Business Valuation is a Question of Trust

EBVM

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Harri Seppänen, M.Sc., Ph.D., CVA
Independent solopreneur based in Espoo, Finland, currently focusing on business valuation in various judicial contexts

Judicial Business Valuation in Finland

This article on country specific valuation topics briefly reviews the key issues regarding judicial valuation in three main areas in Finland: minority shareholder squeeze-outs, estate and gift taxation, and marital dissolution. The degree and detail of guidance provided for judicial valuations varies significantly depending on the applied law.

ESG-Sensitive Real Estate and Business Valuation – and the Recent Updates in IVS –

The integration of ESG factors into valuation decision-making is still at an early stage of development. This presents a significant challenge, particularly when it comes to projecting future cash flows and determining the cost of capital. This paper first provides an overview of the origin, role, and significance of ESG. This discussion also clarifies the linkage between ESG and Sustainable Development Goals (SDG), as well as the connection between corporate social performance (CSP) and corporate financial performance (CFP). Second, it examines the integration of ESG considerations into business and real estate valuation, highlighting ongoing challenges in ESG-sensitive valuation. Finally, the athor reviews recently updated IVS ESG rules, evaluating their potential gaps and impacts.

Assoc. Prof. Dr. Yener Coşkun
Associate professor in finance focusing on asset pricing, REITs, (business / real estate) valuation, ESG and impact investing

Stefan Schöniger, WP/StB
Partner, Deal Advisory – Valuation, KPMG AG WPG, Hamburg

Heike Snellen
Director, Deal Advisory – Valuation, KPMG AG WPG, Dusseldorf

Dr. Andreas Tschöpel, CVA/CEFA/CIIA
Partner, Deal Advisory – Valuation, KPMG AG WPG, Berlin, member of the expert committee for business valuation and business administration (FAUB) and board member of EACVA

Cost of Capital Study 2023: Unpredictability on the Rise! – Interest Rates Too? What Are the Drivers, What Are the Consequences?

Recently the 18th edition of KPMG's Cost of Capital Study was published. As in previous editions, the study presents current developments regarding the preparation of business plans and the derivation of cost of capital, as well as its relevance for company values and company value developments. The study examines the impact of increased uncertainties and accompanying interest rate and inflation developments on business models, corporate development and long-term return expectations (cost of capital), based on sector-specific analyses. 2023 response rate demonstrates once again the high practical relevance of the annual Cost of Capital Study. In total, 322 companies participated in this year's Cost of Capital Study. Of the participating companies, 240 are based in Germany, including 65 percent of the DAX-40 companies.

From the Editors

Relevance of Data for Business Value and Valuation

In recent years, data and its processing have ascended to paramount importance across the business landscape. While data has always underpinned the success of business models, contemporary technological advancements have propelled the relevance of this asset to unprecedented heights.

In tandem with the expanding significance of data in business, valuation experts are today increasingly tasked with analysing and assessing the value of data and its influence on the company value. Traditional approaches, however, often overlook the nuances of data as an intangible asset, and not rarely fail to adequately map the monetization potential of data (or the lack thereof).

The IVSC has adressed this important topic by its recent publication of the perspecives paper „Valuing Data". The paper highlights the special characteristics of „data" from a business and financial point of view, and shows how valuation experts can approach analysis and valuation of this important asset. Readers who seek more information on the impact of privacy issues and how the life cycle of data looks like will find what they are looking for, and so will readers who are rather interested in accounting and reporting issues in the context of data.

Another hot topic in business valuation is the integration of ESG factors into business valuation conclusions. In this issue of EBVM, *Coşkun* takes a stand on this topic, covering the links between ESG and the Sustainable Development Goals, corporate social performance and corporate financial performance, and the integration of ESG considerations into business and real estate valuations.

Seppänen provides an overview about legal valuation issues in Finland. Concrete for shareholder squeeze-outs, estate and gift taxation, and marital dissolution.

Schöniger/Snellen/Tschöpel summarise the results of the 18th KPMG's Cost of Capital Study 2023 on key value drivers such as planning uncertainty, growth expectations, sustainability, WACC and its components, triggering events and impairments.

The data section includes country-specific discounts for lack of marketability based on option pricing models provided by *Grbenic* and the European industry betas and multiples provided by *KPMG*.

Prof. Dr. Matthias Meitner, CFA
Managing Partner at VALUESQUE and Professor for Finance, Accounting & Business Valuation at the International School of Management, Munich

Imprint

Editors-in-chief:
Andreas Creutzmann, WP/StB, Dipl.-Kfm., CVA I EACVA, Germany
Wolfgang Kniest, Dipl.-Kfm., CVA I EACVA, Germany
e-mail: EBVM@eacva.de

Editorial Committee:
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EACVA GmbH
European Association of Certified Valuators and Analysts
Koernerstr. 42
63067 Offenbach am Main
Germany
tel: +49 69 247 487 911
e-mail: EBVM@eacva.de
web: www.eacva.com, www.eacva.de
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Cooperation partner:
The International Valuation Standards Council (IVSC)
20 St Dunstan's Hill
EC3R 8HL London
United Kingdom
tel: +44 20 3 795 3140
e-mail: contact@ivsc.org
web: www.ivsc.org

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Harri Seppänen, M.Sc., Ph.D., CVA

independent solopreneur based in Espoo, Finland, currently focusing on business valuation in various judicial contexts. He has over 30 years of international experience in business valuation as a professional valuer, academic educator and researcher, and professional trainer. Harri has previously acted, for example, at Aalto University (currently visiting researcher), The University of Texas at Austin, The University of South Africa, and Estonian Business School.

Contact: ebvm@eacva.de

Judicial Business Valuation in Finland

This article on country specific valuation topics briefly reviews the key issues regarding judicial valuation in three main areas in Finland: minority shareholder squeeze-outs, estate and gift taxation, and marital dissolution. The degree and detail of guidance provided for judicial valuations varies significantly depending on the applied law.

I. Introduction

In Finland there are no country-specific generally accepted valuation principles for performing business valuations. This also includes the International Valuation Standards, which have no official status in Finland.[1] Moreover, business valuers are not required to acquire any professional qualifications, nor do they need a professional license to perform business valuations. Nevertheless, the general international business valuation principles and best practices are commonly used as general guidelines by valuation professionals.

The article provides brief descriptions of the purpose of value, subject of value, valuation date, basis of value, valuation approach and method, valuation adjustments, and present other notable issues related to valuation, if any, under the three judicial valuation contexts

II. Minority Squeeze-Out

Background. According to the Chapter 18 of the Finnish Limited Liability Companies Act (LLCA; Osakeyhtiölaki, OYL), a shareholder who's direct and/or indirect holdings in company exceeds 90% of all shares (controlling shareholder or redeemer) and votes has the right to force redemption of minority shareholders' shares (squeeze-out). Correspondingly, a minority shareholder has the right to demand redemption of their shares when the threshold is surpassed (sell-out).

Purpose of valuation. The purpose of valuation under the LLCA (chapter 18, section 1 and 7; LLCA 18:1 and 7) is to determine the redemption price for the minority shareholders' shares.

Subject of valuation. The subject of valuation is shares held by minority shareholders in a publicly listed company or in a private company depending on the case (LLCA 18:1).

Valuation date. The valuation date is the date when the redeemer informs minority shareholders regarding the redemption of their shares (LLCA 18:4).

Basis of value. The LLCA 18:1.1 (section 18, article 1, paragraph 1) stipulates that the basis of value for the redemption price is "fair price".[2] However, the paragraph does not define what constitutes a fair price. Similarly, the proceedings of the law (Hallituksen esitys 109/2005) do not provide any basis for defining a fair price as a concept. However, they refer to a "market price principle" in the context of the redemption price of shares of a publicly listed company.

Nevertheless, based on the Arbitrage Court rulings and judicial literature, one can derive the definition of "fair price" and its premises: A minority shareholder should receive full compensation for the value of shares that s/he is forced to give up. The value is also in some judicial writings described as "true economic value". Moreover, the redemption price should not include any change in value due to actions taken by the redeemer after the valuation date. The redemption price should not be influenced by the fact that it represents a minority stake in the subject company, nor it should include potential impact of the subject's shares lack of marketability or liquidity.[3] Finally, the redemption price should be fair and equitable to a redeemer and to minority shareholders, in that neither party should benefit at the cost of another.

The "fair price" can also be inferred to assume that the subject company will be valued as a going-concern in its current use and condition, and no transaction costs or tax consequences due to exchange of shares are included in the redemption price of shares. Nevertheless, the impact of any strategic, operative or financial decisions made to by the subject company prior to the valuation date can be incorporated into the valuation.

Valuation approach and method. The LLCA (18:7) does not guide the choice of an appropriate valuation approach or method. The preliminaries of the law, however, indicate that while primary weighting should be given to the market approach (also referred in practice as the "market price principle"), all commonly applied approaches and methods are acceptable in order to determine the redemption price of shares.

While the law, the preliminaries nor the judicial literature does not provide detailed guidance on the valuation methods or their application, two key principles are presented in the judicial writings underlying the valuation, and hence the determination of the redemption price of shares.

First, a market price or prior transaction price of the subject's shares establishes a baseline for the "fair price" especially in the case of publicly listed companies[4], but also for private companies assuming that an available transaction price can be considered to be a reliable indicator of the market value. Second, one should consider all case-specific factors and conditions that may impact the value of a subject's shares when determining the redemption price.

1 The European Union directives may impose requirements or provide recommendations for valuations such as the requirements under International Financial Reporting Standards (IFRS) for financial reporting purposes or, for example, recommendations under the Commission Delegated Regulation (EU) 2018/345 regarding the valuation of assets held by banks. Also, the Finnish real estate appraisers can acquire and are in some specific cases required to acquire a professional certification, which requires also understanding of the IVS standards. No such professional certifications exist for business valuers.

2 The LLCA 18:1 fair price is akin to the equitable value as defined in the IVS 102 Bases of Value standard (in the 2023 exposure draft).

3 However, some judicial experts argue that the redemption price should reflect lack of marketability or liquidity, as it is part of the risk a minority shareholder carries when investing in a company. Nevertheless, it is fair to infer that the process itself creates market for the minority shares, hence, the application of discount for lack of marketability (DLOM) may not be supported on such grounds. Moreover, if one applies DLOM, then one should probably apply also discount for lack of control (DLOC). Currently there exist no studies providing empirical evidence on the application of valuation discounts in various types of valuation engagements in Finland or in particular in the context of LLCA 18. (These are inferences made by the author of this article, and do not represent judicial opinion.)

4 In case of publicly listed companies, a controlling shareholder has typically made a public tender offer prior to exceeding the 90 % threshold level or in the process of acquiring all shares of a target company and subsequently delisting it from public trading. Consequently, the prevailing market price of a higher tender offer price establishes a floor for the redemption price under the LLCA 18.

Valuation adjustments. Given the definition of "fair price" (as discussed above), one should not adjust the derived indication of value of a subject company's shares for lack of control or lack of marketability.

Other issues. The process of redeeming minority shareholders' shares is guided by the LLCA 18 and by the guidelines on the redemption of share as stipulated as part of the rules of the Finnish Chamber of Commerce (FCC). The redemption process, unless a redemption price can be agreed upon between a redeemer and minority shareholders, is performed under the supervision of an arbitration court judges named by the FCC. Such a process can take from six months to over 12 months depending on the complexity and degree of dispute. The arbitrage court judges will rule on the redemption price of the shares. A redeemer, a minority shareholder and/or a fiduciary of the minority shareholders, if one is named by the FCC, can appeal against an arbitration court decision to Helsinki District Court. The fiduciary is commonly chosen from the legal, auditing, or academic profession to guard the legal rights of the shareholders.

III. Estate and Gift Tax

The Finnish Estate and Gift Act (the EGTA; Perintö- ja lahjaverolaki, PerVL) stipulates on the taxation of property in the context of inheritance and gift. The Act does not provide guidance on the valuation of property beyond a simple definition of a basis of value. Instead, the guidelines on the valuation for estate and gift taxation issued by the Finnish Tax Administration (GTA; Verohallinnon ohje, Varojen arvostaminen perintö- ja lahjaverotuksessa, annual revisions made) provides a more detailed guidance on the valuation of various types of assets and liabilities.[5]

Purpose of valuation. The purpose of business valuation under the Finnish Estate and Gift Tax Law is to establish base value for taxation and as a result the amount of inheritance or gift tax depending on the case.

Subject of valuation. The subject of valuation is shares held by a person who receives a company's shares either as an inheritance or as a gift. The basis of determination of the value varies by the type of company, whether it is a publicly listed company or in a private company.

Valuation date. The valuation date is the date when a person has deceased (inheritance) or the date when a gift has been given to another person. The valuation date also determines the date when the duty of a taxpayer to pay the tax is established.

Basis of value. The EGTA article 9, paragraph 1 stipulates that the basis of value for the tax value is "fair value" on the valuation date.[6] The article also defines that the "fair value" refers to a probable price in an exchange.

The GTA further defines the concept of "fair value" as follows. First, the value is determined from the taxpayers perspective; value of an asset to the taxpayer in a hypothetical cash based exchange between independent parties under "free market conditions" on the valuation date.[7] Second the value of an asset is determined in its current use and condition and assuming going concern.[8] Third, no transaction costs or taxes related to the inheritance or reception of a gift are considered in the estimated value of an asset.

Valuation approach and method. In principle, a taxpayer can choose any appropriate valuation approach and method. The GTA, however, requires that a valuation method should be (i) based on valuation theory, (ii) should be based on empirical evidence on the market behavior, and (iii) should be able to incorporate all relevant case-specific factors into the value.

The GTA further establishes a general priority order for the common valuation approaches. The primary approach is the market approach, while the income and cost approach receive subsequent and equal status in the priority order.

The value of a publicly listed company's shares is practically always based on their market price, which is also required to be employed as a basis for establishing value in the GTA. Also, for private companies' prior transactions with a subject company's shares is prioritized and accepted, but only if they represent sufficiently comparable basis for valuing the shares given the state of a company and prevailing market conditions on the valuation date. In contrast, the GTA does not allow the use of comparable publicly listed companies method or the comparable transaction method to determine a value for a private company's shares.

If no reliable market value can be established for a private company's shares, then the GTA guides a taxpayer to use a valuation formula that combines income and cost method based values into an estimate of value for a company's shares. The basic formula is as follows[9]:

$$\text{Value (V)} = \text{Weight} \cdot \text{Income value} + (1 - \text{Weight}) \cdot \text{Asset-based value}$$

Income value is calculated by capitalizing an average of the three prior years adjusted net income with a capitalization rate of 15 %.[10] The adjustment mainly disregards one-time income and expense items from the reported income statement. The GTA does not describe on what the 15 % rate is based (it has been the same rate at least since 2009). Nevertheless, according to the GTA the rate can be higher or lower based on the riskiness of the company.

5 Only the guidelines applying to shares of a limited liability company are discussed in this article.

6 The EGTL 9.1 fair value is akin to the market value as defined in the IVS 102 Bases of Value standard (in the 2023 exposure draft). The choice of the terms to describe value in LLMA ("fair price" vs. the IVS defined equitable value) and in the EG ("fair value" vs. the IVS defined market value) contradicts what is typically understood by them.

7 The requirement of "free market conditions" may be interpreted as seller and buyer acting in their own interest without compulsion nor being forced to transact in a market that is free from restrictions on entry.

8 This is stated implicitly in the GTA by defining the value of an asset in "its current location" on the valuation date.

9 The GTA also presents a variation of the formula to be applied if a company's asset-based value is negative.

10 The GTA provides mixed description of the capitalization rate. The GTA uses both discount rate and capitalization rate to describe the 15 % rate.

The asset-based value of equity is based on the adjusted reported balance sheet. The adjustments mainly aim to value reported assets and liabilities on the balance sheet at their market value, but in general most balance sheet asset and liability items are valued at book value as reported.[11] The asset-based value is also considered to be minimum acceptable value according to the GTA. Hence, in cases where the calculated value based on the formula is lower than the value received based only on the asset-based value, the asset-based value is used in taxation.

The default weights on the values derived based on the income method and asset-based method are 50 % on both elements. The GTA provides no justification or rationale for the choice. Nevertheless, the GTA suggests that the weights may vary by the type of a company (mainly based on its asset intensiveness) but does not provide any guidance on how to adjust the default weights.

One should note that the formula, which calculates a weighted average of the two values, and its inputs as described in the GTA are in conflict with the key principles for a valuation method choice established in the GTA: the model is ad hoc as there is (i) no theory to justify its specification including its weights and inputs, (ii) no evidence on its appropriateness in the market setting, and (iii) it does not incorporate case-specific information into the estimate of value given the ad hoc default inputs.

Nevertheless, the GTA recognizes and suggests that the formula is likely to result in a conservative estimate of value in many cases.[12] However, this is not true in all cases, as a company's value can be less than its adjusted- asset based value (e.g., financially distressed companies).

Valuation adjustments. The GTA does recognize, and consistently with the chosen basis of value, that a value derived based on the GTA's formula can be adjusted for a key person's absence (demise, retirement, or departure) from a company's operations after the valuation date. Moreover, the GTA also allows the possibility to incorporate lack of control and lack of marketability into the valuation and, hence, indication of value. Finally, especially in the case of a publicly listed company, a block discount can be applied. However, in order for such valuation adjustments to be accepted by the Tax Administration, a taxpayer must represent acceptable rationale and evidence to justify their use. As noted previously, there exist currently no studies reporting empirical evidence on the application of valuation adjustments in any valuation context in Finland.

Other issues. The GTA provides authoritative guidance on the valuation of companies for state and gift taxation.[13] One of the stated motives for publishing the guide was to unify and facilitate more efficient administrative process across different regional tax offices in Finland. However, a taxpayer can also establish and base taxable value on her/his valuation or use professional valuers to value a company's shares.

IV. Marital Dissolution

The Finnish Marital Act (the MA; Avioliittolaki, AL) does not provide any requirements or guidance on the valuation of assets and liabilities in divorce. Instead, such principles are formed based on case law and in judicial writings.

Purpose of valuation. The purpose of business valuation under the MA is to establish value for distribution of matrimonial assets.

Subject of valuation. The subject of valuation is shares held by one party in marriage who owns a company or an interest in a company.

Valuation date. The valuation date is the date of distribution of the assets between the two parties in a marriage. In practice this means that the valuation should be performed, and an estimate of value should be reported prior to the actual valuation date. Hence, the indication of value represents a forecasted value which requires assumptions regarding the market conditions on the valuation date.

Basis of value. The MA does not define any basis of value, but article 103b does describe that the distribution of marital assets should not result in unfair distribution of assets or in a situation in which one party receives unjustified benefit from another. The case law and judicial literature indicates that the concept of value is akin to market value as it is described in the rulings of the Finnish Supreme Court and judicial literature as "probable sales price", "price that a buyer [another entrepreneur] is willing to pay", and "fair sales value". However, the judicial literature also suggests that the concept of value can represent value to the holder "in a slightly longer term", and that it could represent purchase cost, value in use or income value. Consequently, it seems that the concept of value may be somewhat elusive in marital dissolutions.

Valuation approach and method. The MA does not guide the choice of an appropriate valuation approach or method. The judicial literature, however, suggests that while primary weighting should be given to the methods belonging to the market approach, all commonly applied valuation approaches and methods are acceptable.[14]

Valuation adjustments. There is no guidance on the acceptability of valuation adjustments including personal goodwill in marital dissolutions. On the other hand, the courts may impose judicial adjustments on estimate value in order to ensure equitable distribution of assets.

11 The Finnish Tax Administration does not accept impairments of assets that are not also recorded in the reported financial statements, and which provide a basis for corporate income taxation in Finland. Instead, revaluations to a higher value are accepted according to the GTA.

12 There exists currently no empirical evidence on the claim.

13 The valuation formula is also applied in practice in other tax related valuations. Sometimes it is also applied for other business valuation purposes despite its ad hoc nature.

14 One should note that historically in Finland, judicial rulings made by the Supreme Court have favored asset-based approaches in squeeze-out, tax, and marital valuations of private company interests.

Other issues. As suggested by the above discussion, the valuation for martial dissolution purposes is likely to involve aspects that require or will be subject to judicial judgment. Consequently, a case-specific evaluation of all aspects that may require consideration should be applied by a valuer under the guidance of a legal expert.

