Mr. Ron Cohen

Ron Cohen, MRICS, is the only RICS Registered Valuer in Israel and founder of Ron Cohen VAS, the country's only RICS-regulated firm. A member of IVSC's Tangible Assets Board and Co-Founder of IREF, he introduced International Valuation Standards (IVS) to Israel.With extensive experience in independent valuation, financial reporting, and litigation, Ron has served institutional investors across Israel, Europe, the UK, Australia, and South Africa. He also initiated Israel's first commercial real estate index and has published in RICS Property Journal.

VALUATION MODELS

WHAT IS A VALUATION MODEL?

According to the International Valuation Standards (IVS) Glossary, a valuation model is:

"*A quantitative implementation of a method, in whole or in part, that converts inputs into outputs used in the development of a value.*"

A quintessential example is an Automated Valuation Model (AVM), a machine algorithm that automates part of the valuation process. These are mostly used for mass appraisals in mortgage lending and ad valorem taxation and employ hedonic statistical methods. For investment valuations, valuation software is available from vendors such as Argus, which automates traditional and discounted cash flow (DCF) calculations.

Today, the potential for AI-driven valuations features prominently in discussions on the subject. Whether these can truly be considered models will be addressed later. However, valuation models are not restricted to the above; they also encompass the valuer's own spreadsheet-based DCF calculations, which represent an example of a semi-automated model.

MASS VALUATIONS AND AVMS

AVMs are mostly used for mass appraisal in residential mortgage lending. They are based on algorithms that employ hedonic pricing models, which are statistical methods used to estimate the value of a property by analysing its characteristics. These characteristics may include factors such as location, size, number of rooms, age, and proximity to amenities, among others. By applying these models to large datasets of comparable property transactions, AVMs can quickly generate property valuations.

Owner-occupied residential property is especially amenable to AVMs for two main reasons: valuations for these are performed using the comparison approach, and the properties are relatively homogeneous, making them well-suited to statistical analysis.

The valuation calculations performed by AVMs are simple but repetitive. AVMs provide a cost-effective solution for tasks that involve straightforward computational processes. However, two caveats apply: the properties were not physically inspected, and there is a risk that the model functions as a black box. This underscores the importance of oversight by a professional valuer with experience in the local market.

In a November 2022 IVSC Perspectives Paper on AVMs it was written: "In conclusion, a fully automated Residential AVM with no valuer interaction is not IVS compliant ...' and 'As such, IVSC would consider an AVM in isolation a tool that may (or may not) assist a valuation professional in a valuation exercise."

INVESTMENT VALUATIONS AND VALUATION SOFTWARE

For investment valuation and analysis, specialised software plays a critical role in streamlining complex calculations and providing detailed cash flow modelling. One of the most widely recognised tools in this space is ARGUS Enterprise, which is extensively used by real estate valuers and investment analysts for office, retail, industrial, and mixed-use properties.

The products implement the income approach, which is fundamental for commercial property valuation. The income approach includes the following methods:

1. **Direct Capitalisation Method** – This method applies a single capitalisation rate (cap rate) to the property's net operating income (NOI) to estimate its value. The cap rate is derived from market yields.
2. **Discounted Cash Flow (DCF) Analysis** – The most correct form from a theoretical perspective, this is a detailed approach that projects the property's future cash flows over a holding period and discounts them to present value

using appropriate discount rates for various parts of the stream.

3. **Hybrid Methods** – Hybrid capitalisation methods, such as the equivalent yield model, that approximate DCF.

The financial modelling involved in income-based valuations can be intricate, especially when accounting for multiple leases, expense structures, and growth projections. Software solutions help automate many of these calculations, reducing the risk of errors associated with manual spreadsheets and making it easier for professionals to focus on refining assumptions and testing different scenarios.

Many valuation platforms offer detailed audit trails, documenting the assumptions and formulas used in the analysis, which is crucial for meeting regulatory requirements. Some platforms offer integration with market databases and property management systems, streamlining the valuation process.

VALUATION MODELS AND VS 2025

International Valuation Standards (IVS) serve as a globally recognised framework for best practices in valuation, designed to enhance transparency and ensure international comparability in valuations for businesses and their balance sheet components. They are principles-based standards intended to be adopted by professional organisations worldwide as a foundation for their own standards and guidance.

These organisations may expand on IVS to address specific organisational and jurisdictional requirements. A notable example is the Red Book, the compendium of RICS valuation standards and guidance, which incorporates IVS and must be complied with by all RICS Registered Valuers globally.

