit margins. Due to uncertainty about the future, historical business performance and trends, which are usually used as a starting point for forecasting, may prove to be poor guides, forcing valuers to rely heavily on management forecasts that, however, require critical review.

As the operations of most companies are affected, this almost precludes the application of the direct capitalisation method, which is based on historic development trends and stable growth expectations. While the discounted cash flow method better captures the impact of current uncertainty, the big unknown is the time period and level of earnings at which the company will return to sustainable, steady growth. As the duration and future of the war in Ukraine is very uncertain, the currently unpredictable development of the conflict may cause further changes in geopolitical risk and worsen the war's economic impacts. In addition, discount rates are usually based in part on historical data from public markets, which currently appear unreliable.

"While the discounted cash flow method better captures the impact of current uncertainty, the big unknown is the time period and level of earnings at which the company will return to sustainable, steady growth. "

Since the forecast of future cash flows or benefits depends on many variables, it is more useful than ever to model different hypotheses for the future development of the business depending on the expected changes in the critical variables affecting the business. Taking into account the currently unpredictable impact of external factors directly and indirectly related to the war in Ukraine, it is useful to develop several cash flow scenarios (e.g., the most pessimistic, most likely, most optimistic), each of which produces a different assessment, and present the conclusion as a series of values.

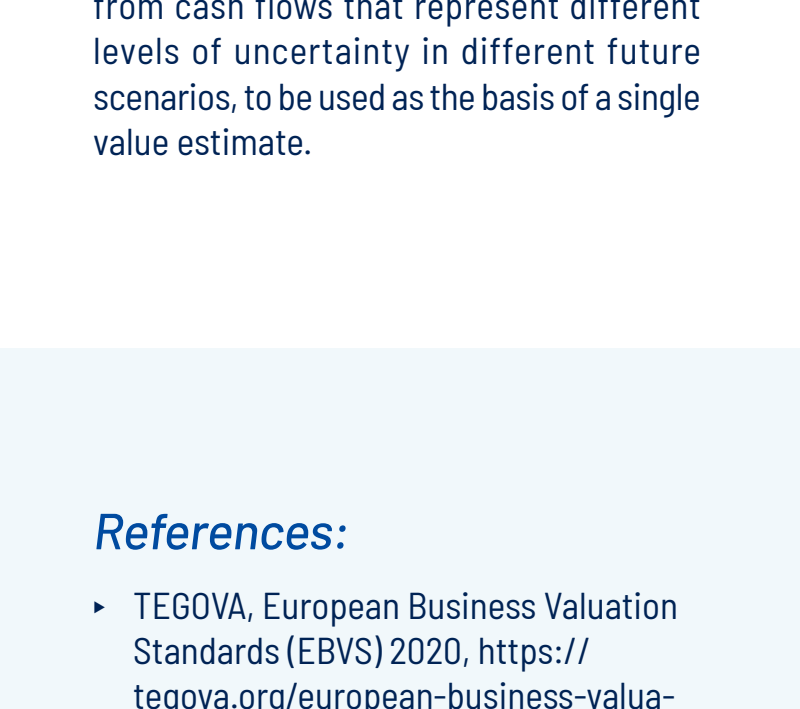
If the purpose of the valuation and the terms of engagement require that the valuation be expressed as a single value, the valuer must follow the EBVS 2020 recommendations on valuation under uncertainty, stating that if the final value is based on the income approach, in those cases where there is a high level of uncertainty about future developments and forecasts or discount rates or other material facts, the valuer should explain the assumptions related to uncertainty and apply sensitivity analysis. This sensitivity analysis should cover assessment of the short- and long-term factors specific to the current economic environment that affect the business being appraised and therefore the valuation.

The short-term effects are more certain and can lower earnings and cash flow for a more or less predictable period of time. At present, some of the most obvious short-term effects to consider are:

- the effects of increasing inflation in the euro area, which averaged 2.01% between 1991 and 2022, reached 8.9% in July 2022, an all-time high, and is forecasted to fall to 3.5 % only in 2023 and to 2.1% in 2024;
- the effects of the European Central Bank's measures to normalise monetary policy: for the first time in 11 years, it has decided to gradually raise interest rates starting in July 2022, which will eventually make loans to companies more expensive by at least 2% (the figure the ECB has announced as its medium-term target for interest rates).

Among the long-term effects, which are inherently more uncertain and more difficult to measure, but should be considered in sensitivity analysis, are:

- the consequences of the already declared Second Cold War between Russia, its allies and the liberal market economies;
- the impact of proposed and upcoming EU regulation aimed at protecting the EU internal market and ensuring the repatriation of essential industries, thus restoring EU competitiveness, such as:
  - Foreign Subsidy Regulation to avoid distortions in the EU internal market caused by companies heavily subsidised abroad;
  - Chips Act to strengthen the European ecosystem for semiconductors;
  - Carbon Border Adjustment Mechanism (CBAM) that will equalise the price of carbon between EU domestic products and imports from non-EU countries (third countries).
- support to certain industries from the EU and from EU-approved Member State aid, combined with EU border levy protection from third-country competitors.