V. Conclusion

This article provides a country specific summary review of business valuation issues under the Finnish jurisdiction regarding (1) minority shareholder squeeze-outs, (2) estate and gift taxation, and (3) marital dissolution. In general, judicial valuation requires that a valuer understands the country-specific statutes and their requirements governing each type of judicial valuation. In particular, judicial valuation requires considerable case-specific use of professional and legal judgment from business valuers as the Finnish statutes, legal literature, and court rulings do not provide well-defined and sufficient guidance.

A valuer's task is further handicapped by the fact that the Finnish regulation does not impose any standards on business valuation in any context beyond the guidance provided by the IFRS standards for financial reporting by the publicly listed companies or European Union level guidance in specific industries (e.g., European Banking Authority, Handbook on Valuation for Purposes of Resolution, 22 February 2019). While the Finnish Tax Authority's guidance on valuation (GTA) is the first and still the only valuation guidance provided by the Finnish authorities, its use is clearly limited to tax purposes.[15]

Moreover, there exists no studies that provide any systematic empirical evidence on the Finnish business valuation practices or on the business valuation profession in general excluding some case-based evidence. Nevertheless, it is fair to say that the Finnish valuation professionals do follow the generally accepted international valuation practices based on a casual observation of the valuer's education (mainly master's degrees in accounting or finance from business schools) and experience (including in Big 4 auditing companies and also from international investment banking).

Table 1. provides some suggestive evidence on the providers of valuation services in Finland in the context of acquisition of Finnish private companies. The evidence on financial advisory companies suggest that the market is dominated based on the number of transaction by the Finnish financial advisory companies.[16]

Table 1: The Largest Financial Advisors (of Acquiror, Target or Vendor) in Acquisitions of Finnish Unlisted Target Companies

Rank	Company	No. deals
1	ProMan Oy	104
2	Suomen Yrityskaupat Oy	93
3	PWC	79
4	Clairfield International	54
5	KPMG Corporate Finance	54
6	Ernst & Young	47
7	Icecapital Pankkiiriliike Oy	42
8	Nordea Corporate Finance	39
9	Aventum Oy	37
10	HLP Corporate Finance Oy	36
Total		**585**
Total transactions in Zephyr database		**15.512**

Nevertheless, the tabulated analysis of all types of transactions based on the data from Zephyr database indicates that large international investment banking and financial advisory companies are commonly hired in larger transactions of any type.[17]

In the author's opinion and based on a casual observation of the valuation practices, the Finnish business environment should benefit from application of carefully crafted valuation standards such as the International Valuation Standards (IVS) as well as a significantly larger population of certified valuers such as EACVA provided CVAs. This view applies especially in the context of judicial valuations in which the valuation choices can be biased by opinions of legal advisors in a case with little or no education in business valuation. ◆

15 There have been some non-public discussions on the demand for professional business valuation standards, but so far, such discussions have not led to any tangible outcomes.

16 One should be careful in making any generalizations based on the data as the Zephyr database lists over 15,000 acquisitions and the top 25 financial advisors covers only approximately 1,000 transactions (7 %).
The leading Finnish financial advisory companies based on the number of any type transactions recorded in Zephyr (total of 26,669 transactions) is almost identical to the data in Table 1.

17 To name few of the international advisors (available average deal value over approximately 700 million euros): UBS Warburg, Lehman Brothers, Deutsche Bank AG, Goldman Sachs Group Inc., Danske Markets Corporate Finance, Credit Suisse First Boston Corporation, D Carnegie AB, Morgan Stanley, Jefferies LLC, Lazard Ltd, Merrill Lynch, JP Morgan, Citigroup Inc., BNP Paribas SA, and UBS.

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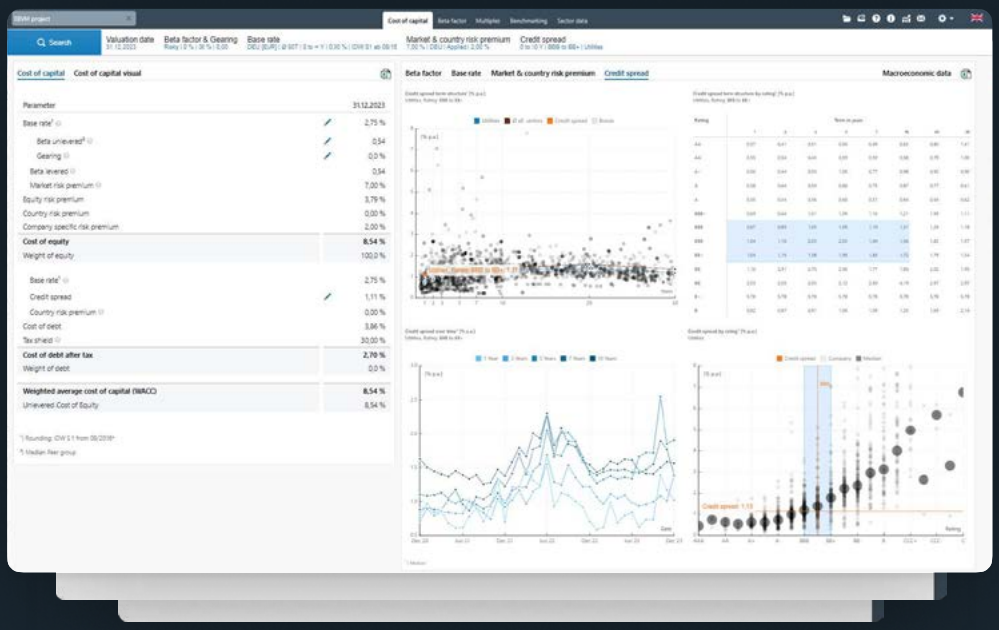

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Assoc. Prof. Dr. Yener Coşkun

associate professor in finance focusing on asset pricing, REITs, (business / real estate) valuation, ESG and impact investing. As a visiting scholar, Yener studied at Wharton School, UPENN, in 2003 and at the University of Sheffield in 2019. He has six published books, several peer-reviewed (in journals & books) and professional articles in finance. He is currently an adjunct lecturer at TED University (2019-) in Turkey, a member of the RICS ESG in Commercial Real Estate Valuation Global Working Group (2024-) and has been working for the Capital Markets Board of Turkey since 1995 as the senior regulator. As a visiting scholar funded by the Scientific and Technological Research Council of Turkey (TUBITAK), Yener visited the John Molson School of Business, Concordia University (Canada) during 2023-2024.

Contact: ebvm@eacva.de

ESG-Sensitive Real Estate and Business Valuation

– and the Recent Updates in IVS –

The integration of ESG factors into valuation decision-making is still at an early stage of development. This presents a significant challenge, particularly when it comes to projecting future cash flows and determining the cost of capital. In this paper, I will first provide an overview of the origin, role, and significance of ESG. This discussion also clarifies the linkage between ESG and Sustainable Development Goals (SDG), as well as the connection between corporate social performance (CSP) and corporate financial performance (CFP). Second, I explore the integration of ESG considerations into business and real estate valuation, highlighting ongoing challenges in ESG-sensitive valuation. Finally, I review the recently updated IVS ESG rules, evaluating their potential gaps and impacts.

I. Introduction

Like football is never just a game, ESG (Environmental, Social, and Governance) considerations in business and real estate valuation transcend mere financial or performance metrics. In an era where societal and environmental issues increasingly shape corporate landscapes, integrating ESG criteria into corporations has become both pivotal and controversial. Striking a balance between profit-driven motives and sustainable, socially responsible practices has become a defining challenge for businesses and real estate stakeholders. This introduces a provocative discourse on the controversial intersections between profit and purpose, risk and responsibility, shaping the landscape where ESG is not merely an acronym but a transformative force in redefining how we assess value in modern business. From the perspective of company value, it is perceived that sustainability and ESG may have a positive impact. However, mixed evidence in empirical literature implies that ESG investing may not necessarily be good for financial performance.[1] This puzzling picture increases tension regarding the value impact of ESG investing.

Almost all agree that ESG is important for intangible asset and business value creation, but no one is sure how to adjust existing valuation approaches and methods based on ESG impact. Data, measurement and valuation problems of ESG result in a shadow for its benefits. As an answer to this concern, newly emerging regulatory rule-making and local/global industry initiatives attempt to clarify the value impact of ESG. In this respect, one of the aims of the recently updated IVS is also to clarify ESG-sensitive real estate and business valuation.

In this paper, we first briefly review the origin, role and importance of ESG from the perspective of Sustainable Development Goals (SDG) and the linkage between corporate social performance (CSP; ESG) and corporate financial performance (CFP). As an answer to recently evolving anti-ESG rhetoric, this discussion will show the raison d'être of ESG integration for the new corporate value. Second, we will review how ESG consideration will integrate into business and real estate valuation by also presenting ongoing problems of ESG and ESG-sensitive valuation. Finally, we review the recently updated IVS ESG rules and assess their possible gaps and impacts.

II. ESG: Global Trend and the Tool of SDG Integration

The United Nations' 2015 Sustainable Development Goals (SDG) encompass 17 interconnected objectives, targeting issues like poverty, inequality, climate change, and environmental degradation. They serve as a roadmap for global sustainability efforts, aiming for progress by 2030. ESG develops a bridge between firm-level activities and their societal and environmental impact in line with the SDG. Like other tools helping to achieve SDG, ESG is also special and the world needs great ESG companies which will make a difference.[2] However, ESG may not be set up to actively push for progress towards the SDG or pave the way for a truly sustainable world, the original goal of the ESG integration is to minimize the negative consequences of the ongoing multi-dimensional sustainability crisis.

Fund managers are increasingly looking for ways to integrate ESG goals into their investment strategies[3] possibly to get higher fees for trading ESG assets.[4] Investors' broad support for ESG initiatives is the main factor for this push. According to the Conference Board's Shareholder Voting Trends (2018-2022) issued September 2022, there is a sharp increase in the number of shareholder proposals filed and voted in 2022 among Russell 3000 and S&P 500 companies, driven by a growth in environmental and social proposals, suggesting that investor focus on ESG is accelerating.[5] In 2023, with an increase of 47 shareholder proposals, environmental and social (E&S) policy saw the sharpest rise in volume.[6]

The Concerns of the Benefits of ESG Investing

Despite its growing importance, ESG seems far from being a perfect tool. The ESG has its weaknesses such as measurement problems of (SDG-)ESG data points, lack of transparency for the ESG rating methodologies, and the lack of regulation.[7] *Boffo* and *Patalano* indicate that ESG ratings vary strongly depending on the provider chosen thanks to different frameworks, measures, key indicators and metrics, data use, qualitative judgement, and weighting of subcategories.[8] The variations in ESG scores among different ESG rating providers imply potential problems involving the reliability problem of the current ESG scores. The recent regulation attempts for the ESG rating agencies in the EU and the UK have both targeted to solve this problematic outlook. Moreover, ESG investing also attracts suspicions from the performance perspective of some (institutional) investors and public companies. Suggesting some mixed theories and evidence sets, the theoretical and empirical literature does not involve a consensus on the positive value effect of ESG investing.[9] Although the majority of the empirical evidence suggests a potentially positive link between CSP (ESG) and CFP, companies are aware that this relation may be sensitive to sample, period, and modelling selection strategies.

Growing Demand for ESG Products

Despite these concerns, strong investor demand for ESG products and newly emerging ESG-related regulation attempts imply that ESG has become a new centre of intangible value creation and non-financial risk management practices in corporations. These trends result in a booming ESG-related asset volume. According to PwC's Asset and Wealth Management Revolution 2022 report,[10] asset managers globally are expected to increase their ESG-related assets under management (AuM)

1 Cornell/Damodaran, Valuing ESG: Doing good or sounding good?, NYU Stern School of Business, 20.03.2020, » Link (last access 20.02.2024).
2 An opposite view, Edmans, The end of ESG, Financial Management, vol. 52, no. 1 (2023): 3-17.
3 Lindsey/Pruitt/Schiller, The cost of ESG Investing, Arizona State University, 05.07.2023, » Link (last access 20.02.2024).
4 Pucker/King, ESG Investing Isn't Designed to Save the Planet, Harvard Business Review, 01.08.2022, » Link (last access 20.02.2024).
5 Rousseau, ESG Overview and Trends, LSU Journal of Energy Law and Resources Symposium, 27.01.2023, » Link (last access 20.02.2024).
6 The Conference Board, 2023 Proxy Season Review: Navigating ESG Backlash & Shareholder Proposal Fatigue, 2023, » Link (last access 20.02.2024).
7 IOSCO, Environmental, Social and Governance (ESG) Ratings and Data Products Providers, Final Report, 2021, » Link (last access 20.02.2024).
8 Boffo/Patalano, ESG Investing: Practices, Progress and Challenges, OECD Paris, 2020, » Link (last access 20.02.2024).
9 Lindsey et al. indicate that despite extensive research, there is widespread disagreement in the literature on the return predictability of ESG characteristics, see: Lindsey/Pruitt/Schiller, op. cit. (footnote no. 2).
10 PwC, Asset and Wealth Management Revolution 2022 report, » Link (last access 20.02.2024).

to $33.9tn by 2026, from $18.4tn in 2021. With a projected compound annual growth rate (CAGR) of 12.9%, ESG assets are on pace to constitute 21.5% of total global AuM in less than 5 years. It is also indicated in the Russell Investments' 2023 Manager ESG Survey[11] that only 7% of the global survey respondents said that ESG factors do not drive investment decisions. Moreover, ECI Partners in their Growth Characteristics 2022 report shows that 74% of 500 U.K. CEOs sampled now hold ESG as equally important as financial performance.

This continued attention should come as no surprise. 2023 has been marked by some of the biggest disruptions to both people and the planet, with extreme climate change-related events causing widespread destruction and disruption. Now more than ever, companies are navigating a Volatile, Uncertain, Complex, and Ambiguous (VUCA) world.[12] More than ever ESG risk management and value transmission mechanisms seem a new normal for local and global companies.

III. ESG and Company Valuation

The rise of ESG has started in the early 2000s. However post-Global Financial Crisis period and the COVID-19 era have played a catalyzing role. The changing investment landscape towards a more sustainable way brings into consideration several practical problems. Developing an ESG-sensitive valuation framework is one of the ongoing concerns in this process.

IVSC and RICS underline that in the ESG-sensitive valuation of private companies, considerations include the impact on cash flows, cost-benefit balance, and long-term implications on the cost of capital.[13] The ESG characteristics affect company value in two main interconnected transmission channels: the cash flow and risk.[14] The optimistic perception of the long-term value impact of ESG is pictured in Figure 1. Although theoretical and empirical literature does not necessarily support this, one may expect that ESG investing may have a positive value impact based on the increasing cash inflow and declining cost of capital. Both channels may eventually result in increasing predictability in future cash flows with declining risk perception. Below we briefly review the value impact of each transmission channel.

Figure 1. An Optimistic ESG Value Transmission Channels

1. Cash-Flow Transmission Channel

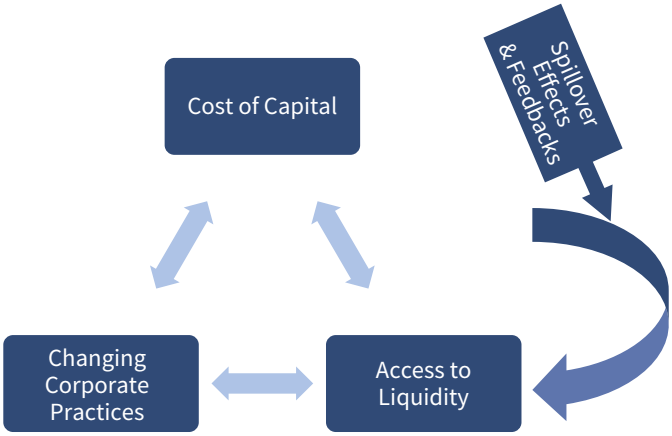
ESG factors can affect a company's cash in/out flow by influencing the investment costs, consumer preferences, investor decisions, and regulatory requirements. These factors may collectively contribute to ESG-related income flows and intangible asset formation. In the short term, ESG investing requires cash outflows besides its organizational and cultural impacts. The survey of the Sustainability Institute by ERM found that on average corporate issuers are spending $533,000 annually only on climate-related disclosure, while institutional investors are spending an average of $1,372,000 annually to collect, analyze, and report climate data to inform their investment decisions.[15]

Companies with strong ESG performance may attract more loyal customers and talents, secure investments from socially responsible investors, or benefit from government incentives, leading to increased cash flow with lower risk perception. This positive scenario can help create additional long-term value. Supposedly positive perception in investors may also create some behavioral impact on the value. IVSC and RICS discuss that "valuation professionals categorise the impact of ESG on valuation into 'hard' and 'soft' impacts.[16] Hard impacts directly influence cash flows through identifiable risks or opportunities. Soft impacts, involve the subtler task of appraising investor sentiment towards ESG-positive businesses, which might not be directly reflected in valuations." Although there is no consensus on stock/accounting performance benefits of ESG, the majority of the studies suggest a positive relation.[17] For example, *Eccles* et al. discuss that that high-sustainability companies significantly outperform their counterparts in both stock market and accounting performance over the long term.[18] *Caldecott* et al. argue that "sustainable firms or projects would need to have greater or easier access to capital than their unsustainable peers.[19] Firms with easier access to liquidity from a wide pool of investors are also more likely to face a lower cost of capital and to have corporate practices acceptable to the market. From an industry perspective, it is indicated in the U.S. Securities and Exchange Commission's (SEC) proposed "Rules on Enhancement and Standardization of Climate-Related Disclosures for Investors" that climate-related risks are linked to negative impacts on financial performance. However, climate-related disclosures may reduce investors' uncertainty about estimated future cash flows and lower the risk premium and cost of capital by reducing information asymmetry, and adverse selection problems and improving liquidity. This may make it easier to raise equity and debt or to obtain loan financing.[20] This positive informational signal may contribute to long-term value creation and may be related

11 Russell Investment, 2023 Manager ESG Survey: Climate risk dominates, » Link (last access 20.02.2024).
12 Thomson Reuters Institute, The 2023 State of Corporate ESG: At the crossroads of data, regulations, and digital solutions, 2023, » Link (last access 20.02.2024).
13 IVSC/RICS, Future Of Valuations: The Impact of ESG, 2023, » Link (last access 20.02.2024).
14 El Ghoul/Guedhami/Kwok/Mishra, Does Corporate Social Responsibility Affect the Cost of Capital?, Journal of Banking and Finance, vol. 35, no. 9 (2011): 2388-2406, » Link (last access 20.02.204); Gregory/Tharyan/Whittaker, Corporate Social Responsibility and Firm Value: Disaggregating the Effects on Cash Flow, Risk and Growth, Journal of Business Ethics, vol. 124, no. 4 (2014): 633-657, » Link (last access 20.02.2024).
15 ERM Sustainability Institute, Survey reveals costs and benefits of climate-related disclosure for companies and investors, 2022, » Link (last access 20.02.2024).
16 IVSC/RICS, op. cit. (footnote no. 12).
17 Friede/Busch/Bassen, ESG and financial performance: aggregated evidence from more than 2,000 empirical studies, Journal of sustainable finance & investment, vol. 5, no. 4 (2015): 210-233.
18 Eccles/Ioannou/Serafeim, The Impact of Corporate Sustainability on Organizational Processes and Performance, Management Science, vol. 60, no. 11 (2014): 2835-2857.
19 Caldecott/Harnett/Koskelo/Wilson/Liu, Sustainable Finance and Transmission Mechanisms to the Real Economy, University of Oxford Smith School of Enterprise and the Environment, Working Paper, 19.04.2022, » Link (last access 20.02.2024).
20 SEC, The Enhancement and Standardization of Climate-Related Disclosures for Investors, 2022, » Link (last access 20.02.2024).

to interconnected factors of cost of capital, access to liquidity and changing corporate practices more sustainably (see, Figure 2).