The IVS are set by the International Valuation Standards Council (IVSC), a global independent non-profit organisation headquartered in London, through its Standards Boards. International Valuation Standards (IVS) are grouped into two overarching categories: the General Standards and the Asset Standards. The former applies universally to all asset types, as their name suggests, whilst the latter provides directives specific to different categories of assets, such as businesses and intangibles (e.g., goodwill) on the one hand, and tangible assets such as inventory, plant and machinery, and land and buildings on the other. IVS 105 Valuation Models is intended to ensure that valuations:

a) remain under the control of a professional valuer who exercises professional judgement, and
b) do not result from a black box calculation, where the inputs are known but the process leading to the output is not traceable.

There must, at least in principle, be the ability to trace back the steps taken. Simply put, unless there is professional human oversight and the calculation is auditable, the result may be a value but would not be an opinion of value that is IVS compliant.

AI AND VALUATION

Artificial Intelligence (AI), particularly Large Language Models (LLMs), has been a growing area of research and application for many years. However, OpenAI, with its Microsoft-backed launch of ChatGPT in November 2022, has significantly amplified public awareness and interest in these technologies. These models have showcased remarkable advancements in natural language understanding and generation, capturing the public imagination, sparking widespread interest across industries, and fuelling debates about their potential impacts on work, productivity, and ethics.

Undoubtedly, AI can serve as a powerful productivity enhancer for many professionals, including valuers. Certain applications, such as asset class or industry research, appear relatively uncontroversial and could presumably be integrated into the valuation process whilst remaining compliant with IVS. Such tasks delegated to AI are primarily administrative or supportive in nature and would not compromise the valuer's professional judgement. By automating routine aspects of the process, valuers can focus their expertise on complex analyses, ensuring both efficiency and adherence to professional obligations.

However, what if we allow AI to perform the valuation

calculations—or worse, to present considerations and apply judgement? Even if the conclusions were overseen by a valuer, could the LLM be considered a valuation model in accordance with IVS? In our opinion, the crucial questions to answer are:

- Does the valuation remain under the control of a professional valuer who exercises independent professional judgement?
- Or does it result from a "black box" calculation, where the inputs are known, but the process leading to the output is opaque and untraceable?

For the use of a valuation model to be compliant, the latter must be false, and the former must be true. In the case of LLMs, it appears that this would not hold. We might ask the LLM to retrace its reasoning; however, LLMs do not truly "reason"—rather, they generate outputs in a way more akin to human intuition, based on probabilistic associations within their training data.

In our opinion, LLMs do not appear to be compliant with the IVS as they stand today. For LLMs to be compliant, they would need to fit within the definition of a valuation model as outlined in the IVS glossary. Perhaps future forms of AI could conform to these requirements, but current LLMs seem to fall short.

EXAMPLE – VALIDATING A SPREADSHEET DCF

The exhibit below demonstrates how a Discounted Cash Flow (DCF) model can be validated. The model benefits from being detailed, thereby enhancing transparency and accuracy. However, it is also complex and may not have been properly audited. It is important, therefore, to take a step back and assess the reasonableness of the conclusion reached.

This can be achieved by analysing the same property using the direct capitalisation method. Analysis can be viewed as reverse valuation. If, in a valuation, we input the variables and parameters to derive the value as the final output, in analysing using the direct income method, the valuation result, along with the variables and parameters of the DCF, are inputted in order to derive the implied cap rate.

The derived cap rate can then be compared to the initial yields observed in the market to verify the validity of the DCF outcome. The advantage of the cap rate/yield is that it is an observable market metric, unlike the discount rate, which is not directly observable, unless you have highly detailed information

Example cash flow projection for DCF calculation. The base discount rate in this case was 7.00%. We have boxed in red the first year calculation, which in effect is a single period direct income capitalisation. The first year running yield of 6.83% is the cap rate.