This sensitivity analysis will allow the valuer to choose either the most likely cash flow or to derive a probability-weighted cash flow from cash flows that represent different levels of uncertainty in different future scenarios, to be used as the basis of a single value estimate.

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Ivars Strautiņš REV REV-BV is a member of the European Business Valuation Standards Board.

#05

European Plant, Machinery & Equipment Valuation Standards 2022

Steeped in Blue Book tradition, in sync with the EU's climate/ industrial transition

Konstantinos P. Pallis

On 21 October in Athens, TEGOVA will launch the first ever European Plant, Machinery & Equipment Valuation Standards, to be followed very shortly after by an REV-PME valuer recognition scheme. It's a euphemism to call this 'timely'. It's a perfect conjunction of right time, right place, right industrial and geopolitical context.

When TEGOVA decided to develop the standards in the spring of 2020, the motivation was the high demand from European practitioners who wanted standards tailored to the European manufacturing context and to the general principles of valuation in TEGOVA's European Valuation Standards. To that extent, it was the same as for the first ever European Business Valuation Standards, launched that year: filling a gap and not having to rely on whatever non-European norms and training were out there.

We were already at work when the world changed, with the hydra of climate, pandemic and war.

It seems facile to categorise climate warming as a surprise event – it's been around for decades. But only in 2019-2020 did it finally come to political boil with the European Green Deal, an EU legislative programme to climate-proof every aspect of the economy by transformational regulation of industry, transport, buildings, farming and finance as well as equivalence rules for any country anywhere wanting to go on exporting to the world's number one trading power.

Then came pandemic and war and the sickening realisation that Europeans had gravely compromised their prosperity, health, safety and security – and raised their carbon footprint – by extending their supply lines to far away authoritarian or rogue regimes.

"...beneath the surface of the genuinely common EVS valuation culture, the standards are adapted to the radically different make-up of PME."

Good and timely regulation has a way of kick-starting change even before it hits the statutes, and it's happening now: the repatriation, regeneration and greening of European industry.

This puts an absolute duty on the valuation profession to undergo its own transformation and learn to put a value on the components of the industrial transformation as it happens – a disruptive challenge for a necessarily conservative profession that's comfortable with comparables, preferably lots of them. It's not 'just' a duty – it's client demand! We see this in real estate: I refer you to the article in the December 2021 issue of this magazine in which Xavier Jongen, Managing Director of Catella Residential, demands that we give proper market value to positive energy buildings.

So it is that EVS-PME 2022 is at once steeped in the tradition and culture of all Blue Books – it has the same format and enunciates the central valuation principles of all Blue Books – and yet is also very different, driven by the nature of PME and because it is the child of economic and political forces that had not yet erupted during the gestation and development of EVS 2020 and EBVS 2020.

Different by nature because beneath the surface of the genuinely common EVS valuation culture, the standards are adapted to the radically different make-up of PME. PME may depreciate unevenly over the useful life of the asset, are highly reliant on the specific industry, are usually movable and relocatable all over the world, have buyers and sellers with varied motives, face dismantling, assembling and commissioning costs, take time to market, and buying and selling conditions may vary significantly depending on whether such assets are permanently attached to real property or not.

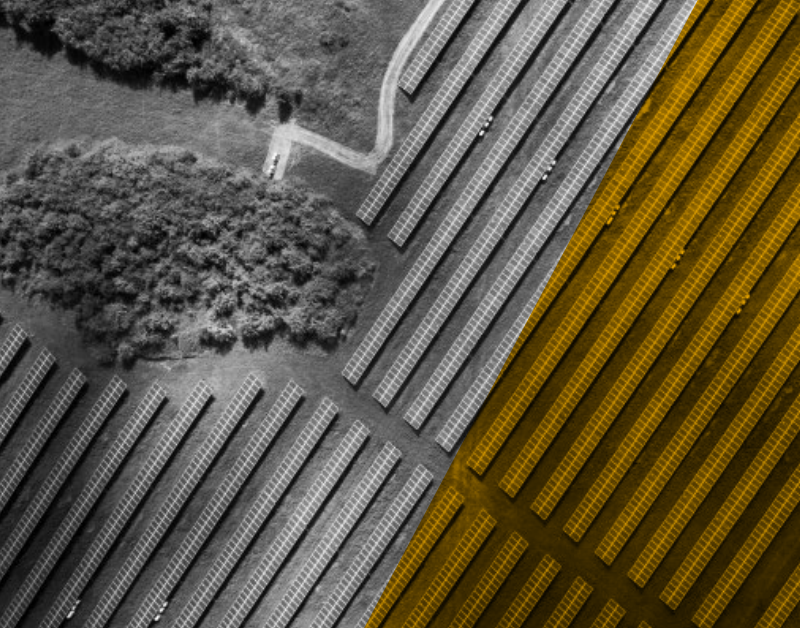
PME differentiate from real estate in ways that can affect both the valuation approaches and the valuation report, the most important difference being mobility. Another characteristic specific to PME is rapid depreciation, caused by a useful life shorter than real estate's, technical progress, regulatory changes or fluctuating demand for business products.