Figure 2. ESG Transmission Mechanism Interdependencies



Source: Caldecott et al.[21]

2. Risk Transmission Channel

The second transmission channel of ESG value is related to firm-level risks. The integration of ESG may have a positive impact on risk management and corporate governance quality and hence may result in a lower cost of capital (WACC). Within a DCF model, systematic risk is typically captured through the cost of capital (i.e., the denominator in the DCF model). In contrast, firm-specific risk is linked to the numerator of the DCF model, that is, future cash flows.[22] In this respect, ESG integration may contribute to corporate value by better risk management practices for firm-wide risks. Increases in risk management quality by integrating non-financial risk management practices may play a pivotal role in the declining cost of capital. *Cornell* and *Damodaran* also argue that the evidence that socially responsible firms have lower discount rates, and thereby investors have lower expected returns, is stronger than the evidence that socially responsible firms deliver higher profits or growth.[23]

However, composed of the weighted average of the cost of equity and cost of debt, the cost of capital varies depending on a broad set of macroeconomic and financial variables besides firm-specific factors including ESG impact. These factors also look highly volatile due to the cyclical nature of the general economy and firm/industry-specific factors. The life cycle stage (i.e. startup, growth, mature) and the nature (i.e. public/private, developed/emerging market or asset class of the firm) of the firm have also affected the external financing costs and hence the cost of capital. Although the cost of capital impacts of the social dimension of ESG is still in an emerging debate in the literature, the strong corporate governance, representing the G-investing in ESG framework, may be regarded as a lower cost of equity and cost of debt.[24] Some empirical evidence also supports that E-investing and ESG investing may result in a decline in financing costs.[25] From an E-investing perspective, using data for 13,114 firms for the period 1992–2007, *Chava* finds that lending institutions charge a significantly lower interest rate on bank loans for environmentally responsible firms.[26] *Kling* et al. provide evidence that companies in countries with greater exposure to climate risks exhibit higher financing costs and are financially more constrained.[27] From the aggregated ESG perspective, *Ng* and *Rezaee* suggest that non-financial sustainability performance is also negatively related to the cost of equity.[28] *Eliwa* et al find that firms with stronger ESG performance have a lower cost of debt, and ESG disclosure has an equal impact on the cost of debt as ESG performance.[29] Practitioners typically adjust the discount rate and the long-term growth rate in ESG-sensitive valuation implying the long-term impact of ESG factors on company cash flows.[30] However, this impact may depend on several factors such as age, size, industry, firm-specific ESG material factors,[31] the volume of ESG disclosure, and even some unethical corporate actions (i.e. carbon washing, greenwashing).

As usual in an emerging literature context, some studies find no relation between ESG metrics and the cost of capital. *Bofinger* et al. show that an ESG engagement may result in misvaluation as it increases a firm's market valuation relative to its true value.[32] This may be related to reflecting the positive sentiment of external stakeholders on the value.[33] Moreover, although there is a consensus that quality information is associated with a low cost of capital and low financial constraints, noisy ESG information may result in a higher cost of capital and financial constraints.[34] Eventually, besides estimating higher cash inflows, the selection of the lower cost of capital may also play a catalysing role in overestimation of ESG-sensitive value.

Therefore, considering the empirical literature reveals mixed evidence on the risk transmission channel of ESG investing, we may conclude that the lower risk and the lower cost of capital effects of ESG investing is not a rule but may depend on the firm-specific environment.

21 Caldecott/Harnett/Koskelo/Wilson/Liu, op. cit. (footnote no. 18).
22 Giese/Lee/Melas/Nagy/Nishikawa, Foundations of ESG investing: How ESG affects equity valuation, risk, and performance, The Journal of Portfolio Management, vol. 45, no. 5 (2019): 69-83, » Link (last access 20.02.2024).
23 Cornell/Damodaran, op. cit. (footnote no. 1).
24 Bozec/Bozec, Corporate governance quality and the cost of capital, International Journal of Corporate Governance, vol. 2, no. 3/4 (2011): 217-236; Tran, Multiple corporate governance attributes and the cost of capital – Evidence from Germany, The British Accounting Review, vol. 46, no. 2 (2014): 179-197.
25 An opposite view, Goldstein/Kopytov/Shen/Xiang, On ESG investing: Heterogeneous preferences, information, and asset prices, National Bureau of Economic Research, April 2022, » Link (last access 20.02.2024).
26 Chava, Environmental externalities and cost of capital, Management Science, vol. 60, no. 9 (2014): 2223-2247.
27 Kling/Volz/Murinde/Ayas, The impact of climate vulnerability on firms' cost of capital and access to finance, World Development, vol. 137 (2021), 105131.
28 Ng/Rezaee, Business sustainability performance and cost of equity capital, Journal of Corporate Finance, vol. 34 (2015): 128-149.
29 Eliwa/Aboud/Saleh, ESG practices and the cost of debt: Evidence from EU countries, Critical Perspectives on Accounting, vol. 79 (2021), article 102097.
30 Bancel/Glavas/Karolyi, Do ESG factors influence firm valuation? Evidence from the field. Evidence from the Field, 20.02.2023, » Link (last access 20.02.2024).
31 Ahn/Patatoukas/Skiadopoulos, Material ESG Alpha: A Fundamentals-Based Perspective. The Accounting Review (2024): 1-27.
32 Bofinger/Heyden/Rock, Corporate social responsibility and market efficiency: Evidence from ESG and misvaluation measures, Journal of Banking & Finance, vol. 134, (2022), article 106322.
33 Bancel/Glavas/Karolyi, op. cit. (footnote no. 29).
34 García-Sánchez/Hussain/Khan/Martínez-Ferrero, Do markets punish or reward corporate social responsibility decoupling?, Business & Society, vol. 60, no. 6 (2021): 1431-1467.

3. The Challenges of Quantifying ESG

a) Valuation Approaches and ESG Integration: Role of Income Approach

Considering the value of a company entails accounting for sustainability-related risks and opportunities that often elude conventional financial reporting. With the ongoing evolution of sustainability reporting standards, forecasting the trajectory of ESG valuation proves to be a complex task. Nonetheless, envisioning a spectrum of plausible scenarios that are both actionable and insightful for investors to assess and analyze remains feasible. After the company has identified its ESG risks and opportunities based on its materiality map, it falls upon the valuation professional to determine how to integrate these factors into adjustments for projected financial performance.

From a real estate valuation perspective, *Aronsohn* argues that *"discounted cash flow (DCF) analysis is very well suited to quantifying ESG factors within a real estate valuation because a DCF can explicitly reflect specific assumptions which relate to income, expense, capital expenditures and exit yields and vacancies over years."*[35] This argument specifically seems valid for quantifying the financial impact of E-investing in the built environment due to its well-established measurement procedures. However, quantifying the financial impact of G-investing specifically S-investing in real estate is still evolving in industry and academic circles. For example, Cambridge Centre for Housing and Planning Research and Womble Bond Dickinson indicate despite the evidence that ESG practices are impacting the built environment sector in the UK, there are gaps in the evidence regarding the social and governance elements of ESG requiring further definition and consistent measurement practices, as found with environmental commitments.[36]

From a business valuation perspective, there is no one-size-fits-all approach to integrating ESG but taking into account that the cost approach is used in valuation only in special circumstances and the challenge to employ the market approach due to the lack of comparable ESG-sensitive market transactions, it seems that the income approach is also the best option among the traditional valuation approaches for integrating ESG factors into business value.

b) Possible Financial Impacts of ESG Integration

In today's ESG-conscious landscape, incorporating the value of sustainability initiatives often means creating two scenarios: one baseline scenario without ESG effects and another with ESG strategies impacting operations (see Box 1).

Box 1. With or Without You: ESG Impact Scenarios for Companies

Baseline Scenario

In the baseline scenario, the firm operates without specific ESG strategies influencing its active operations. Traditional business practices are followed, focusing primarily on accounting performance metrics such as revenue growth, cost reduction, and profit maximization. In this traditional case, ESG considerations are not explicitly integrated into decision-making processes. The firm's valuation is based solely on financial factors, with no adjustment for potential ESG-related impacts on future cash flows or risk.

ESG Impact Scenario

In the ESG impact scenario, the firm actively incorporates ESG strategies into its operations, such as reducing carbon emissions, improving workplace diversity, and enhancing business ethics practices. These initiatives are expected to yield various benefits, including cost savings from energy efficiency measures, enhanced brand reputation leading to increased customer loyalty, and reduced regulatory risks. Consequently, the firm's financial performance may be influenced by these ESG-related factors, leading to adjustments in revenue forecasts, cost projections, and risk assessments. Investors and analysts may utilize ESG-specific metrics and frameworks to evaluate the firm's performance and assign a positive/negative premium to its valuation based on its sustainable practices and long-term resilience to ESG-related challenges.

The financial impacts of ESG strategies on fundamental valuation variables should be initially estimated by the management. This work should also reflect intangible costs and benefits of ESG policies on critical value-effective items such as market share, sales, product/service pricing, profitability, financing cost, corporate governance quality, and customer and employee loyalty. As indicated by KPMG, among others, the final output of this ESG-sensitive forecasting is mainly to determine ESG-sensitive free cash flow, discount rate, and hence enterprise value.[37] However, the process of adjusting cash flow and discount rates to account for ESG risks and opportunities currently resembles more of a skilled craft than an exact science or an art.

c) The Challenges of ESG Integration in Valuation

Despite the supposedly positive value contribution of ESG, existing valuation literature does not provide a clear answer for integrating ESG factors into valuation. From the accounting and financial reporting perspectives, the standards of ESG impacts on financial tables are also not fully clear. From the literature perspective, for example, *Schramade* indicates that the value impact of ESG integration is still challenging.[38] The following questions asked by the author mostly remain unanswered: "How should an analyst take into account issues like management quality, tail risks, and the timing of the impact? That is, how long does it take specific sustainability factors (i.e. materiality framework, KPI) to impact corporate financial performance? And how long does that impact last? How does it differ per type of ESG issues?"

In this emerging framework, each solution attempt usually comes with its possible limitations. For example, *Huang* discusses that ESG activity may affect firm valuation through prospective capital and operational expenditure, and the financial benefits that such expenditure may bring.[39] However, the practical incorporation of ESG factors in cash flow and discount rate

35 Aronsohn, Unlocking the Value of ESG, The European Valuation Magazine, vol. 1, no. 1 (2022): 26-36.

36 Cambridge Centre for Housing and Planning Research/Womble Bond Dickinson, ESG: Investing in the built environment, 2023, » Link (last access 20.02.2024).

37 KPMG, Incorporating an ESG lens in business valuations, 2020, » Link (last access 20.02.2024).

38 Schramade, Integrating ESG into valuation models and investment decisions: the value-driver adjustment approach, Journal of Sustainable Finance & Investment, vol. 6, no. 2 (2016): 95-111.

39 Huang, Environmental, social and governance factors and assessing firm value, Accounting & Finance, vol. 62 (2022): 1983-2010.

forecasts is not obvious. As a solution to integrate ESG factors into discount rate calculation, the equity discount rate may be adjusted based on an ESG-adjusted capital asset pricing model (CAPM). For example, as a rare study in the literature, *Pedersen* et al. derive an ESG-adjusted CAPM.[40] But, like other measurement problems of ESG valuation, the theoretical and empirical literature is also still emerging in this specific discussion.

Inard discusses that due to materiality, valuation practitioners do not systematically address the ESG topic in valuations.[41] CFA Institute suggests that to determine the materiality of ESG information, analysts might rely on a materiality framework developed by a third party, a firm's proprietary framework, or their judgment and they consider sector/industry, company-specific factors, location, governance, climate change and investment horizon as the fundamental components.[42] However using qualitative considerations in firm valuation inevitably results in additional subjectivity problems in valuation.[43]

IV. IVS and ESG-Sensitive Valuation

Besides emerging literature, industry practices, accounting and reporting standards, the rule-making on ESG valuation is also evolving. Recently, IVS has broadened its scope to incorporate ESG considerations into valuations for all assets and liabilities. IVS suggests that valuers should be knowledgeable about pertinent legislation and frameworks concerning the ESG factors that influence valuation outcomes.[44] It is also indicated in the IVS' public announcement that "impact on valuation is still in development and additional requirements may be needed".[45]

Effective 31.01.2025, the updated IVS involves several measures to address ESG consideration in the following sections: Glossary, IVS 103 Valuation Approaches, Appendix, IVS 104 Data and Inputs Appendix, IVS 300 Plant, Equipment, and Infrastructure, IVS 400 Real Property Interest, and IVS 410 Development Property. Among these updates, the IVS 104 involves a detailed rule-making for the ESG integration into the valuation process. As seen in the below Box 2, the IVS explicitly indicates that ESG is the very fundamental variable in valuation.

Box 2. Selected ESG Rules in IVS Effective 31.01.2025

Glossary

10.08. Environmental, Social and Governance (ESG)
The criteria that together establish the framework for assessing the impact of sustainability and ethical practices, financial performance or operational of a company, asset, or liability. ESG comprises three pillars: Environmental, Social and Governance, all of which may collectively impact performance, the wider markets and society.

IVS 103 Valuation Approaches: Appendix

A10.08. The valuer should analyze and make adjustments for any significant differences between the comparable transactions and the subject asset. Examples of common differences that could warrant adjustments may include but are not limited to:
(a) material characteristics (age, size, specifications, etc),
(b) size adjustments,
...
(l) differences in ESG considerations,

IVS 104 Data and Input: Appendix

A10.01. The impact of significant ESG factors should be considered in determining value of a company, asset, or liability.
A10.02. ESG factors may impact valuations both from a qualitative and quantitative perspective and may pose risks or opportunities that should be considered.
A10.06. ESG factors and the ESG regulatory environment should be considered in valuations to the extent that they are measurable and would be considered reasonable by the valuer applying professional judgement.

IVS 300 Plant, Equipment, and Infrastructure& IVS 400 Real Property Interest

100.06. Significant ESG factors associated with the value of an asset should be considered as part of the data and input selection process.

IVS 410 Development Property

120.06 Significant ESG factors associated with the value of an asset should be considered as part of the data and input selection process.

V. Conclusion

As an answer to the growing need for ESG-sensitive valuation, the recently updated IVS involves several ESG-sensitive valuation rules. This new rule set shows the recognition of the importance of ESG-based intangible value formation by the IVS besides other valuation initiatives such as the RICS Red Book and The International Private Equity and Venture Capital Valuation (IPEV) Valuation Guidelines. However, despite some technical improvements in defining ESG-sensitive value, newly issued rules do not provide specific solutions to the ongoing ESG valuation problems such as measurement problems in S-investing. Moreover, it has also no specific ESG considerations for some critical valuation variables such as (terminal) capitalisation rate, discount rate, and useful life. IVS provides broad discretion and responsibility for the valuation professional to estimate ESG-sensitive value. As indicated in the new rules professional judgement of the valuer and qualitative perspective matters in ESG sensitive value search.

ESG-sensitive valuation is still in its infancy. Integrating ESG factors into valuation decision-making implies a challenge specifically in terms of future cash flow and cost of capital projections. The scarcity of comprehensive ESG information, measurement problems and skills gap in valuation professionals may exacerbate the valuation challenge. But, in such an early stage of development, the more explicit rules may not properly address ongoing problems and newly evolving market dynamics in ESG valuation. Taking into account that emerging ESG valuation literature also does not help much in solving ESG valuation problems, we believe that the new IVS rules may play a significant role in improving ESG awareness in the valuation industry despite its gaps. ◆

40 Pedersen/Fitzgibbons/Pomorski, Responsible investing: The ESG-efficient frontier, Journal of Financial Economics, vol. 142, no. 2 (2021): 572-597.
41 Inard, in: Glavas (editor), Valuation and Sustainability: A Guide to Include Environmental, Social, and Governance Data in Business Valuation, (2023): 99-128).
42 CFA Institute, Guidance For Integrating ESG Information Into Equity Analysis and Research Reports, Nov. 2022, » Link (last access 20.02.2024).
43 Huang, op. cit. (footnote no. 37).
44 IVSC, IVS Exposure Draft (2023), » Link (last access 20.02.2024).
45 IVSC, New edition of the International Valuation Standards (IVS) published, » Link (last access 20.02.2024).

Cost of Capital Study 2023:

Unpredictability on the Rise! – Interest Rates Too? What Are the Drivers, What Are the Consequences?

Recently the 18th edition of KPMG's Cost of Capital Study was published. As in previous editions, the study presents current developments regarding the preparation of business plans and the derivation of cost of capital, as well as its relevance for company values and company value developments. The study entitled "Unpredictability on the rise! – Interest rates too? What are the drivers, what are the consequences?" examines the impact of increased uncertainties and accompanying interest rate and inflation developments on business models, corporate development and long-term return expectations (cost of capital), based on sector-specific analyses. This year's response rate demonstrates once again the high practical relevance of the annual Cost of Capital Study. In total, 322 companies participated in this year's Cost of Capital Study. Of the participating companies, 240 are based in Germany, including 65 percent of the DAX-40 companies.

Stefan Schöniger, WP/StB

Partner, Deal Advisory – Valuation, KPMG AG WPG, Hamburg. His main areas of expertise are expert opinions on company valuations, in particular in the context of (corporate) legal structural measures in accordance with the German Stock Corporation Act and the German Reorganization Act, as well as fairness opinions in the context of public transactions.

Heike Snellen

Director, Deal Advisory – Valuation, KPMG AG WPG, Dusseldorf. Her main areas of expertise are the analysis of young, innovative business models and handling the associated challenges in the implementation of transaction-related, accounting-related and expert company valuations.

Dr. Andreas Tschöpel, CVA/CEFA/CIIA

Partner, Deal Advisory – Valuation, KPMG AG WPG, Berlin, member of the expert committee for business valuation and business administration (FAUB) and member of the board of EACVA e.V. His main areas of expertise are the conceptualization of value-oriented management systems as well as risk and portfolio analyses using simulation models in strategic and objectified company valuations.

Contact: ebvm@eacva.de

I. Preliminary remarks

The (increasingly short-term) succession of crises – with corresponding negative economic impacts – has continued in the past year following the Covid-19 pandemic with Russia's war against Ukraine and, most recently, the conflicts in Israel. A mid-term analysis of the major regional economies to forecast their future economic developments continues to be increasingly difficult due to the numerous and in some cases overlapping special effects. Further key topics of the study are:

- Growing divergence? Hypotheses on the different development of global economic areas
- Inflation unleashed? Central Banks' interaction with the capital markets
- Navigating increasing uncertainty? Development of market return expectations in turbulent times

The companies were surveyed between April and July 2023. The reporting dates for the consolidated financial statements shown in the study were between 30 September 2022 and 30 June 2023.

The collection of empirical information continues to be based on the IFRS impairment test, as this test itself and its related valuations are mandatory for all IFRS users.

The study continues to include extensive analyses by sector and sub-sector as well as evaluations by family and non-family businesses. The key findings of the study are presented below. Further explanations and analyses on issues relating to business plans, cost of capital, inflation and ESG can be found in the Cost of Capital Study 2023, which you can view or download via this link. As in previous years, an interactive version of the Cost of Capital Study is available on our website at Cost of Capital Study 2023 Tableau. This allows you to compile your own parameters relevant to your company and/or industry so that you can obtain a personalized industry assessment. A comprehensive overview of the development of the cost of capital over the last ten years can be accessed through this link: KPMG Valuation Data Source.

II. Results of the current study at a glance

Planning horizon: The results of the study show that, compared to last year's study, there is a trend towards shorter planning horizons. Reasons for this development could be considerable planning uncertainties due to geopolitical crises, as well as high inflation rates and rising interest rates.

Growth expectations: The current market environment is characterized by increased uncertainty. This has different impacts on growth expectations for sales and EBIT (Earnings Before Interest and Taxes). Overall, the expected average sales growth decreased by 0.1 percentage points to 5.6 percent, while the expected average EBIT growth has increased by 3.0 percentage points to 9.4 percent. The highest EBIT growth expectations are observed in the Technology, Chemicals & Pharmaceuticals and Transport & Leisure sectors.

Inflation expectations: During the survey period, the majority of participating companies expect that company-specific inflation rates in the short-term are significantly above the European Central Bank's mid-term, consumer-oriented inflation target of 2.0 percent. In the medium to long term, the majority of participants expect company-specific inflation rates between 1.0 percent and 3.0 percent.

Planning uncertainty: Reliable forecasts are becoming more and more difficult due to the increasingly short-term succession of crises with corresponding negative economic effects. Around 70 percent of the participating companies stated that the increasing economic uncertainty is having a negative impact on their business planning.

WACC: The weighted average cost of capital (WACC) across all sectors is 7.9 percent, which is significantly higher than the previous year's level of 6.8 percent. The highest WACC was recorded in the Technology (9.2 percent), Automotive (8.3 percent) and Industrial Manufacturing (8.1 percent) sectors. The lowest WACC of 6.0 percent can be observed in the Energy & Natural Resources sector and in Real Estate, Healthcare and Media & Telecommunications sectors at 7.6 percent.

Risk-free rate: During the survey period, the risk-free rate used by participating companies increased from 0.3 percent to 1.9 percent. After the survey period, the risk-free rate in Germany further rose to 2.5 percent at the end of September 2023. In Austria and Switzerland, the risk-free rate at the end of September 2023 was 2.96 percent and 0.9 percent, respectively.