Forecasted Cash Flow											
Year :			1	2	3	4	5	6	7	8	9	10
Tenant	Floor	Use	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
	G	Offices	1,772,122	1,772,122	1,772,122	1,837,691	1,837,691	1,837,691	1,903,259	1,903,259	1,903,259	1,903,259
	G	Offices	101,437	101,437	101,437	101,437	101,437	101,437	101,437	101,437	101,437	101,437
	G	Offices	180,819	180,819	187,599	194,380	194,380	194,380	194,380	194,380	194,380	194,380
	1	Offices	2,000,992	2,000,992	2,000,992	2,000,992	2,000,992	2,000,992	2,000,992	2,000,992	2,000,992	2,000,992
	2	Offices	159,334	159,334	159,334	159,334	159,334	159,334	159,334	159,334	159,334	159,334
	2	Offices	304,160	304,160	304,160	304,160	304,160	304,160	304,160	304,160	304,160	304,160
	2	Offices	325,068	325,068	325,068	325,068	325,068	325,068	325,068	325,068	325,068	325,068
	2		169,751	169,751	169,751	169,751	169,751	169,751	169,751	169,751	169,751	169,751
Car parking												
Total rental income			5,013,683	5,013,683	5,020,464	5,092,813	5,092,813	5,092,813	5,158,382	5,158,382	5,158,382	5,158,382
Provision for losses/vacancy			-50,137	-50,137	-50,205	-50,928	-50,928	-50,928	-51,584	-51,584	-51,584	-51,584
Service charge			979,795	979,795	979,795	979,795	979,795	979,795	979,795	979,795	979,795	979,795
Other income			-	-	-	-	-	-	-	-	-	-
Total income			5,943,342	5,943,342	5,950,054	6,021,680	6,021,680	6,021,680	6,086,593	6,086,593	6,086,593	6,086,593
Operating expenses												
Management Budget			-911,848	-911,848	-911,848	-911,848	-911,848	-911,848	-911,848	-911,848	-911,848	-911,848
Provision for depreciation/obsolescence			-50,137	-50,137	-50,137	-50,137	-50,137	-50,137	-50,137	-50,137	-50,137	-50,137
Property tax on vacant space												
Insurance on vacant space												
Ground rent												
Total operating expenses			-961,985	-961,985	-961,985	-961,985	-961,985	-961,985	-961,985	-961,985	-961,985	-961,985
Net Cash Flow												
Net Operating Income (NOI)			4,981,357	4,981,357	4,988,070	5,059,695	5,059,695	5,059,695	5,124,608	5,124,608	5,124,608	5,124,608
Capital Expenditure (CapEx)				-	-	-	-	-	-	-	-	-
Cash Flow			4,981,357	4,981,357	4,988,070	5,059,695	5,059,695	5,059,695	5,124,608	5,124,608	5,124,608	5,124,608
Car Parking												-
Exit Value			0	0	0	0	0	0	0	0	0	69,162,671
Net Cash Flow			4,981,357	4,981,357	4,988,070	5,059,695	5,059,695	5,059,695	5,124,608	5,124,608	5,124,608	74,287,280
Running yield			6.84%	6.84%	6.85%	6.95%	6.95%	6.95%	7.04%	7.04%	7.04%	7.04%

pertaining to a transaction.

There is no need to establish a separate capitalisation. It is worth noting that the first column of the DCF is, in effect, a direct capitalisation of the property's income. Notice that the cap rate is the first-year running yield in the DCF.

CONCLUSION

Valuation models play a crucial role in modern real asset valuation, providing structured frameworks for deriving value through the application of established methodologies and carefully selected inputs. They range from automated systems like AVMs, used extensively in mass appraisals, to bespoke spreadsheet models for investment valuations.

Automated Valuation Models (AVMs) demonstrate the utility of algorithms in simplifying repetitive tasks and processing large datasets, particularly for homogeneous property types such as residential properties. However, the reliance on such tools underscores the importance of professional oversight to avoid potential pitfalls like black box calculations. This need for traceability and professional judgement is enshrined in the principles of IVS 105, ensuring that valuation models remain tools to support, rather than replace, human expertise.

For investment valuations, tools like ARGUS Enterprise highlight the value of specialised software in handling complex financial models and fostering accuracy and transparency. These platforms facilitate compliance with regulatory standards by providing detailed audit trails and reducing errors, while freeing valuers to focus on strategic decision-making.

The advent of AI and its integration into valuation processes raises questions about compliance with existing valuation standards. While AI may offer a number of efficiencies, its current inability to provide traceable and auditable processes limits its alignment with IVS requirements in isolation. As technology evolves, it may one day meet these requirements; however, in its current form, AI cannot be considered a 'valuation model'.

Ultimately, whether using a sophisticated software solution or a simple spreadsheet, the valuer's role is to ensure that the model's outputs reflect appropriate assumptions, market conditions, and a deep understanding of the valuation process. As demonstrated through the DCF validation example, maintaining consistency, accuracy, and traceability is central to the integrity of valuation work.

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Mr. Sandip Kumar Deb
Vice Chairman
TAB, IVSC

Mr. Paakow Winful
Consulting Director
TAQEEM

SESSION	DATE
IVS 100 Valuation frame work	03rd Jan 2025
IVS 101 Scope of Work	10th Jan 2025
IVS 102 Base of Value 1	17th Jan 2025
IVS 102 Base of Value 2	24th Jan 2025
IVS 103 Valuation Approaches	31st Jan 2025
IVS 104 Data & Inputs	07th Feb 2025
IVS 105 Valuation Models	**14th Feb 2025**
IVS 106 Documentation & Reporting	**21st Feb 2025**