The three basic valuation approaches (market, cost and income) are the same for real estate and PME valuation, but vary significantly in their implementation.

Because of these particularities of PME, concepts such as 'fixed assets' and 'in situ'/'ex situ' values, scrap value and the three types of obsolescence (technological, functional and economic) and many more particular to PME are defined and standardised.

The emphasis on EU law is nothing new; it is core to every Blue Book. Even the standard on PME valuation and energy efficiency was preceded by the first ever energy valuation standard in EVS 2020, and the lineage is clear.

The difference is the depth of penetration of EU law. The Machinery Directive and the other plethoric EU industrial regulation are never far, and EU climate law is more tentacular than for real estate, going beyond energy efficiency to a wider spectrum of environmental / life cycle legislation.



That's why so much of the core areas of the Blue Book is devoted to specific energy and environmental issues embedded in EU law:

- A Guidance Note on Recycling Renewables
- And Information Papers on:
  - Equipping Valuers for EU Carbon Reduction Regulation
  - PME Servicing Energy Efficiency in Buildings
  - Real Estate Valuation and PME Valuation – Valuing the energy efficient transformation of the European building stock

The GN on Recycling Renewables was a challenge, so incipient and unresolved is the whole issue. But we felt we had to raise awareness of this in the Blue Book because it is moving quickly and will affect the life cycle of a wide variety of PME and their associated value well before the next edition of EVS-PME. I believe we did well because on top of existing EU law on waste, the European Commission has now:

- launched a new regulatory framework for batteries;
- proposed an addendum to the Energy Performance of Buildings Directive imposing rapid installation of rooftop PV in all new buildings and all existing government and commercial buildings;
- and is finalising a Circular Electronics Initiative.

For PME valuers, these matters are not 'good to know'; they are essential to valuation practice as EU climate regulation will greatly affect the life cycle of many PME in various ways, such as:

- raw materials pricing, as recycled critical raw materials start entering the market;
- affecting design and production costs (recycling-friendly design);
- promoting reuse or alternative use, thus extending PME useful life;
- changes to the residual value at the end of PME life through the development of recycling industry streams.

"The Blue Book equips valuers with the tools to capture the way the transformation of the entire industrial sector is going to affect PME valuations."

The Blue Book equips valuers with the tools to capture the way the transformation of the entire industrial sector is going to affect PME valuations. To understand how essential this is to valuation practice, it suffices to consider the predictable impacts on valuation methodologies:

Market approach

The green transition will create new markets for clean technologies and products.

Established markets might shrink or disappear.

Cost approach

New technologies will now be required for several production processes resulting in functional / technological obsolescence for current PME.

Costs for disposal may rise due to new requirements affecting the Residual Value of many PME.

Income approach

Period of income will frequently be limited by regulation-mandated retirement of some technologies.

Improving energy efficiency is going to require frequent green investments with midterm payback periods, increasing the complexity of regular cashflows.

Supply of clean resources may be more expensive initially. While renewable electricity can replace fossil fuels in many applications, the more expensive hydrogen may play an important role in industrial activities such as steel production, where fossil fuels are used as an energy source and as a reactant.

"... a singular and cutting-edge aspect of the Blue Book's climate-focussed content: the building of a much needed bridge between real estate and PME valuation."

Finally, I would draw your attention to a singular and cutting-edge aspect of the Blue Book's climate-focussed content: the building of a much needed bridge between real estate and PME valuation.

There are two IPs exclusively devoted to servicing energy efficiency in buildings, to their assessment and to the main measures involving technical systems in residential and commercial building renovations. The EVS-PME Board is made up of people with experience in both real estate and PME valuation who know that most property valuers do not have the skills to properly determine the value of technical building systems, this at a time when new EU law is imposing short-term renovation of the worst-performing building stock based on and triggered by the energy performance certificate rating of the building. And yet, especially for commercial buildings of a certain size and complexity, the technical building systems can have an influence on the energy performance of the building high enough to cause a shift of EPC rating all by themselves, with crucial impact on the Market Value of the whole building. Our work was founded on the conviction that proper valuation of such buildings requires a collaboration between real estate and PME valuers that is not common today and that EVS and EVS-PME need to promote.

It is hoped that this Blue Book will foster convergence in PME valuation practice across Europe, providing common ground and best practice regarding methodology, reporting and valuation approaches in a fast-mutating industrial landscape.

Konstantinos P. Pallis REV is Chairman of the European Plant, Machinery & Equipment Valuation Standards Board and Member of the Board of TEGOVA.

PODCASTS

- **New EU law on rapid deployment of rooftop solar installations**
- **European sovereignty made real**
- **The road to Irish Blue Book valuation**
  EV interviews Patrick Davitt

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