Market risk premium: The market risk premium applied by participating companies decreased by 0.3 percentage points to 6.9 percent compared to the previous year. More than half of the study participants located in Germany applied a market risk premium of over 7.0 percent. The reduced market risk premium thus only partially offset the increase in the risk-free rate. The market risk premium falls within the range of 6.0 percent to 8.0 percent recommended by the expert committee for business valuation and business administration ("Fachausschuss für Unternehmensbewertung und Betriebswirtschaft (FAUB)") of the Institute of Public Auditors in Germany ("Institut der Wirtschaftsprüfer (IDW)").

Beta factors: During the survey period, the average unlevered beta factor of all participating companies was 0.85 which corresponds to a marginal decrease of 0.01 compared to the previous year. The highest unlevered beta factors were observed in the Technology (1.02) and Automotive (0.99) sectors. Energy & Natural Resources (0.59), Transportation & Leisure (0.71) and Healthcare (0.74) sectors exhibited the lowest unlevered beta factors.

Cost of debt: Compared to the previous year, the average cost of debt increased by 1.8 percentage points to 3.8 percent, corresponding to the development of the risk-free rate. The implied average credit spread (difference between the debt interest rate and the risk-free rate) was 1.9 percent in Germany during the survey period.

Impairment test: Following a decline in the number of companies that recognized an impairment on goodwill or assets in the past year, this year's study shows a slight increase in impairments. Possible reasons for this development could be attributed to the economic impacts of the numerous geopolitical crisis situations as well as higher interest rates and inflation.

Triggering event: One third of the participating companies carried out an unscheduled impairment test based on a so-called triggering event. As already anticipated in our previous year's study, the number of triggering events caused by higher costs of capital has significantly increased due to elevated return expectations.

Monitoring: The majority of participants continue to consider value-oriented monitoring of investment decisions to be important and observe a change in performance (planning) rather than risks (return expectations/cost of capital). However, compared to the previous year, the proportion of participants who primarily consider changes in risks has increased.

Sustainability: Compared to the previous year, the importance of ESG issues has slightly decreased in most sectors, particularly in the Automotive sector. It remains to be seen whether that is because other issues are currently taking precedence due to the various crisis situations or whether the decline is attributed to measures that have already been implemented.

Below, we would like to delve into the topics of "WACC", "increased uncertainty and persistently high inflation rates" and "ESG" in more detail.

III. Selected results in detail

1. WACC

After a slight increase in the WACC from 6.6 percent to 6.8 percent in the previous year, a significant increase to 7.9 percent can be observed in the current survey period. This increase is also reflected in the individual sectors.

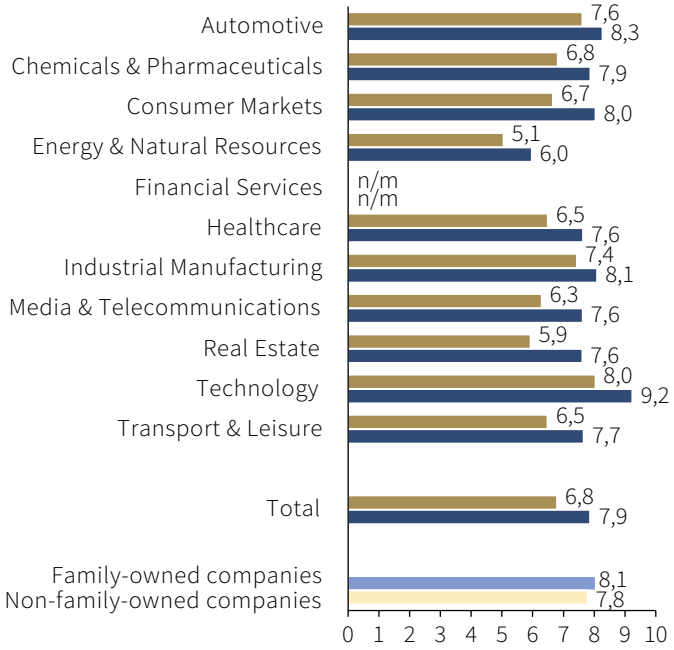
Similar to the previous year, the highest WACC was observed in the Technology (9.2 percent), Automotive (8.3 percent) and Industrial Manufacturing (8.1 percent) sectors. Thus, it continues to concern industries where political requirements and technology-related changes to business models have a fundamental impact.

Compared to the previous year, the most significant increase in WACC can be observed in the Real Estate (+ 1.7 percentage points), Media & Telecommunications (+ 1.3 percentage points), and Consumer Markets (+ 1.3 percentage points) sectors. However, no industry shows a decrease in WACC.

2. Increased uncertainty and persistently high inflation rates

The forecast of future economic developments in large regional economic areas is becoming increasingly challenging due to the complexity arising from various crises such as the Covid-19 pandemic, geopolitical tensions, environmental challenges and rising interest rates. These crises are leading to numerous overlapping special items. One aspect already described in previous issues of our Cost of Capital Study – that the global economy continues to evolve in a state in which new crises emerge before the effects of the previous crises have been resolved – has tended to intensify. Negative effects may therefore accumulate increasingly. The result is a higher overall economic uncertainty. Around 70 percent of the participating companies have indicated that economic uncertainty has a negative impact on their business planning. However, the majority of participating companies do not see this as a reason to adjust their planning process.

Figure 1: WACC (after corporate taxes) by industry



Source: KPMG 2023

Inflation rates at record levels have recently contributed to general economic uncertainty. In the current survey period, the majority of participating companies expect company-specific inflation rates in the short term to be significantly above the European Central Bank's mid-term, consumer-oriented inflation target of 2.0 percent. The main reasons for this are higher energy prices, scarcity of raw materials, and geopolitical crises such as the Russian war against Ukraine. It is noticeable that short-term inflation expectations have declined in the meantime, but long-term inflation expectations – measured against the central banks' inflation target of 2.0 percent- have solidified at a significantly higher level.

3. ESG still in focus

In recent years, the consideration of ESG factors (Environmental, Social, Governance) has become a crucial success factor for companies, employees, and shareholders across all sectors. ESG encompasses a variety of environmental, economic, social, and political issues and challenges. Both internal and external stakeholders are becoming increasingly interested in the impact of a company's business model on society and the environment. In addition, legal measures such as the European Green Deal, the EU Taxonomy, the Corporate Sustainability Reporting Directive (CSRD) and the Non-Financial Reporting Directive (NFRD) are increasing the pressure on companies to (re)act.

The study results indicate that the impact of ESG issues on future business development continues to hold a high significance, with the importance of ESG varying by sector. Compared to the previous year, however, the importance of ESG has decreased slightly in most industries, especially the Automotive sector. Whether other topics are currently in the foreground due to the various crisis situations or whether the decline is due to the measures already implemented remains to be seen.

KPMG

Cost of capital in real time

Researching and preparing the data for the derivation of cost of capital or multiples does not have to be an elaborate process. The KPMG Valuation Data Source calculates the WACC and multiples at the push of a button. The tool groups together all important cost of capital parameters, including country risk premiums, credit spreads, sector- and peer-group-specific beta factors as well as multiples – updated monthly in an interactive dashboard.

More information and access to the free trial version:

www.kpmg.de/en/valuation-data-source

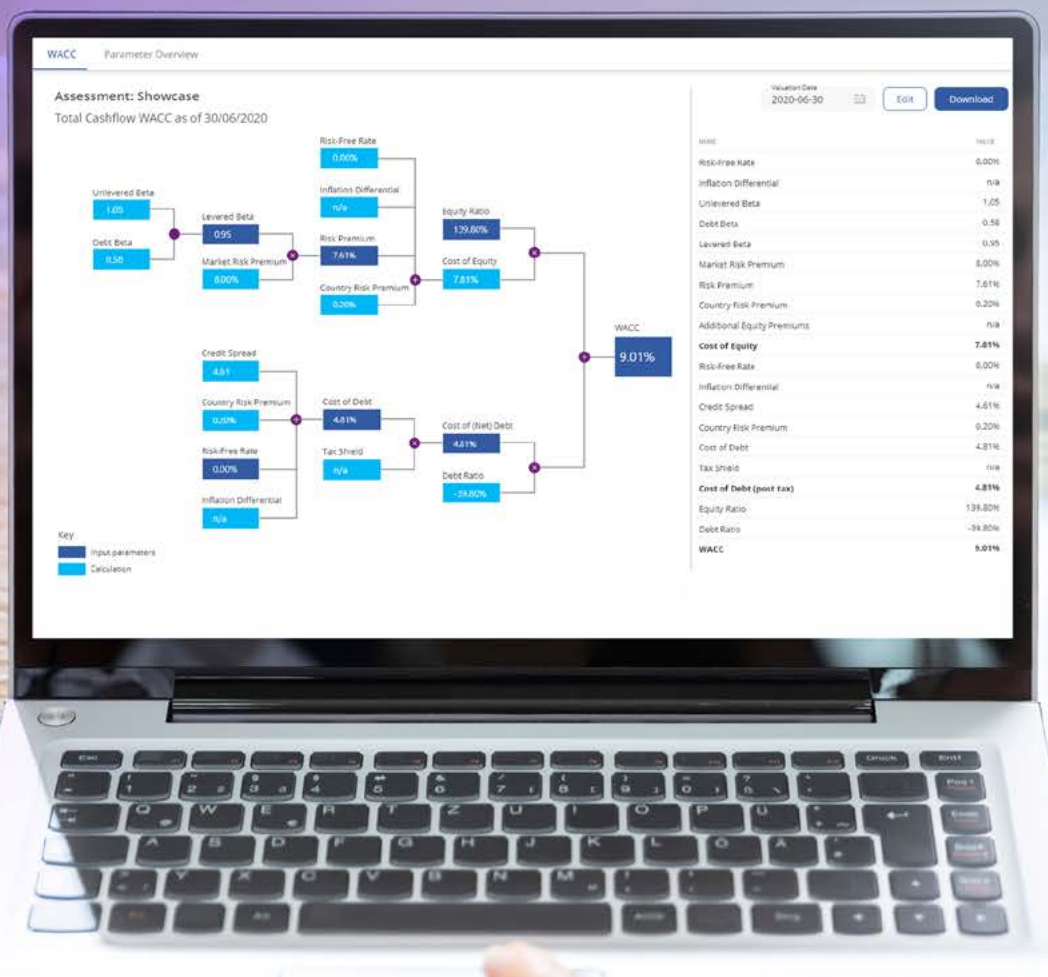
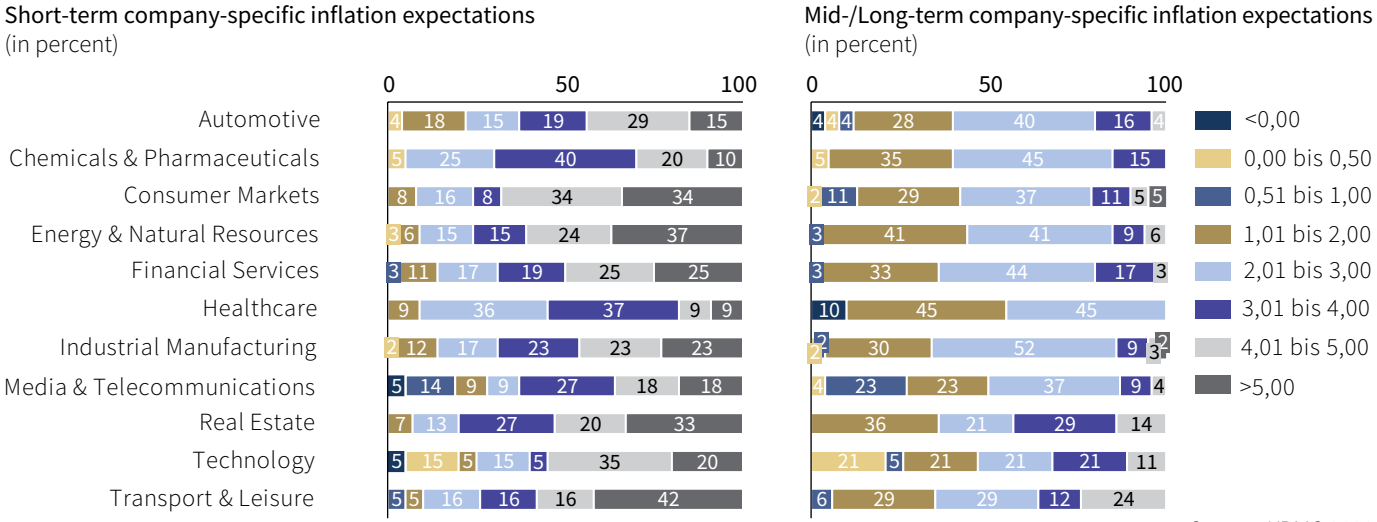
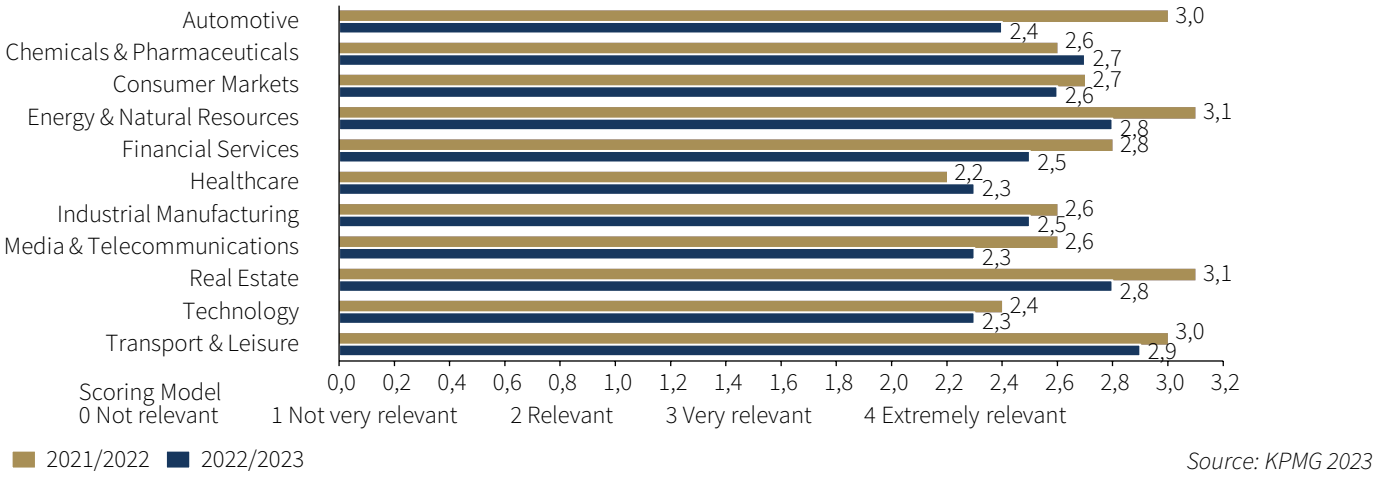


Figure 2: Company-specific inflation expectations



Source: KPMG 2023

Figure 3: Relevance of ESG issues by industry Total (Scoring)



Source: KPMG 2023

IV. Summary

The trend already described in previous editions of our Cost of Capital Study, namely that the global economy continues to approach a state where new crises emerge before the effects of previous crises are resolved, has tended to intensify. Negative effects can therefore accumulate. This makes it even more difficult to assess the specific effectiveness of measures taken by central banks and governments; the scope for action becomes limited.

However, the effects of the central banks' highly expansionary monetary policy since 2008 are clearly noticeable, leading to a significant increase in global inflation since 2021. In response to this, central banks have had to abandon their long-standing low interest rate policies. As a result, companies and market participants find themselves in a further challenging environment, confronted with rising interest rates.

The current volatile market environment is leading to increased uncertainty in corporate planning. Rising costs due to inflation and limited flexibility for price adjustments, and growing interest burdens can significantly impact the profitability of companies in certain sectors. For well-informed decisions, it is still particularly advisable to rely on scenario and simulation analyses when deriving expected company cash flows.

Capital market data is regularly used in the context of company valuations. Due to increased uncertainties, it is advisable to analyze (irrational) over- or underestimations of the markets to avoid unreflected transfers of potential market overreactions to valuations. In the current environment, the focus must be given to both the implicit inflation expectations and the risk assessments of market participants. Therefore, we recommend continuous monitoring of capital market parameters. The development of the valuation-relevant capital market parameters that we regularly collect can be accessed through the link: KPMG Valuation Data Source.

In addition, the topic of ESG should not be overlooked – despite the observed decline in importance. Companies are increasingly challenged to address ESG issues and provide meaningful ESG reporting to meet the expectations of internal and external stakeholders. ◆

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EUROPEAN ASSOCIATION OF CERTIFIED EACVA SINCE 2005 VALUATORS AND ANALYSTS

EACVA's Conference 2023 – Detailed Review

EACVA's 16th Annual International Business Valuation Conference, held on 30 November and 1 December 2023 in Berlin, marked a milestone in its history. Never before has the conference been fully booked as quickly as last year. The event attracted an esteemed audience of 400 valuation professionals from 20 different countries, firmly establishing itself as the as the largest premier convention for valuation professionals across Europe. It provided an excellent opportunity for professional exchange, networking and the promotion of industry standards.

In their welcome address, Andreas Creutzmann and Wolfgang Kniest emphasised the pivotal role of the EACVA in promoting the business valuation profession at European level, sharing information on the latest trends and supporting valuation experts in their daily work. The last few years have been challenging for business valuations, from negative interest rates to the disruptive impact of the pandemic and geopolitical unrest, the landscape of business valuation has undeniably grown more challenging. The emergence of technologies such as artificial intelligence and chatGPT presents both opportunities and challenges for valuation professionals, while the increasing discourse around environmental, social and governance (ESG) factors adds another layer of complexity. Standard setters such as the IVSC, IDW and KSW are revising their standards. What does this mean for valuation professionals in the medium term up to 2030? Central to navigating this evolving terrain is a steadfast commitment to continuing education and adaptation. EACVA is dedicated to its mission in strengthening the Certified Valuation Analyst (CVA) designation in Europe and offers a wealth of educational opportunities through conferences, seminars and webinars for members and all interested valuation professionals. But also the willingness to accept and embrace these changes. Despite the global uncertainties, EACVA's Annual Conference offers a little piece of home. For many of us, it is like a family reunion, fostering meaningful connections in the midst of the professional discourse.

One of the highlights of this year's conference was the networking dinner and show event at the Wintergarten Varieté Berlin, which offered attendees a moment of respite amidst the varied programme of 25 parallel sessions, keynotes and panel discussions led by 32 renowned speakers over two days. EACVA's conference is moving beyond the status of a mere event and becoming a dynamic platform where industry leaders, experts and enthusiasts come together to explore the latest trends, exchange ideas and define the way forward for valuation practice.

Summaries of selected presentations from the 16th Business Valuation Conference are presented below:

Dealing with Uncertainty in the Digital Age

Prof. Dr. Gerd Gigerenzer, Max Planck Institute for Human Development Berlin

Professor Gerd Gigerenzer, a leading expert in behavioural psychology and cognitive science, kicked off the event with a brilliant opening keynote. He spoke about the difference between human and artificial intelligence, vividly explaining why AI-driven algorithms and machines do not always do everything better than humans, and how we can stay in control in an increasingly automated world. AI is not simply a digital assistant, it changes us – our behavior and our values. AI performs best in stable, well-defined situations such as chess, but struggles with changing and ill-defined situations. Human intelligence differs from machine intelligence – the brain runs on 20 Watts and does not need big data. To reap the benefits of smart technology, people need to get smarter. Otherwise, we are sleepwalking into surveillance.

Matching Risk and Return: Observations on Developing Discount Rates

Roger J. Grabowski, FASA, Kroll Chicago

In his closing keynote Roger examined the considerations in measuring differences in financial risk and research in adjusting for differences in business risk – how business risk changes due to factors such as size, profit margin, expected growth, customer diversification, business concentration, age of the business. He also walked through examples of adjustments for differences in business risk.

International Valuation Standards (IVS) in Motion

Prof. Dr. Dr. h.c. Wolfgang Ballwieser, Professor emeritus Ludwig-Maximilians-University Munich / IVSC Business Valuation Standards Board

The International Valuations Standards Council (IVSC) is a non-profit organisation dedicated to establishing and promoting global valuation standards to serve the public interest. The number of its members grows continuously and amounts to more than 200 in 137 countries. Its standards have been revised in short intervals: 2017, 2020, 2022 (effective date) and an exposure draft for 2024 has been commented this year. IVS are available as optional standards in certain countries, most recently in Canada. Close observation seems to be necessary in order to reflect die development and relevance of the standards. The aim was therefore to provide insights into IVSC and IVS environment, their significance for German-speaking countries and the Exposure Draft for 2024. In addition, the commitment from the German-speaking area was treated.

Can Artificial Intelligence Algorithms (ChatGPT & Co) Appraise Companies?

StB Prof. PD MMag. Dr. Stefan O. Grbenic, CVA, Graz University of Technology / Prof. ddr. Timotej Jagrič, CQRM, University of Maribor

The presentation started with an overview on the AI algorithm toolkit including types and functions of algorithms, learning tasks and paradigms, data inference and feature types captured by the algorithms etc. Furthermore, model performance optimization was discussed. In the second part, a status quo analysis on the tasks ML algorithms have been applied in business valuation research currently was given, emphasizing on examining the capability of ML algorithms to predict company values directly (value prediction) as well as on identifying explanatory variables on predicting company values (value driver selection). In the third part, a generative model (somewhat similar to the ChatGPT algorithm) to identify the sector affiliation of companies employing neural network methodology based on www-information was presented. Accordingly, the participants gained fundamental insights into the related model mathematics, learning advances as well as the related coding (on both, the learning and the output sequences). Within all the topics, the problem of demystifying the black box in ML algorithms as well as the applicability of ML algorithms in valuation practice was discussed.

Best Practices for Alternative Investment Fund Managers Valuation Functions

Rafaël Le Saux, CFA, CAIA, CFM, FMVA, ABV, PwC Luxembourg

The presentation and evoked a few topics relevant to the Portfolio Valuation discipline, including:

- AuM of alternative investments funds are growing at a strong pace, due to demographic trends (i.e. aging population) and increased sophistication of the retail investors.
- Valuation of these funds is on the spotlight of investors, regulators, and auditors, given, among other variables, the rise of open-ended funds, where the valuation risk is more pronounced, as well as the trend of continuation funds within private markets.
- Portfolio valuation and business valuation are, despite their awful resemblance, structurally different. Portfolio valuation should be based on value creation, requires further consistency across time and investments, is directed to several stakeholders under a structured governance process, and is usually fed by information of higher quality than business valuation.
- Value creation and valuation are siblings that we (valuation professionals and academics) have cruelly separated at birth. It is long due to reunite them. There are three tools to bring them together – calibration, value creation monitoring and exit backtesting.
- Discount rate calibration is a highly valuable tool for portfolio valuation professionals, however there is a tremendous need for more guidance and literature on the subject.

- Private markets managers are not barbarians anymore. Value creation has shifted towards operational improvements and de-risking rather than deleveraging.
- Asset managers are adopting new technologies across their operations, valuation is not an exception. According to a PwC Survey, 29% of asset managers have implemented non spreadsheet technology in their valuation processes

New Calculation of Implied Equity Risk Premium for Europe

Jan Marek, CFA, ASA, European Valuation Institute Prague

In his presentation Jan Marek discussed the new method which calculates the equity risk premium for European countries. He explained how our ERP calculation solves the key issues we face when valuing smaller companies in Europe such as:

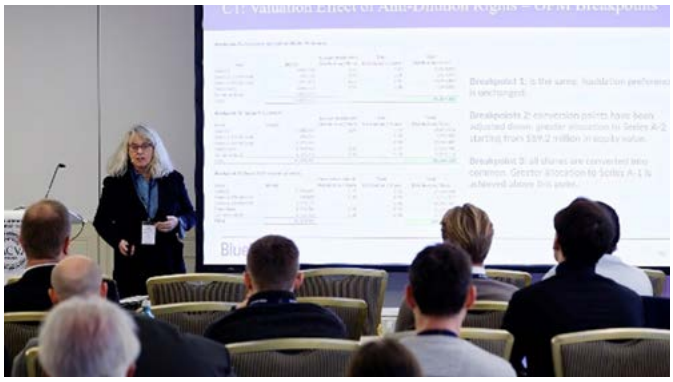
- Most ERP estimates are based on non-European data
- There are issues with country risk
- Many ERP estimates use old data
- When the whole stock index is used, some companies may distort the figures
- We lack historical data for smaller countries.

Defining Capex for Terminal Value Estimation: Theoretical and Practical Considerations

Hanna Murina, CFA, Finance Professional Kyiv

The main takeaways on this back-to-basics topic:

- The popular rule of thumb CAPEX=Depreciation is misleading and likely to produce unsustainable low CAPEX in most business valuation cases,
- What are the missing factors? These are inflation, real growth, technological progress, how old are the assets irregularities in asset replacement, and the time value of money. The proposed CAPEX normalization formula for TV estimation takes all these factors into account,
- The current IFRS disclosures on fixed assets do not give information about the distribution of remaining useful lives, which is important for the timing of future irregular CAPEX. This disclosure deficiency causes material information asymmetry in business valuation.
- Approximation with a weighted average for a group of assets used in the CAPEX normalization formula produces a more accurate estimate than the rule of thumb.



Valuation Trends in the Private Equity and Venture Capital Markets

Antonella Puca, CPA/ABV, CFA, BlueVal New York

In her presentation Antonella Puca discussed the effect of Central Bank actions during and post-Covid on the VC/PE capital markets, the new rules on adviser-led secondary transactions of private funds in the U.S. and key valuation issues such as the effect of down rounds and anti-dilution rights on the value of preferred stock, the valuation of SAFEs and how to update the pricing indication from stale rounds.

How to Deal With Inflation in DCF-Valuation? Theory & Practice

Prof. Dr. Andreas Schüler, University of the Bundeswehr Munich

Considering inflation risk properly in company valuation gains in relevance in times of high and volatile inflation. The presentation has shown the results of analyzing both valuation theory and practice regarding inflation. As the number of papers is positively correlated to the level of inflation, quite a few papers

on the topic have been published roughly between 1975 and 1985. As shown in the presentation, some of them a redundant because their version of an inflation-adjusted CAPM equals the standard CAPM. Valuation models that consistently reflect inflation risk in the definition of the free cash flows (FCF) and the risk-adjusted discount rate (RADR) were presented. The premia for inflation and business risk are derived, assuming either a deterministic real interest rate or a deterministic nominal interest rate. The links between real and nominal beta and between market risk premia in real and nominal terms are shown. The second part of the presentation showed the results of our analysis1 of how valuation practice deals with inflation especially for the terminal value, and how company value is influenced by assumptions set by practitioners (sample: 263 valuation reports written by German auditors with valuation dates between 2000 to 2021). We examine how vulnerable companies could be regarding struggles to pass on inflationary effects to their customers, and we analyze the inflation rates assumed for the steady-state (terminal value) by comparing them to different estimators for the inflation rate expected at the valuation date. We quantify the implications of using different inflation rates for future cash flow development, terminal value and the company value at the valuation date, and compare nominal reported values with company values in a (hypothetical) world without inflation. Our results question inter alia the preference for a constant company specific inflation rate of around 1% on average, and we quantify a number of value effects.

Down Rounds – Implications for the (Mis-)Valuation of Venture-Financed Firms

Prof. Dr. Bernhard Schwetzler, CVA, HHL Leipzig Graduate School of Management

Applying a simplistic post money valuation scheme in financing rounds of growth firms results in a significant overvaluation of the respective firm. The reason for this is that the investments made in these rounds come along with significant special rights as e.g. liquidation preferences, giving them a preference over the investors of earlier financing rounds. As a result the implied assumption behind post money values, that all shares have the same rights and thus carry the same value is flawed. Professor Schwetzler lined out the implications of this effect including its demonstration with an example showing a disguised "unicorn".

Mind the GAAP: Are non-GAAP metrics helpful or misleading in company valuation?

Deborah Taylor, CA, Financial Edge Training London

Key takeaways from this session were:

- Analysts are increasingly reliant on non-GAAP metrics presented by management. These metrics are not covered by accounting standards and there is a risk that these metrics create a 'shadow' unregulated accounting system.
- The focus of US and European regulations is disclosure; they require companies to provide a 'non-GAAP reconciliation' rather than prescribing how non-GAAP earnings are calculated. Despite these regulations, there is plenty of anecdotal evidence of poor disclosure and widespread use of non-GAAP metrics to overstate company performance.
- Empirical evidence on the topic goes both ways: non-GAAP earnings move markets and are, on average, more persistent and predictive than GAAP earnings. However, not all metrics and adjustments are equal: disclosure of EBITDA and disclosure of non-GAAP earnings which add back stock-based compensation expense are more likely to overstate performance and lead to overvaluation.
- Technology is separating earnings data from source documentation – data can now be extracted without the need for an analyst to scrutinize the source document. This increases the risk that non-GAAP reconciliations will be ignored.

In summary, non-GAAP metrics can be helpful to analysts... but more work needs to be done by regulators on this topic. This is important for maintaining confidence in the accounting system and to prevent non-GAAP metrics being used to mislead investors.

Save the date! EACVA's 17th Annual International Business Valuation Conference 2024 will be held on **5 and 6 December 2024** at the Maritim Hotel Düsseldorf, Germany.

1 Full analysis in English: Schüler/Wünsche, SBUR 2023, pp. 239-266; brief version in German: Schüler/Wünsche, BewertungsPraktiker 2023, pp. 108-113.

Industry Betas and Multiples

Dr. Martin H. Schmidt
Senior Manager Deal Advisory KPMG AG WPG Germany
Contact: ebvm@eacva.de

Dr. Andreas Tschöpel, CVA, CEFA, CIIA
Partner Deal Advisory KPMG AG WPG Germany, Member of the Technical Committee for Business Valuation and Economics (FAUB) of the IDW e.V., Board Member of the EACVA e.V.

General

To derive the provided betas and multiples, only companies from the Eurozone have been considered. The included companies have been grouped on an industry level and on a sub-industry level based on the Global Industry Classification Standard (GICS). In each issue of the journal, aggregates for all eleven main industries and one individually selected sub-industry will be shown. Due to the special characteristics of companies operating in the financial industry (high leverage, leverage as part of the operating business, high dependency on the interest rate level, etc.), we only provide levered betas and equity-based multiples for that industry.

All presented values are based on raw data and raw calculations. They have carefully been checked and evaluated but have not been audited nor have individual values been verified. Certain results may be misleading in your setup or specific context. All results should be critically evaluated and interpreted. The data and usage are at your own risk.

Data source

All data has been obtained from the KPMG Valuation Data Source. The data source provides access to cost of capital parameters from more than 150 countries and sectors as well as peer-group-specific data from over 16,500 companies worldwide. The data covers the period from 2012 to the present. The data is updated monthly and is accessible from anywhere around the clock.
See www.kpmg.de/en/valuation-data-source for details.

Eurozone Cost of Capital Parameters as at 31 January 2024

The typified, uniform risk-free rate based on AAA-rated government bonds currently lies at 2.75% for the Eurozone. It is derived from yield curves based on Svensson parameters and results published by the European Central Bank. The overall long-term market return for the Eurozone is estimated at around 9%, leading to a market risk premium of 6.25%. Estimations of the market return rely on historical returns, as well as on forward-looking return estimates and risk premiums based on Eurozone companies with current market share prices and earnings forecasts from financial analysts.

Betas

Levered, debt and unlevered betas are calculated over an observation period of a single five-year period (monthly returns) and for five one-year periods (weekly returns).

Raw levered betas are obtained from a standard OLS regression, with stock returns being the dependent variable and stock market index returns (S&P Eurozone BMI Index) being the independent variable. Stock and index returns are total returns, thus including dividends, stock splits, rights issues, etc. (if available). Levered betas below zero and above three are treated as outliers and are excluded.

Unlevered betas have been estimated based on Harris-Pringle, assuming uncertain tax shields and including debt beta:

$$\beta_u = \beta_L \frac{E}{E+D} + \beta_D \frac{D}{E+D},$$

where β_U = unlevered beta, β_D = debt beta, D = net debt, E = market value of equity. Debt betas rely on a company's individual rating on a given date. Monthly rating-specific levels of debt betas are extracted from a broad market analysis. Net debt consists of total debt (incl. lease liabilities) + net pensions + minority interest + total preferred equity - total cash - short-term investments. In accordance with the observation period, parameter averages of debt beta, net debt and market equity over the individual periods are applied when unlevering levered betas. Unlevered betas below zero and above two are treated as outliers and are excluded.

Table 1: Median Levered Industry Betas for five single 1y-periods and one 5y-period

31 January 2024	Median Levered Betas								
	1-Year, weekly returns							5-Year, monthly returns	
Industries	Comps incl. (Average*)	2/2019 to 1/2020	2/2020 to 1/2021	2/2021 to 1/2022	2/2022 to 1/2023	2/2023 to 1/2024	Average*	Comps incl.	2/2019 to 1/2024
Industrials	*258*	0.94	1.00	0.93	0.86	0.88	0.92	*236*	1.13
Consumer Discretionary	*175*	0.93	0.95	1.04	1.01	0.97	0.98	*155*	1.18
Health Care	*130*	0.54	0.70	0.76	0.71	0.73	0.69	*120*	0.73
Financials	*144*	0.89	1.09	0.85	1.01	0.84	0.94	*134*	1.11
Utilities	*48*	0.27	0.81	0.57	0.64	0.61	0.58	*46*	0.68
Materials	*82*	1.18	0.96	0.83	0.92	0.99	0.97	*79*	1.15
Real Estate	*88*	0.30	0.78	0.47	0.71	0.77	0.61	*85*	0.83
Communication Services	*87*	0.62	0.75	0.63	0.64	0.58	0.64	*82*	0.88
Information Technology	*149*	0.83	0.84	0.99	0.93	0.80	0.88	*143*	1.02
Consumer Staples	*70*	0.53	0.55	0.66	0.70	0.43	0.57	*66*	0.58
Energy	*33*	1.15	1.04	0.63	0.51	0.53	0.77	*32*	0.87

Table 2: Median Industry Equity-Ratios for five single 1y-periods and one 5y-period

31 January 2024	Median Equity-Ratios								
	1-Year							5-Year	
Industries	Comps incl. (Average*)	2/2019 to 1/2020	2/2020 to 1/2021	2/2021 to 1/2022	2/2022 to 1/2023	2/2023 to 1/2024	Average*	Comps incl.	2/2019 to 1/2024
Industrials	*268*	73.8%	77.1%	82.7%	79.6%	74.1%	77.5%	*237*	78.2%
Consumer Discretionary	*185*	72.7%	78.6%	84.5%	78.2%	74.9%	77.8%	*153*	71.1%
Health Care	*139*	96.7%	99.3%	98.0%	96.4%	92.7%	96.6%	*127*	98.9%
Utilities	*51*	56.6%	57.9%	61.5%	61.3%	58.8%	59.2%	*46*	59.8%
Materials	*85*	71.1%	73.4%	79.4%	77.9%	73.9%	75.1%	*79*	76.1%
Real Estate	*99*	52.4%	50.7%	52.4%	43.0%	43.2%	48.3%	*86*	48.9%
Communication Services	*94*	72.4%	75.7%	85.9%	79.4%	68.5%	76.4%	*83*	74.1%
Information Technology	*160*	96.3%	99.7%	99.1%	96.4%	94.5%	97.2%	*143*	97.5%
Consumer Staples	*74*	71.8%	69.9%	74.8%	74.0%	70.5%	72.2%	*70*	73.2%
Energy	*37*	71.0%	58.2%	63.4%	82.7%	86.1%	72.3%	*33*	70.9%

Table 3: Median Unlevered Industry Betas for five single 1y-periods and one 5y-period

31 January 2024	Median Unlevered Betas								
	1-Year, weekly returns							5-Year, monthly returns	
Industries	Comps incl. (Average*)	2/2019 to 1/2020	2/2020 to 1/2021	2/2021 to 1/2022	2/2022 to 1/2023	2/2023 to 1/2024	Average*	Comps incl.	2/2019 to 1/2024
Industrials	*246*	0.75	0.81	0.75	0.71	0.62	0.73	*227*	0.92
Consumer Discretionary	*163*	0.69	0.82	0.81	0.77	0.76	0.77	*147*	0.94
Health Care	*115*	0.48	0.65	0.59	0.61	0.55	0.57	*108*	0.62
Utilities	*48*	0.28	0.61	0.44	0.44	0.45	0.44	*46*	0.51
Materials	*81*	0.84	0.81	0.66	0.77	0.77	0.77	*77*	0.86
Real Estate	*83*	0.33	0.63	0.38	0.49	0.53	0.47	*76*	0.61
Communication Services	*83*	0.53	0.65	0.55	0.58	0.43	0.55	*78*	0.67
Information Technology	*139*	0.76	0.86	0.84	0.92	0.78	0.83	*132*	0.97
Consumer Staples	*67*	0.46	0.53	0.49	0.53	0.39	0.48	*64*	0.53
Energy	*31*	0.79	0.91	0.59	0.50	0.52	0.66	*30*	0.75

Source: KPMG Valuation Data Source, see www.kpmg.de/en/valuation-data-source
**Average = Arithmetic Mean*

Table 4: Median Levered Subindustry (Communication Services) Betas for five single 1y-periods and one 5y-period

31 January 2024	Median Levered Betas								
	1-Year, weekly returns							5-Year, monthly returns	
Subindustry: Communication Services	Comps incl. (Average*)	2/2019 to 1/2020	2/2020 to 1/2021	2/2021 to 1/2022	2/2022 to 1/2023	2/2023 to 1/2024	Average*	Comps incl.	2/2019 to 1/2024
Interactive Media & Services	*9*	0.67	0.89	1.16	1.09	0.83	0.92	*7*	1.42
Diversified Telecommunication Services	*20*	0.43	0.71	0.35	0.55	0.41	0.49	*19*	0.68
Media	*34*	0.65	0.77	0.61	0.63	0.56	0.64	*34*	0.95
Entertainment	*19*	0.67	0.61	0.88	0.70	0.64	0.70	*17*	0.91
Wireless Telecommunication Services	*5*	0.71	0.81	0.49	1.14	0.30	0.69	*5*	0.68

Table 5: Median Subindustry (Communication Services) Equity-Ratios for five single 1y-periods and one 5y-period

31 January 2024	Median Equity-Ratios								
	1-Year							5-Year	
Subindustry: Communication Services	Comps incl. (Average*)	2/2019 to 1/2020	2/2020 to 1/2021	2/2021 to 1/2022	2/2022 to 1/2023	2/2023 to 1/2024	Average*	Comps incl.	2/2019 to 1/2024
Interactive Media & Services	*10*	98.1%	101.5%	98.5%	99.2%	84.0%	0.96	*8*	96.7%
Diversified Telecommunication Services	*22*	64.6%	62.8%	65.0%	63.9%	60.4%	0.63	*19*	63.8%
Media	*37*	69.4%	76.0%	81.5%	76.5%	69.8%	0.75	*34*	75.7%
Entertainment	*21*	95.9%	91.3%	99.2%	90.0%	72.8%	0.90	*17*	89.3%
Wireless Telecommunication Services	*5*	55.8%	70.2%	75.3%	53.1%	34.1%	0.58	*5*	57.3%

Table 6: Median Unlevered Subindustry (Communication Services) Betas for five single 1y-periods and one 5y-period

31 January 2024	Median Unlevered Betas								
	1-Year, weekly returns							5-Year, monthly returns	
Subindustry: Communication Services	Comps incl. (Average*)	2/2019 to 1/2020	2/2020 to 1/2021	2/2021 to 1/2022	2/2022 to 1/2023	2/2023 to 1/2024	Average*	Comps incl.	2/2019 to 1/2024
Interactive Media & Services	*8*	0.68	0.92	1.07	1.20	0.75	0.92	*5*	1.05
Diversified Telecommunication Services	*20*	0.39	0.50	0.30	0.39	0.34	0.38	*19*	0.46
Media	*33*	0.59	0.67	0.62	0.60	0.45	0.59	*33*	0.79
Entertainment	*17*	0.64	0.60	0.75	0.56	0.51	0.61	*16*	0.79
Wireless Telecommunication Services	*5*	0.61	0.90	0.49	0.78	0.35	0.63	*5*	0.64

Source: KPMG Valuation Data Source, see www.kpmg.de/en/valuation-data-source
**Average = Arithmetic Mean*

Multiples

Multiples are computed based on actuals (based on the annual report) and forecasts (based on consensus estimates by analyst) for the trailing year and the forward +1 year. Trading multiples for Sales, EBITDA and EBIT are each derived by dividing a companies' enterprise value (market capitalization plus net debt) by its sales, EBITDA or EBIT. Earnings multiples are derived by dividing a companies' market capitalization by earnings (net income). The market-to-book ratio is derived by dividing a companies' market value of equity by its book value of equity. Multiples below zero and above 500 are treated as outliers and are excluded. ◆

Table 7: Median Industry Multiples

31 January 2024	Sales			EBITDA			EBIT			Earnings			Market to Book-Ratio		
Industries	Trailing	Fwd. +1	Comps incl.	Trailing	Fwd. +1	Comps incl.	Trailing	Fwd. +1	Comps incl.	Trailing	Fwd. +1	Comps incl.	Trailing	Fwd. +1	Comps incl.
Industrials	0.9	0.9	*235*	6.9	6.1	*215*	10.9	9.5	*227*	12.8	11.0	*213*	1.6	1.5	*217*
Consumer Discretionary	0.8	0.8	*157*	6.7	5.9	*135*	11.4	9.5	*147*	12.2	10.3	*139*	1.6	1.4	*150*
Health Care	2.7	2.5	*110*	8.9	8.2	*76*	14.6	13.1	*82*	16.3	14.5	*76*	2.2	2.0	*92*
Financials	n/m	n/m	*n/a*	n/m	n/m	*n/a*	n/m	n/m	*n/a*	7.3	7.1	*112*	0.8	0.8	*107*
Utilities	2.8	2.3	*45*	8.4	7.9	*44*	13.8	12.5	*44*	14.0	12.9	*44*	1.6	1.5	*43*
Materials	1.0	0.9	*75*	6.1	5.6	*67*	10.4	9.2	*72*	12.0	9.4	*70*	1.2	1.1	*69*
Real Estate	11.8	11.3	*70*	18.1	17.6	*65*	19.7	18.1	*71*	11.0	10.7	*64*	0.7	0.7	*61*
Communication Services	1.3	1.3	*77*	6.0	5.8	*67*	11.1	10.5	*75*	11.2	10.7	*66*	1.4	1.4	*65*
Information Technology	1.2	1.1	*141*	8.7	7.6	*113*	13.2	11.0	*121*	16.3	13.6	*113*	2.3	2.1	*120*
Consumer Staples	0.8	0.8	*55*	8.0	7.3	*41*	11.3	10.8	*55*	13.3	12.6	*53*	1.3	1.2	*51*
Energy	1.0	1.0	*32*	4.4	4.2	*29*	7.0	6.1	*31*	8.0	7.2	*32*	1.1	1.0	*31*

Table 8: Median Subindustry (Communication Services) Multiples

31 January 2024	Sales			EBITDA			EBIT			Earnings			Market to Book		
Subindustry: Communication Services	Trailing	Fwd. +1	Comps incl.	Trailing	Fwd. +1	Comps incl.	Trailing	Fwd. +1	Comps incl.	Trailing	Fwd. +1	Comps incl.	Trailing	Fwd. +1	Comps incl.
Interactive Media & Services	1.6	1.3	*8*	8.9	6.6	*7*	17.3	11.4	*9*	20.4	15.2	*7*	2.4	2.3	*8*
Diversified Telecommunication Services	1.9	1.9	*18*	5.4	5.1	*17*	14.1	13.8	*18*	11.7	11.1	*16*	1.8	1.8	*17*
Media	1.0	0.9	*29*	5.9	5.5	*27*	9.3	8.4	*28*	9.2	8.4	*26*	1.2	1.2	*24*
Entertainment	1.7	1.6	*17*	11.2	9.9	*11*	13.3	16.0	*15*	23.3	22.2	*13*	2.7	3.0	*12*
Wireless Telecommunication Services	1.4	1.4	*5*	4.5	4.3	*5*	10.2	8.8	*5*	11.0	10.0	*4*	0.9	0.8	*4*

Source: KPMG Valuation Data Source, see www.kpmg.de/en/valuation-data-source
**Average = Arithmetic Mean*

Discounts for Lack of Marketability

Professor Dr. Stefan O. Grbenic, StB, CVA

Professor of Management Control, Accounting and Finance at Webster University St. Louis/Vienna and Graz University of Technology and Visiting Professor at University of Maribor, Istanbul Medeniyet University and University of Twente.

Contact: ebvm@eacva.de

Over the years, a variety of Option Pricing Models (hereinafter OPM) have been introduced to estimate Discounts for Lack of Marketability (hereinafter DLOM), capturing the key value drivers stock price volatility, period of illiquidity, and dividend yield.[1] The DLOM are computed employing three OPM generally proved to generate DLOM estimates that comport with DLOM empirically observed on the European market[2] according to varying assumptions about the period of illiquidity, the size of the underlying DLOM benchmarks, the volatility of the underlying stock return and, the dividend yield (employing closed-form solution formulae):[3]

- Lookback Put OPM:4

$$DLOM_i = \frac{1}{P_i} P_i[\theta_i] \qquad \text{with } \theta_i = \left(2 + \frac{\sigma_i^2 T}{2}\right) N\left(\frac{\sqrt{\sigma_i^2 T}}{2}\right) + \sqrt{\frac{\sigma_i^2 T}{2\pi}} e^{-\frac{\sigma_i^2 T}{8}} - 1$$

- Adjusted Lookback Put OPM:5

$$DLOM_i = \frac{P_i[\theta_i]}{1 + P_i[\theta_i]}$$

- Perpetual Exchange Put OPM:6

$$DLOM_i = \frac{1}{P_i}\left(\frac{P_i}{-\psi_i - \frac{1}{2}}\right)\left(\frac{-\psi_i - \frac{1}{2}}{\frac{1}{2} - \psi_i}\right)^{\left(\frac{1}{2} - \psi_i\right)} \qquad \text{with } \psi_i = \sqrt{\frac{1}{4} + \frac{2q_i}{\sigma_i^2}}$$

where *i* is the index on the stocks related to DLOM estimates, P_i is the current price of the underlying stock as on end of computation period date, σ_i is the volatility of the underlying stock return, *T* is the period of illiquidity (holding period) indicating the period the stock is expected to remain non-marketable, q_i is the dividend yield of the underlying stock and, *N()* is the cumulative normal distribution function.

The computations are based on stock and company data directly collected from the stock exchanges as well as from yahoo!finance.

When using the data, please consider the following:

- DLOM are computed employing (stock and company) data for the year 2022.
- DLOM reported in the tables for all three OPM are computed employing the arithmetic mean of all values available.
- The tables for all three OPM are separated for various periods of illiquidity (holding periods) 3 months, 6 months, 9 months, 1 year, 1,5 years and 2 years with the choice on the holding period depending on the specific valuation. The final table for the Perpetual Exchange Put OPM holds irrespective of choosing a specific holding period.
- Countries with less than 20 observations (10 observations for the Perpetual Exchange Put OPM) remain unreported, but are included in the regional breakdown.
- The various regions (see bottom of the tables) are compounded as follows:
  Central and Western Europe: Andorra, Austria, Belgium, France, Germany, Liechtenstein, Luxembourg, Monaco, The Netherlands, Switzerland
  Southern Europe: Croatia, Cyprus, Gibraltar, Greece, Italy, Malta, Portugal, San Marino, Slovenia, Spain, Turkey
  Scandinavia: Denmark, Finland, Iceland, Norway, Sweden
  Britain: Ireland, United Kingdom
  Eastern Europe: Albania, Armenia, Azerbaijan, Belarus, Bosnia and Herzegovina, Bulgaria, Czech Republic, Estonia, Georgia, Hungary, Kazakhstan, Kosovo, Latvia, Lithuania, Moldova, Montenegro, North Makedonia, Poland, Romania, Russia, Serbia, Slovakia, Ukraine
- The volatility σ_i of the underlying stock return is computed by the standard deviation of daily logarithmic stock returns (adjusted close prices) over the year 2022. To avoid distortions by thin trading, stocks with too many observations missing were either omitted or missing or invalid stock returns, respectively, were replaced employing the Uniform (Average) Returns Procedure

$$r_{i,t} = \sqrt[d+1]{\frac{p_{i,t+1+j}}{p_{i,t-d+j}}}$$

1 For a theoretical analysis see e. g. Hitchner/Aldering/Angell/Morris, Discount for Lack of Marketability, 2011, pp. 305-351.
2 See Grbenic/Baumüller, Zum Fungibilitätsabschlag am europäischen Markt, Wpg, 2022, vol. 75 iss. 22, pp. 1291-1301.
3 See Grbenic, The Performance of Option Pricing Models Estimating the Marketability Discount in a Pre-IPO Real-World Data Setting: Evidence from Europe, Journal of Business Valuation and Economic Loss Analysis, 2022, vol. 17 iss. 1, pp. 1-37.
4 See Longstaff, How Much Can Marketability Affect Security Values?, The Journal of Finance, 2005, vol. 50 iss. 5, pp. 1767-1774.
5 See Abbott, Discount for Lack of Liquidity: Understanding and Interpreting Option Models, Business Val-uation Review, 2009, vol. 28 iss. 3, pp. 114-148.
6 See Ghaidarov, The Cost of Illiquidity for Private Equity Investments, Working Paper, 2010, pp. 1-28.

where *i* is the index on the stocks related to DLOM, $r_{i,t}$ is the return of stock i at day *t*, $p_{i,t}$ is the price of stock *i* at day *t*, *d* is the length (number of days) of the non-trading interval and, *j* is the number of remaining days without trading at day *t* in the non-trading interval.

The dividend yield q_i of the underlying stock is computed in a sustainable shape[7]

$$q_i = ln\left[\left(1 + \frac{EPS_i}{PPS_i}\right) * \left(1 - \frac{g_i}{ROE_i}\right)\right]$$

where EPSi are the earnings per share of stock *i*, PPS_i is the price of stock i as on end of computation period date, ROE_i is the return on equity of stock *i* and, g_i is the compound annual growth rate of operating sales over the preceding 5 years.

The data is evaluated carefully; however, the author denies liability for the accuracy of all computations.

Notes for application:

n indicates the number of DLOM (sample size) computed. $\bar{x}_a$ indicates the arithmetic mean, $\bar{x}_h$ indicates the harmonic mean

$$\bar{x}_h = \frac{n}{\sum_{i=1}^{n} \frac{n}{x_i}}$$

and $\bar{x}_t$ indicates the truncated mean (10% level = 10 % of the observations sorted in ascending order being eliminated upside and downside)

$$\bar{x}_t = \frac{\sum_{2}^{n-1} x_i}{n-2}$$

The first quartile Q_1 indicates the boundary of the lowest 25%, the third quartile Q_3 indicates the boundary of the highest 25% of the computed DLOM. Using this information, the effectively employed DLOM may be related to the group of the 25% lowest (highest) discounts computed. Q_2 indicates the median of the DLOM computed. The confidence interval reports the range (lower confidence limit to upper confidence limit) of the DLOM applying a 95% confidence level. Assuming the DLOM to be normally distributed, this indicates all DLOM lying within these limits. To evaluate the assumption of normally distributed DLOM computed, the results of the Jarque-Bera Test for Normality are reported in brackets

$$JB = n\left[\frac{(skewness)^2}{6} + \frac{(kurtosis-3)^2}{24}\right]);$$

values above the reported 5% significance points reject the null hypothesis of normality, indicating the confidence interval to be less reliable:

n	5%	n	5%	n	5%	n	5%
100	4,29	200	4,43	400	4,74	800	5,46
150	4,39	300	4,6	500	4,82	∞	5,99

The skewness sk indicates the symmetry of the distribution of the computed DLOM. A negative skewness indicates the distribution to be skewed to the left, whereas a positive skewness indicates the distribution to be skewed to the right (a skewness of zero indicates the distribution to be symmetric). The kurtosis kurt indicates the weight in the tails of the distribution of the computed DLOM (for the normal distribution, the kurtosis is 3). The standard deviation sd indicates the dispersion of the computed DLOM. Finally, the coefficient of variation cv indicates the dispersion of the computed DLOM adjusting for the scale of units in the DLOM, expressed by the standard deviation as a percentage of the mean. It allows for a comparison of the dispersion of the DLOM across countries/regions. A lower (higher) coefficient of variation indicates a lower (higher) dispersion of the computed DLOM and, similarly, a higher (lower) reliability. ◆.

7 See Ghaidarov, Analysis and Critique of the Average Strike Put Option Marketability Discount Model, White Paper, 2009, pp. 1-15; Ghaidarov, The Cost of Illiquidity for Private Equity Investments, Working Paper, 2010, pp. 1-28.

Lookback Put OPM, Adjusted Lookback Put OPM and Perpetual Exchange Put OPM, 2022, Holding Period = 3 months

Country / Region	n	$\bar{x}_a$	$\bar{x}_h$	$\bar{x}_t$	Q_1	Q_2	Q_3	95% (JB)	sk	kurt	sd	cv
Austria	120	20.00%	12.23%	18.84%	11.89%	15.29%	24.31%	[17,69% ; 22,31%] (53,2)	1.63	2.81	0.13	0.64
Belgium	270	21.93%	15.12%	19.74%	11.35%	15.07%	26.08%	[19,84% ; 24,03%] (> 100,0)	2.51	8.14	0.17	0.80
Bosnia and Herzegovina	38	18.62%	10.79%	17.87%	11.26%	16.71%	24.13%	[15,00% ; 22,24%] (28,6)	1.73	5.47	0.11	0.59
Bulgaria	38	14.56%	11.93%	14.31%	9.72%	15.16%	18.61%	[12,61% ; 16,51%] (6,6)	0.74	1.61	0.06	0.41
Cyprus	97	22.12%	11.75%	18.09%	10.62%	15.96%	22.86%	[16,49% ; 27,74%] (> 100,0)	4.97	29.06	0.28	1.26
Czech Republic	33	16.29%	10.59%	15.41%	7.61%	14.05%	20.04%	[12,45% ; 20,13%] (20,1)	1.75	4.56	0.11	0.66
Denmark	383	25.46%	18.58%	23.93%	14.10%	20.33%	31.75%	[23,86% ; 27,05%] (> 100,0)	1.58	2.76	0.16	0.62
Estonia	56	12.92%	10.80%	12.75%	9.22%	12.24%	15.47%	[11,51% ; 14,33%] (24,4)	0.67	0.06	0.05	0.41
Finland	418	21.14%	16.10%	19.58%	12.94%	16.51%	24.14%	[19,87% ; 22,41%] (> 100,0)	2.07	4.65	0.13	0.63
France	1,189	22.88%	16.12%	20.85%	12.34%	16.60%	27.52%	[21,91% ; 23,84%] (> 100,0)	2.45	9.18	0.17	0.74
Germany	1,323	25.95%	16.87%	23.50%	13.66%	18.60%	29.44%	[24,77% ; 27,14%] (> 100,0)	4.61	47.05	0.22	0.85
Greece	245	19.12%	13.77%	16.09%	11.12%	14.61%	19.58%	[15,33% ; 22,91%] (> 100,0)	12.93	187.34	0.30	1.58
Hungary	54	21.42%	14.74%	17.24%	12.14%	14.89%	20.48%	[13,69% ; 29,16%] (> 100,0)	6.10	40.91	0.28	1.32
Iceland	58	18.49%	11.87%	16.40%	9.43%	11.67%	17.67%	[13,83% ; 23,15%] (> 100,0)	2.70	8.14	0.18	0.96
Ireland	149	24.77%	17.30%	22.48%	12.59%	17.34%	30.44%	[21,68% ; 27,86%] (> 100,0)	2.77	12.10	0.19	0.77
Italy	723	17.98%	14.44%	16.34%	12.08%	14.98%	19.02%	[17,15% ; 18,80%] (> 100,0)	3.15	12.49	0.11	0.63
Kazakhstan	24	21.55%	11.53%	17.97%	10.41%	13.93%	21.50%	[11,51% ; 31,59%] (> 100,0)	3.09	10.94	0.24	1.10
Lithuania	52	12.07%	10.17%	11.63%	8.46%	10.63%	13.21%	[10,50% ; 13,64%] (23,8)	1.66	2.99	0.06	0.47
Luxembourg	143	23.07%	13.88%	22.05%	15.03%	19.48%	27.35%	[20,83% ; 25,30%] (51,4)	1.38	2.01	0.14	0.59
Malta	20	21.22%	18.06%	20.61%	15.61%	19.68%	25.78%	[17,20% ; 25,23%] (5,8)	0.98	1.23	0.09	0.40
Netherlands	319	23.71%	16.20%	22.06%	12.91%	17.55%	30.63%	[21,95% ; 25,46%] (> 100,0)	1.68	2.92	0.16	0.67
North Macedonia	83	10.32%	4.08%	9.11%	3.60%	8.79%	13.57%	[8,16% ; 12,48%] (> 100,0)	2.71	11.15	0.10	0.96
Norway	489	24.21%	18.59%	22.60%	14.98%	20.50%	29.20%	[22,78% ; 25,64%] (> 100,0)	5.07	54.15	0.16	0.66
Poland	1,289	25.35%	20.66%	24.00%	16.57%	22.17%	30.50%	[24,62% ; 26,08%] (> 100,0)	2.46	12.61	0.13	0.52
Portugal	63	15.49%	12.75%	14.74%	9.78%	13.09%	18.01%	[13,50% ; 17,47%] (27,0)	1.57	2.32	0.08	0.51
Romania	133	19.49%	14.48%	17.16%	10.95%	14.73%	21.01%	[16,63% ; 22,36%] (> 100,0)	4.53	28.05	0.17	0.86
Russia	206	21.03%	16.11%	20.45%	15.96%	18.89%	24.48%	[19,82% ; 22,24%] (> 100,0)	1.63	5.39	0.09	0.42
Slovenia	42	21.16%	11.61%	15.98%	8.95%	11.26%	16.78%	[12,23% ; 30,09%] (> 100,0)	3.54	13.42	0.29	1.35
Spain	446	15.97%	6.21%	14.28%	8.63%	12.72%	17.89%	[14,66% ; 17,28%] (> 100,0)	2.31	6.71	0.14	0.88
Sweden	1,940	29.43%	22.93%	27.65%	18.41%	24.92%	34.83%	[28,67% ; 30,19%] (> 100,0)	2.68	16.47	0.17	0.58
Switzerland	555	22.32%	13.96%	20.47%	11.07%	15.57%	27.48%	[20,85% ; 23,79%] (> 100,0)	1.80	3.45	0.18	0.79
Turkey	792	22.03%	20.24%	20.80%	17.41%	19.97%	23.23%	[21,40% ; 22,65%] (> 100,0)	4.14	24.27	0.09	0.40
United Kingdom	3,445	21.07%	12.88%	19.56%	11.07%	16.42%	26.94%	[20,57% ; 21,56%] (> 100,0)	1.87	5.54	0.15	0.70
Central and Western Europe	**3,928**	**23.74%**	**15.69%**	**21.61%**	**12.50%**	**17.23%**	**28.23%**	**[23,16% ; 24,33%] (> 100,0)**	**3.61**	**34.28**	**0.19**	**0.79**
Southern Europe	**2,432**	**19.24%**	**12.35%**	**17.62%**	**12.53%**	**16.82%**	**21.36%**	**[18,62% ; 19,86%] (> 100,0)**	**11.61**	**273.81**	**0.16**	**0.81**
Scandinavia	**3,288**	**26.94%**	**20.25%**	**25.22%**	**16.06%**	**22.55%**	**32.79%**	**[26,37% ; 27,52%] (> 100,0)**	**2.78**	**18.47**	**0.17**	**0.62**
Britain	**3,594**	**21.22%**	**13.02%**	**19.68%**	**11.19%**	**16.49%**	**27.19%**	**[20,73% ; 21,71%] (> 100,0)**	**1.97**	**6.47**	**0.15**	**0.71**
Eastern Europe	**2,039**	**22.58%**	**15.34%**	**21.19%**	**14.12%**	**19.27%**	**27.03%**	**[21,96% ; 23,20%] (> 100,0)**	**3.46**	**27.23**	**0.14**	**0.63**
Total	**15,281**	**22.97%**	**15.00%**	**21.18%**	**13.00%**	**18.26%**	**27.58%**	**[22,70% ; 23,23%] (> 100,0)**	**4.16**	**54.99**	**0.17**	**0.72**

Lookback Put OPM, Adjusted Lookback Put OPM and Perpetual Exchange Put OPM, 2022, Holding Period = 6 months

Country / Region	n	$\bar{x}_a$	$\bar{x}_h$	$\bar{x}_t$	Q_1	Q_2	Q_3	95% (JB)	sk	kurt	sd	cv
Austria	120	24.26%	16.62%	23.47%	16.30%	21.61%	29.50%	[22,16% ; 26,36%] (34,6)	1.31	2.68	0.12	0.48
Belgium	270	27.00%	20.38%	24.52%	16.03%	21.04%	31.29%	[24,55% ; 29,44%] (> 100,0)	4.38	29.52	0.20	0.76
Bosnia and Herzegovina	38	26.33%	15.16%	25.07%	15.86%	22.61%	31.99%	[20,95% ; 31,71%] (56,6)	2.06	7.34	0.16	0.62
Bulgaria	38	20.54%	16.75%	20.12%	13.96%	21.15%	26.11%	[17,70% ; 23,38%] (6,3)	0.93	2.24	0.09	0.42
Cyprus	97	30.83%	16.41%	24.56%	14.76%	21.66%	32.15%	[21,82% ; 39,83%] (> 100,0)	5.94	39.11	0.45	1.45
Czech Republic	33	22.83%	14.77%	21.38%	10.72%	19.54%	28.60%	[17,16% ; 28,50%] (37,7)	2.05	6.25	0.16	0.70
Denmark	383	33.43%	25.41%	31.75%	19.70%	27.68%	41.27%	[31,51% ; 35,35%] (> 100,0)	1.62	3.98	0.19	0.57
Estonia	56	18.22%	15.19%	17.93%	12.90%	17.40%	22.31%	[16,18% ; 20,26%] (21,4)	0.80	0.44	0.08	0.42
Finland	418	26.93%	21.58%	25.58%	18.21%	22.99%	30.78%	[25,62% ; 28,24%] (> 100,0)	1.95	5.50	0.14	0.51
France	1,189	29.25%	21.95%	26.87%	17.15%	23.10%	34.72%	[28,08% ; 30,43%] (> 100,0)	3.99	29.87	0.21	0.71
Germany	1,323	32.58%	23.01%	29.79%	19.14%	25.92%	37.99%	[31,03% ; 34,14%] (> 100,0)	9.88	167.83	0.29	0.88
Greece	245	26.90%	19.11%	22.12%	15.67%	20.05%	26.58%	[20,20% ; 33,59%] (> 100,0)	14.19	213.99	0.53	1.98
Hungary	54	31.02%	20.66%	24.33%	16.98%	20.52%	28.02%	[18,10% ; 43,93%] (> 100,0)	6.56	45.89	0.47	1.53
Iceland	58	23.61%	16.04%	21.80%	13.50%	16.17%	20.83%	[18,51% ; 28,71%] (61,7)	2.30	5.08	0.19	0.82
Ireland	149	32.36%	23.70%	29.19%	17.83%	25.05%	39.87%	[28,16% ; 36,56%] (> 100,0)	4.47	30.27	0.26	0.80
Italy	723	24.23%	20.07%	22.62%	16.98%	20.79%	26.52%	[23,28% ; 25,19%] (> 100,0)	3.02	13.43	0.13	0.54
Kazakhstan	24	29.54%	16.01%	23.39%	14.50%	19.50%	27.58%	[14,30% ; 44,79%] (> 100,0)	3.81	16.31	0.36	1.22
Lithuania	52	16.64%	14.20%	16.16%	11.71%	14.95%	18.49%	[14,60% ; 18,68%] (20,5)	1.50	2.35	0.07	0.44
Luxembourg	143	29.65%	19.04%	28.96%	20.66%	26.58%	35.94%	[27,22% ; 32,07%] (42,8)	0.92	1.06	0.15	0.49
Malta	20	28.38%	24.79%	28.12%	21.19%	27.45%	34.30%	[23,70% ; 33,07%] (10,3)	0.47	-0.38	0.10	0.35
Netherlands	319	30.43%	22.08%	28.33%	17.79%	24.31%	37.15%	[28,29% ; 32,58%] (> 100,0)	2.43	8.93	0.19	0.64
North Macedonia	83	14.45%	5.75%	12.65%	5.04%	12.21%	18.53%	[11,34% ; 17,55%] (> 100,0)	3.16	15.39	0.14	0.98
Norway	489	32.17%	25.28%	30.10%	20.58%	27.83%	38.95%	[30,16% ; 34,19%] (> 100,0)	8.48	126.02	0.23	0.71
Poland	1,289	35.91%	28.80%	33.60%	23.09%	30.86%	42.51%	[34,79% ; 37,04%] (> 100,0)	2.95	17.45	0.21	0.57
Portugal	63	20.59%	17.52%	19.70%	13.90%	17.94%	24.61%	[18,16% ; 23,01%] (72,6)	2.02	6.35	0.10	0.47
Romania	133	27.62%	20.28%	23.89%	15.74%	21.02%	29.84%	[23,15% ; 32,08%] (> 100,0)	5.27	36.62	0.26	0.94
Russia	206	29.19%	22.46%	28.44%	21.71%	26.83%	33.68%	[27,55% ; 30,83%] (55,7)	1.27	2.84	0.12	0.41
Slovenia	42	30.24%	16.13%	21.45%	12.60%	16.00%	21.31%	[15,97% ; 44,52%] (> 100,0)	3.93	16.36	0.46	1.51
Spain	446	20.28%	8.60%	18.62%	11.86%	17.53%	23.63%	[18,81% ; 21,76%] (> 100,0)	2.59	12.12	0.16	0.78
Sweden	1,940	39.34%	31.24%	37.09%	25.33%	33.88%	46.86%	[38,32% ; 40,37%] (> 100,0)	4.29	44.63	0.23	0.59
Switzerland	555	26.99%	18.84%	25.12%	15.40%	21.35%	32.68%	[25,41% ; 28,57%] (> 100,0)	2.77	14.61	0.19	0.70
Turkey	792	31.14%	28.26%	29.30%	23.83%	28.01%	33.19%	[30,18% ; 32,11%] (> 100,0)	4.47	28.41	0.14	0.44
United Kingdom	3,445	27.12%	17.56%	25.52%	15.44%	22.48%	34.29%	[26,54% ; 27,71%] (> 100,0)	2.35	14.82	0.18	0.65
Central and Western Europe	**3,928**	**29.84%**	**21.33%**	**27.46%**	**17.44%**	**23.75%**	**35.57%**	**[29,11% ; 30,56%] (> 100,0)**	**7.91**	**146.14**	**0.23**	**0.78**
Southern Europe	**2,432**	**26.36%**	**17.16%**	**24.33%**	**17.57%**	**23.09%**	**30.08%**	**[25,40% ; 27,32%] (> 100,0)**	**17.86**	**532.51**	**0.24**	**0.92**
Scandinavia	**3,288**	**35.73%**	**27.51%**	**33.64%**	**22.09%**	**30.45%**	**43.37%**	**[34,98% ; 36,49%] (> 100,0)**	**4.60**	**53.74**	**0.22**	**0.62**
Britain	**3,594**	**27.34%**	**17.75%**	**25.68%**	**15.53%**	**22.54%**	**34.59%**	**[26,75% ; 27,93%] (> 100,0)**	**2.67**	**18.76**	**0.18**	**0.66**
Eastern Europe	**2,039**	**31.91%**	**21.45%**	**29.57%**	**19.80%**	**26.94%**	**37.49%**	**[30,95% ; 32,86%] (> 100,0)**	**4.35**	**40.62**	**0.22**	**0.69**
Total	**15,281**	**30.24%**	**20.57%**	**28.10%**	**17.97%**	**25.16%**	**36.51%**	**[29,89% ; 30,59%] (> 100,0)**	**7.98**	**183.51**	**0.22**	**0.73**

Lookback Put OPM, Adjusted Lookback Put OPM and Perpetual Exchange Put OPM, 2022, Holding Period = 9 months

Country / Region	n	$\bar{x}_a$	$\bar{x}_h$	$\bar{x}_t$	Q_1	Q_2	Q_3	95% (JB)	sk	kurt	sd	cv
Austria	120	27.53%	19.75%	27.02%	19.62%	25.53%	33.02%	[25,49% ; 29,57%] (23,2)	0.95	1.99	0.11	0.41
Belgium	270	30.94%	24.08%	28.12%	19.49%	25.34%	36.05%	[28,01% ; 33,88%] (> 100,0)	6.05	51.39	0.24	0.79
Bosnia and Herzegovina	38	32.32%	18.47%	30.57%	19.30%	27.36%	37.35%	[25,41% ; 39,23%] (84,0)	2.30	8.66	0.21	0.65
Bulgaria	38	25.13%	20.41%	24.55%	17.29%	25.43%	32.64%	[21,55% ; 28,72%] (7,4)	1.08	2.73	0.11	0.43
Cyprus	97	37.94%	19.90%	29.43%	18.09%	26.31%	37.74%	[25,61% ; 50,27%] (> 100,0)	6.32	43.03	0.61	1.61
Czech Republic	33	27.90%	17.89%	25.93%	13.24%	24.32%	35.81%	[20,67% ; 35,14%] (55,2)	2.26	7.43	0.20	0.73
Denmark	383	39.64%	30.32%	37.41%	23.65%	32.95%	48.29%	[37,31% ; 41,97%] (> 100,0)	2.01	6.71	0.23	0.58
Estonia	56	22.29%	18.51%	21.87%	15.51%	20.94%	27.43%	[19,74% ; 24,85%] (19,8)	0.92	0.74	0.10	0.43
Finland	418	31.39%	25.41%	30.03%	22.04%	27.23%	36.34%	[29,95% ; 32,83%] (> 100,0)	2.27	9.68	0.15	0.48
France	1,189	34.23%	26.13%	31.23%	20.70%	27.38%	39.34%	[32,79% ; 35,67%] (> 100,0)	5.31	49.09	0.25	0.74
Germany	1,323	37.81%	27.41%	34.45%	23.21%	31.07%	44.29%	[35,79% ; 39,82%] (> 100,0)	13.15	254.94	0.37	0.99
Greece	245	33.22%	23.06%	26.62%	18.76%	24.17%	32.18%	[23,61% ; 42,83%] (> 100,0)	14.59	222.51	0.76	2.30
Hungary	54	38.86%	25.12%	29.80%	20.57%	25.10%	33.63%	[20,93% ; 56,79%] (> 100,0)	6.76	47.97	0.66	1.69
Iceland	58	27.57%	18.99%	25.57%	16.43%	19.48%	25.61%	[21,88% ; 33,26%] (63,7)	2.33	5.16	0.22	0.79
Ireland	149	38.35%	28.33%	34.18%	21.31%	30.92%	44.77%	[32,94% ; 43,77%] (> 100,0)	5.42	41.07	0.33	0.87
Italy	723	29.06%	24.25%	27.28%	20.68%	25.32%	32.09%	[27,93% ; 30,18%] (> 100,0)	3.41	19.08	0.15	0.53
Kazakhstan	24	36.01%	19.33%	27.46%	17.70%	23.63%	32.63%	[15,78% ; 56,25%] (> 100,0)	4.13	18.65	0.48	1.33
Lithuania	52	20.14%	17.23%	19.49%	14.20%	17.70%	22.99%	[17,66% ; 22,62%] (23,7)	1.65	3.24	0.09	0.44
Luxembourg	143	34.73%	22.79%	33.97%	24.44%	32.24%	42.51%	[31,96% ; 37,50%] (30,8)	1.03	2.05	0.17	0.48
Malta	20	33.91%	29.68%	33.39%	25.17%	31.84%	40.14%	[28,20% ; 39,62%] (8,1)	0.70	0.21	0.12	0.36
Netherlands	319	35.68%	26.29%	32.86%	21.51%	28.79%	41.67%	[33,06% ; 38,30%] (> 100,0)	3.14	14.53	0.24	0.67
North Macedonia	83	17.64%	7.03%	15.33%	6.13%	15.07%	22.47%	[13,73% ; 21,54%] (> 100,0)	3.50	18.52	0.18	1.01
Norway	489	38.40%	30.05%	35.57%	24.35%	33.07%	46.08%	[35,74% ; 41,06%] (> 100,0)	10.26	165.99	0.30	0.78
Poland	1,289	44.19%	34.87%	40.94%	27.59%	37.08%	51.22%	[42,70% ; 45,68%] (> 100,0)	3.26	20.72	0.27	0.62
Portugal	63	24.51%	21.00%	23.31%	17.23%	21.42%	28.74%	[21,57% ; 27,45%] (> 100,0)	2.50	9.71	0.12	0.48
Romania	133	34.02%	24.64%	28.97%	19.21%	25.08%	36.21%	[28,08% ; 39,97%] (> 100,0)	5.70	41.66	0.35	1.02
Russia	206	35.50%	27.18%	34.49%	26.06%	32.81%	40.71%	[33,43% ; 37,57%] (67,3)	1.39	3.26	0.15	0.42
Slovenia	42	37.74%	19.48%	25.53%	15.27%	18.89%	25.86%	[18,44% ; 57,03%] (> 100,0)	4.13	17.80	0.62	1.64
Spain	446	23.61%	10.38%	21.90%	14.17%	20.88%	28.65%	[21,94% ; 25,29%] (> 100,0)	3.28	21.53	0.18	0.76
Sweden	1,940	47.13%	37.18%	43.97%	30.16%	40.01%	55.05%	[45,80% ; 48,46%] (> 100,0)	5.33	63.41	0.30	0.63
Switzerland	555	30.62%	22.28%	28.52%	18.13%	24.96%	37.02%	[28,83% ; 32,40%] (> 100,0)	4.13	32.25	0.21	0.70
Turkey	792	38.22%	34.25%	35.77%	28.30%	34.36%	41.07%	[36,94% ; 39,50%] (> 100,0)	4.64	30.55	0.18	0.48
United Kingdom	3,445	31.82%	20.92%	29.81%	18.54%	26.78%	39.42%	[31,12% ; 32,52%] (> 100,0)	3.11	26.66	0.21	0.66
Central and Western Europe	**3,928**	**34.60%**	**25.37%**	**31.74%**	**21.11%**	**28.19%**	**40.59%**	**[33,70% ; 35,51%] (> 100,0)**	**11.30**	**252.86**	**0.29**	**0.84**
Southern Europe	**2,432**	**31.92%**	**20.73%**	**29.33%**	**21.19%**	**27.70%**	**36.65%**	**[30,61% ; 33,22%] (> 100,0)**	**21.04**	**678.27**	**0.33**	**1.03**
Scandinavia	**3,288**	**42.62%**	**32.69%**	**39.73%**	**26.28%**	**36.09%**	**50.54%**	**[41,65% ; 43,58%] (> 100,0)**	**5.91**	**80.04**	**0.28**	**0.66**
Britain	**3,594**	**32.09%**	**21.15%**	**29.99%**	**18.66%**	**26.90%**	**39.65%**	**[31,39% ; 32,80%] (> 100,0)**	**3.58**	**32.96**	**0.22**	**0.67**
Eastern Europe	**2,039**	**39.22%**	**26.03%**	**35.94%**	**23.89%**	**32.67%**	**45.71%**	**[37,96% ; 40,48%] (> 100,0)**	**4.95**	**50.40**	**0.29**	**0.74**
Total	**15,281**	**35.92%**	**24.61%**	**33.14%**	**21.66%**	**29.95%**	**42.63%**	**[35,48% ; 36,37%] (> 100,0)**	**10.76**	**293.91**	**0.28**	**0.79**

Lookback Put OPM, Adjusted Lookback Put OPM and Perpetual Exchange Put OPM, 2022, Holding Period = 1 year

Country / Region	n	$\bar{x}_a$	$\bar{x}_h$	$\bar{x}_t$	Q_1	Q_2	Q_3	95% (JB)	sk	kurt	sd	cv
Austria	120	30.29%	22.25%	29.86%	22.58%	28.45%	36.49%	[28,21% ; 32,37%] (24,0)	0.72	1.35	0.12	0.38
Belgium	270	34.33%	27.00%	31.03%	21.99%	27.83%	37.99%	[30,85% ; 37,80%] (> 100,0)	7.15	66.73	0.29	0.84
Bosnia and Herzegovina	38	37.43%	21.23%	35.22%	22.43%	31.43%	43.14%	[29,11% ; 45,76%] (> 100,0)	2.48	9.64	0.25	0.68
Bulgaria	38	29.02%	23.45%	28.29%	19.86%	28.77%	38.35%	[24,76% ; 33,27%] (9,1)	1.20	3.11	0.13	0.45
Cyprus	97	44.27%	22.78%	33.55%	20.60%	29.96%	42.93%	[28,64% ; 59,91%] (> 100,0)	6.51	45.04	0.78	1.75
Czech Republic	33	32.23%	20.47%	29.75%	15.41%	28.46%	42.14%	[23,55% ; 40,90%] (71,5)	2.42	8.34	0.24	0.76
Denmark	383	44.97%	34.26%	42.05%	26.97%	37.26%	53.52%	[42,21% ; 47,74%] (> 100,0)	2.32	8.77	0.28	0.61
Estonia	56	25.73%	21.28%	25.19%	17.73%	23.96%	31.92%	[22,71% ; 28,74%] (19,0)	1.01	0.98	0.11	0.44
Finland	418	35.18%	28.41%	33.62%	25.07%	30.62%	41.00%	[33,57% ; 36,80%] (> 100,0)	2.69	14.42	0.17	0.48
France	1,189	38.50%	29.47%	34.79%	23.50%	30.83%	43.51%	[36,77% ; 40,22%] (> 100,0)	6.19	62.60	0.30	0.79
Germany	1,323	42.32%	30.93%	38.25%	26.15%	34.89%	48.90%	[39,81% ; 44,82%] (> 100,0)	14.93	306.12	0.46	1.10
Greece	245	38.81%	26.30%	30.37%	21.42%	27.41%	37.06%	[26,28% ; 51,34%] (> 100,0)	14.79	226.62	1.00	2.56
Hungary	54	45.84%	28.82%	34.25%	23.46%	29.21%	38.25%	[22,96% ; 68,73%] (> 100,0)	6.87	49.08	0.84	1.83
Iceland	58	30.94%	21.32%	28.39%	18.99%	21.75%	29.99%	[24,59% ; 37,30%] (91,0)	2.52	6.50	0.24	0.78
Ireland	149	43.54%	32.05%	38.17%	24.34%	34.60%	48.26%	[36,89% ; 50,20%] (> 100,0)	5.96	47.25	0.41	0.94
Italy	723	33.15%	27.68%	31.13%	23.66%	28.78%	37.34%	[31,85% ; 34,45%] (> 100,0)	3.83	24.33	0.18	0.54
Kazakhstan	24	41.74%	22.06%	30.84%	20.09%	26.01%	36.98%	[16,63% ; 66,84%] (> 100,0)	4.31	19.90	0.59	1.42
Lithuania	52	23.10%	19.73%	22.27%	16.44%	20.64%	26.89%	[20,20% ; 26,00%] (29,6)	1.79	3.95	0.10	0.45
Luxembourg	143	39.06%	25.81%	37.96%	27.81%	36.66%	46.35%	[35,88% ; 42,24%] (39,4)	1.28	3.25	0.19	0.49
Malta	20	38.61%	33.61%	37.83%	28.33%	36.10%	43.28%	[31,77% ; 45,44%] (7,6)	0.92	0.62	0.15	0.38
Netherlands	319	40.18%	29.67%	36.53%	24.40%	32.22%	45.45%	[37,05% ; 43,31%] (> 100,0)	3.61	18.19	0.28	0.71
North Macedonia	83	20.35%	8.10%	17.58%	7.04%	17.15%	25.80%	[15,71% ; 24,99%] (> 100,0)	3.77	21.02	0.21	1.04
Norway	489	43.76%	33.84%	40.09%	27.33%	36.95%	50.87%	[40,44% ; 47,08%] (> 100,0)	11.27	189.44	0.37	0.85
Poland	1,289	51.33%	39.85%	47.17%	31.48%	42.05%	58.41%	[49,49% ; 53,16%] (> 100,0)	3.47	23.16	0.34	0.66
Portugal	63	27.83%	23.81%	26.31%	18.74%	24.21%	32.12%	[24,37% ; 31,29%] (> 100,0)	2.79	11.69	0.14	0.49
Romania	133	39.57%	28.25%	33.18%	22.18%	28.85%	40.24%	[32,19% ; 46,95%] (> 100,0)	5.98	45.08	0.43	1.09
Russia	206	40.87%	31.07%	39.51%	28.98%	37.28%	46.08%	[38,37% ; 43,36%] (82,8)	1.52	3.64	0.18	0.44
Slovenia	42	44.47%	22.23%	28.93%	17.40%	21.72%	30.28%	[20,28% ; 68,66%] (> 100,0)	4.24	18.66	0.78	1.75
Spain	446	26.44%	11.84%	24.61%	16.17%	23.78%	32.39%	[24,54% ; 28,35%] (> 100,0)	3.98	30.96	0.20	0.77
Sweden	1,940	53.87%	41.91%	49.69%	34.03%	44.93%	62.38%	[52,22% ; 55,51%] (> 100,0)	5.95	75.19	0.37	0.69
Switzerland	555	33.71%	25.01%	31.27%	20.61%	28.10%	40.37%	[31,68% ; 35,75%] (> 100,0)	5.32	49.04	0.24	0.72
Turkey	792	44.26%	39.18%	41.22%	31.75%	39.67%	47.89%	[42,68% ; 45,84%] (> 100,0)	4.74	31.81	0.23	0.51
United Kingdom	3,445	35.84%	23.61%	33.31%	21.03%	30.25%	43.89%	[35,02% ; 36,65%] (> 100,0)	3.74	36.89	0.24	0.68
Central and Western Europe	**3,928**	**38.69%**	**28.58%**	**35.22%**	**23.90%**	**31.67%**	**44.64%**	**[37,59% ; 39,80%] (> 100,0)**	**13.49**	**329.38**	**0.35**	**0.91**
Southern Europe	**2,432**	**36.69%**	**23.66%**	**33.47%**	**24.13%**	**31.41%**	**42.29%**	**[35,03% ; 38,34%] (> 100,0)**	**22.93**	**769.61**	**0.42**	**1.14**
Scandinavia	**3,288**	**48.55%**	**36.80%**	**44.76%**	**29.76%**	**40.49%**	**56.23%**	**[47,37% ; 49,73%] (> 100,0)**	**6.73**	**97.70**	**0.35**	**0.71**
Britain	**3,594**	**36.15%**	**23.87%**	**33.51%**	**21.21%**	**30.32%**	**43.94%**	**[35,32% ; 36,99%] (> 100,0)**	**4.29**	**44.70**	**0.25**	**0.70**
Eastern Europe	**2,039**	**45.51%**	**29.81%**	**41.30%**	**27.38%**	**37.17%**	**52.35%**	**[43,96% ; 47,07%] (> 100,0)**	**5.39**	**58.09**	**0.36**	**0.79**
Total	**15,281**	**40.81%**	**27.86%**	**37.26%**	**24.57%**	**33.76%**	**47.59%**	**[40,26% ; 41,36%] (> 100,0)**	**12.63**	**376.42**	**0.35**	**0.85**

Lookback Put OPM, Adjusted Lookback Put OPM and Perpetual Exchange Put OPM, 2022, Holding Period = 1.5 years

Country / Region	n	$\bar{x}_a$	$\bar{x}_h$	$\bar{x}_t$	Q_1	Q_2	Q_3	95% (JB)	sk	kurt	sd	cv
Austria	120	34.94%	26.17%	34.42%	26.35%	33.53%	41.00%	[32,61% ; 37,26%] (29,3)	0.66	0.98	0.13	0.37
Belgium	270	40.15%	31.52%	35.73%	25.93%	32.25%	43.21%	[35,52% ; 44,78%] (> 100,0)	8.32	83.36	0.39	0.96
Bosnia and Herzegovina	38	46.19%	25.78%	43.06%	27.00%	38.44%	54.54%	[35,19% ; 57,19%] (> 100,0)	2.73	11.01	0.33	0.72
Bulgaria	38	35.58%	28.48%	34.55%	24.15%	33.76%	48.35%	[30,09% ; 41,06%] (12,7)	1.38	3.67	0.17	0.47
Cyprus	97	55.65%	27.50%	40.26%	24.62%	35.11%	51.33%	[33,42% ; 77,89%] (> 100,0)	6.70	47.03	1.10	1.98
Czech Republic	33	39.62%	24.68%	36.19%	17.42%	34.75%	49.32%	[28,26% ; 50,99%] (99,9)	2.66	9.67	0.32	0.81
Denmark	383	54.14%	40.47%	49.83%	31.82%	44.01%	61.87%	[50,49% ; 57,80%] (> 100,0)	2.70	11.15	0.36	0.67
Estonia	56	31.51%	25.87%	30.75%	21.69%	28.75%	38.76%	[27,66% ; 35,37%] (18,8)	1.16	1.35	0.14	0.46
Finland	418	41.61%	33.01%	39.47%	29.56%	36.34%	48.07%	[39,58% ; 43,63%] (> 100,0)	3.33	21.16	0.21	0.51
France	1,189	45.85%	34.72%	40.58%	27.72%	36.15%	50.19%	[43,53% ; 48,16%] (> 100,0)	7.18	78.78	0.41	0.89
Germany	1,323	50.15%	36.47%	44.44%	30.99%	40.80%	56.41%	[46,62% ; 53,67%] (> 100,0)	16.63	357.70	0.65	1.30
Greece	245	48.75%	31.54%	36.60%	26.08%	32.51%	45.34%	[30,38% ; 67,13%] (> 100,0)	14.98	230.64	1.46	3.00
Hungary	54	58.39%	34.89%	41.62%	28.03%	36.37%	48.07%	[25,62% ; 91,16%] (> 100,0)	6.98	50.21	1.20	2.06
Iceland	58	36.70%	24.95%	33.10%	21.41%	26.01%	36.80%	[28,93% ; 44,48%] (> 100,0)	2.95	9.62	0.30	0.81
Ireland	149	52.59%	37.96%	44.84%	29.46%	40.21%	53.44%	[43,43% ; 61,75%] (> 100,0)	6.50	53.82	0.57	1.08
Italy	723	40.10%	33.25%	37.47%	28.19%	34.70%	45.35%	[38,43% ; 41,77%] (> 100,0)	4.42	31.39	0.23	0.57
Kazakhstan	24	51.96%	26.47%	36.47%	23.55%	31.54%	46.44%	[17,26% ; 86,65%] (> 100,0)	4.49	21.14	0.82	1.58
Lithuania	52	28.08%	23.82%	26.92%	19.31%	24.94%	33.09%	[24,40% ; 31,75%] (41,2)	1.97	4.86	0.13	0.47
Luxembourg	143	46.43%	30.62%	44.56%	32.30%	42.60%	53.54%	[42,36% ; 50,51%] (85,4)	1.67	4.78	0.25	0.53
Malta	20	46.58%	39.86%	45.31%	31.54%	43.06%	49.56%	[37,43% ; 55,72%] (8,1)	1.15	0.90	0.20	0.42
Netherlands	319	47.93%	34.97%	42.61%	28.61%	38.20%	52.69%	[43,77% ; 52,09%] (> 100,0)	4.10	22.10	0.38	0.79
North Macedonia	83	24.98%	9.88%	21.35%	8.54%	20.49%	31.07%	[18,98% ; 30,97%] (> 100,0)	4.18	24.91	0.27	1.10
Norway	489	53.03%	39.78%	47.66%	32.15%	42.96%	60.02%	[48,38% ; 57,68%] (> 100,0)	12.38	216.20	0.52	0.99
Poland	1,289	63.69%	47.93%	57.75%	37.58%	50.15%	70.11%	[61,17% ; 66,20%] (> 100,0)	3.75	26.72	0.46	0.72
Portugal	63	33.44%	28.29%	31.28%	23.06%	28.55%	38.60%	[28,95% ; 37,94%] (> 100,0)	3.09	13.68	0.18	0.53
Romania	133	49.24%	34.18%	40.25%	26.76%	35.78%	49.64%	[39,05% ; 59,43%] (> 100,0)	6.34	49.54	0.59	1.21
Russia	206	50.01%	37.39%	47.98%	34.45%	45.28%	57.09%	[46,70% ; 53,33%] (> 100,0)	1.68	4.02	0.24	0.48
Slovenia	42	56.71%	26.70%	34.60%	20.83%	25.45%	37.97%	[22,87% ; 90,54%] (> 100,0)	4.37	19.64	1.09	1.91
Spain	446	31.25%	14.20%	28.97%	18.63%	28.29%	38.78%	[28,87% ; 33,62%] (> 100,0)	5.08	45.97	0.26	0.82
Sweden	1,940	65.57%	49.31%	59.42%	39.71%	52.40%	73.92%	[63,30% ; 67,85%] (> 100,0)	6.63	89.41	0.51	0.78
Switzerland	555	39.00%	29.24%	35.69%	23.99%	32.76%	46.51%	[36,41% ; 41,59%] (> 100,0)	6.90	72.74	0.31	0.80
Turkey	792	54.60%	47.21%	50.38%	37.15%	47.98%	60.05%	[52,43% ; 56,77%] (> 100,0)	4.84	33.25	0.31	0.57
United Kingdom	3,445	42.70%	27.85%	39.03%	24.92%	35.39%	50.46%	[41,64% ; 43,76%] (> 100,0)	4.61	52.12	0.32	0.75
Central and Western Europe	**3,928**	**45.75%**	**33.63%**	**40.86%**	**28.10%**	**37.02%**	**51.31%**	**[44,24% ; 47,26%] (> 100,0)**	**15.92**	**421.99**	**0.48**	**1.06**
Southern Europe	**2,432**	**44.90%**	**28.41%**	**40.33%**	**28.84%**	**37.08%**	**51.39%**	**[42,54% ; 47,26%] (> 100,0)**	**25.08**	**878.27**	**0.59**	**1.32**
Scandinavia	**3,288**	**58.82%**	**43.21%**	**53.26%**	**35.09%**	**47.35%**	**65.87%**	**[57,20% ; 60,44%] (> 100,0)**	**7.68**	**119.98**	**0.47**	**0.81**
Britain	**3,594**	**43.11%**	**28.16%**	**39.26%**	**25.08%**	**35.47%**	**50.49%**	**[42,02% ; 44,20%] (> 100,0)**	**5.25**	**61.59**	**0.33**	**0.77**
Eastern Europe	**2,039**	**56.41%**	**35.99%**	**50.36%**	**32.58%**	**44.56%**	**63.39%**	**[54,28% ; 58,54%] (> 100,0)**	**6.00**	**69.64**	**0.49**	**0.87**
Total	**15,281**	**49.23%**	**33.02%**	**44.05%**	**29.06%**	**39.67%**	**55.83%**	**[48,47% ; 49,98%] (> 100,0)**	**14.94**	**488.13**	**0.48**	**0.97**

Lookback Put OPM, Adjusted Lookback Put OPM and Perpetual Exchange Put OPM, 2022, Holding Period = 2 years

Country / Region	n	$\bar{x}_a$	$\bar{x}_h$	$\bar{x}_t$	Q_1	Q_2	Q_3	95% (JB)	sk	kurt	sd	cv
Austria	120	38.88%	29.24%	38.20%	29.30%	36.53%	45.32%	[36,20% ; 41,57%] (29,7)	0.84	1.23	0.15	0.38
Belgium	270	45.21%	35.00%	39.66%	28.00%	36.17%	49.38%	[39,40% ; 51,03%] (> 100,0)	8.85	91.12	0.49	1.07
Bosnia and Herzegovina	38	53.78%	29.55%	49.76%	30.65%	43.80%	64.69%	[40,21% ; 67,34%] (> 100,0)	2.89	11.93	0.41	0.77
Bulgaria	38	41.16%	32.64%	39.85%	28.25%	37.64%	55.62%	[34,53% ; 47,80%] (16,2)	1.51	4.04	0.20	0.49
Cyprus	97	66.03%	31.37%	45.84%	28.18%	39.82%	59.35%	[37,19% ; 94,87%] (> 100,0)	6.80	48.02	1.43	2.17
Czech Republic	33	46.02%	28.11%	41.65%	19.97%	38.69%	53.95%	[32,11% ; 59,93%] (> 100,0)	2.82	10.59	0.39	0.85
Denmark	383	62.15%	45.34%	56.51%	35.51%	48.84%	66.92%	[57,60% ; 66,70%] (> 100,0)	2.90	12.39	0.45	0.73
Estonia	56	36.43%	29.68%	35.45%	24.72%	32.58%	45.02%	[31,80% ; 41,05%] (19,5)	1.27	1.61	0.17	0.47
Finland	418	47.12%	36.52%	44.34%	33.28%	40.38%	54.87%	[44,65% ; 49,58%] (> 100,0)	3.69	24.72	0.26	0.54
France	1,189	52.26%	38.83%	45.40%	30.94%	40.74%	56.20%	[49,35% ; 55,17%] (> 100,0)	7.70	88.01	0.51	0.98
Germany	1,323	57.03%	40.81%	49.46%	34.64%	44.94%	62.03%	[52,47% ; 61,60%] (> 100,0)	17.40	382.31	0.85	1.48
Greece	245	57.72%	35.77%	41.82%	29.33%	37.14%	52.50%	[33,48% ; 81,95%] (> 100,0)	15.07	232.63	1.93	3.34
Hungary	54	69.82%	39.88%	47.88%	31.45%	41.84%	55.65%	[27,17% ; 112,48%] (> 100,0)	7.03	50.77	1.56	2.24
Iceland	58	41.67%	27.76%	37.05%	24.79%	29.49%	41.34%	[32,42% ; 50,92%] (> 100,0)	3.28	11.97	0.35	0.84
Ireland	149	60.60%	42.61%	50.50%	32.83%	43.84%	58.14%	[48,93% ; 72,26%] (> 100,0)	6.77	57.31	0.72	1.19
Italy	723	46.05%	37.76%	42.74%	31.73%	39.24%	52.30%	[44,01% ; 48,10%] (> 100,0)	4.76	35.42	0.28	0.61
Kazakhstan	24	61.24%	30.05%	41.21%	25.73%	36.15%	54.24%	[17,05% ; 105,43%] (> 100,0)	4.57	21.74	1.05	1.71
Lithuania	52	32.30%	27.18%	30.83%	22.43%	28.48%	38.89%	[27,89% ; 36,71%] (50,5)	2.09	5.41	0.16	0.49
Luxembourg	143	52.79%	34.43%	50.16%	35.40%	46.50%	62.09%	[47,79% ; 57,79%] (> 100,0)	1.89	5.50	0.30	0.57
Malta	20	53.43%	44.80%	51.69%	35.03%	48.20%	56.29%	[42,00% ; 64,85%] (8,7)	1.24	0.94	0.24	0.46
Netherlands	319	54.70%	39.13%	47.77%	32.09%	41.91%	57.76%	[49,51% ; 59,89%] (> 100,0)	4.34	24.05	0.47	0.86
North Macedonia	83	28.95%	11.38%	24.51%	9.78%	23.18%	34.75%	[21,68% ; 36,23%] (> 100,0)	4.48	27.84	0.33	1.15
Norway	489	61.14%	44.40%	54.14%	35.43%	48.48%	67.59%	[55,16% ; 67,13%] (> 100,0)	13.01	231.81	0.67	1.10
Poland	1,289	74.56%	54.46%	66.86%	42.35%	56.48%	82.12%	[71,38% ; 77,74%] (> 100,0)	3.93	29.26	0.58	0.78
Portugal	63	38.23%	31.86%	35.53%	26.61%	32.02%	43.35%	[32,75% ; 43,72%] (> 100,0)	3.23	14.63	0.22	0.57
Romania	133	57.78%	39.05%	46.23%	30.76%	40.20%	58.66%	[44,81% ; 70,75%] (> 100,0)	6.56	52.38	0.76	1.31
Russia	206	57.90%	42.52%	55.20%	38.29%	51.49%	66.66%	[53,78% ; 62,01%] (> 100,0)	1.76	4.16	0.30	0.52
Slovenia	42	68.01%	30.31%	39.38%	23.63%	29.73%	44.72%	[24,60% ; 111,42%] (> 100,0)	4.44	20.18	1.39	2.05
Spain	446	35.37%	16.11%	32.54%	20.84%	31.71%	43.18%	[32,51% ; 38,22%] (> 100,0)	5.84	56.44	0.31	0.87
Sweden	1,940	75.91%	55.06%	67.83%	44.01%	57.72%	83.87%	[73,00% ; 78,81%] (> 100,0)	7.01	98.22	0.65	0.86
Switzerland	555	43.57%	32.51%	39.28%	26.96%	36.95%	50.51%	[40,39% ; 46,75%] (> 100,0)	7.77	86.50	0.38	0.88
Turkey	792	63.56%	53.73%	58.19%	41.30%	55.39%	71.05%	[60,82% ; 66,31%] (> 100,0)	4.89	34.07	0.39	0.62
United Kingdom	3,445	48.65%	31.17%	43.82%	27.75%	39.22%	56.27%	[47,34% ; 49,96%] (> 100,0)	5.16	62.92	0.39	0.81
Central and Western Europe	**3,928**	**51.91%**	**37.56%**	**45.47%**	**31.21%**	**41.29%**	**56.97%**	**[49,98% ; 53,84%] (> 100,0)**	**17.19**	**474.35**	**0.62**	**1.19**
Southern Europe	**2,432**	**52.06%**	**32.26%**	**46.07%**	**32.39%**	**41.61%**	**59.51%**	**[48,99% ; 55,12%] (> 100,0)**	**26.29**	**941.20**	**0.77**	**1.48**
Scandinavia	**3,288**	**67.84%**	**48.19%**	**60.55%**	**39.05%**	**52.62%**	**74.30%**	**[65,78% ; 69,91%] (> 100,0)**	**8.24**	**134.09**	**0.60**	**0.89**
Britain	**3,594**	**49.14%**	**31.52%**	**44.09%**	**28.05%**	**39.40%**	**56.43%**	**[47,80% ; 50,49%] (> 100,0)**	**5.84**	**73.22**	**0.41**	**0.84**
Eastern Europe	**2,039**	**65.98%**	**41.04%**	**58.10%**	**36.64%**	**50.40%**	**72.48%**	**[63,29% ; 68,68%] (> 100,0)**	**6.41**	**78.04**	**0.62**	**0.94**
Total	**15,281**	**56.59%**	**37.10%**	**49.80%**	**32.54%**	**44.26%**	**62.75%**	**[55,63% ; 57,55%] (> 100,0)**	**16.33**	**560.54**	**0.61**	**1.07**

Perpetual Exchange Put OPM, 2022

Country / Region	n	$\bar{x}_a$	$\bar{x}_h$	$\bar{x}_t$	Q_1	Q_2	Q_3	95% (JB)	sk	kurt	sd	cv
Austria	30	38.44%	35.49%	37.92%	29.73%	37.20%	44.91%	[34,14% ; 42,75%] (9,5)	1.11	1.36	0.12	0.30
Belgium	64	41.44%	34.71%	40.27%	27.86%	36.65%	51.15%	[37,12% ; 45,76%] (22,6)	0.93	0.77	0.17	0.42
Denmark	49	49.10%	40.62%	48.66%	35.48%	50.71%	61.25%	[43,70% ; 54,50%] (21,2)	0.22	-0.19	0.19	0.38
Finland	72	41.06%	24.45%	40.91%	29.54%	39.35%	54.56%	[37,02% ; 45,11%] (25,1)	0.21	0.14	0.17	0.42
France	203	44.55%	37.65%	43.77%	31.28%	42.25%	55.89%	[42,12% ; 46,98%] (90,3)	0.66	0.01	0.18	0.39
Germany	255	53.42%	46.49%	53.08%	39.29%	52.10%	67.22%	[51,14% ; 55,70%] (> 100,0)	0.32	-0.57	0.18	0.35
Greece	13	33.92%	26.34%	33.92%	23.79%	31.59%	38.39%	[24,40% ; 43,44%] (3,1)	1.14	2.27	0.16	0.46
Ireland	21	48.33%	43.93%	48.06%	39.87%	45.02%	56.01%	[41,83% ; 54,83%] (5,0)	0.64	0.98	0.14	0.30
Italy	43	46.94%	37.48%	46.38%	30.92%	45.51%	59.50%	[41,04% ; 52,84%] (16,5)	0.43	0.09	0.19	0.41
Luxembourg	23	44.20%	38.99%	44.10%	32.44%	43.09%	55.10%	[37,87% ; 50,53%] (16,0)	0.11	-1.08	0.15	0.33
Netherlands	55	43.90%	39.43%	43.49%	32.66%	42.11%	53.44%	[39,98% ; 47,82%] (28,0)	0.64	-0.25	0.14	0.33
Norway	63	40.45%	33.03%	39.85%	24.47%	35.96%	53.31%	[36,01% ; 44,90%] (41,8)	0.47	-0.88	0.18	0.44
Spain	66	37.32%	22.34%	36.73%	22.49%	37.21%	49.70%	[32,71% ; 41,93%] (22,4)	0.47	0.31	0.19	0.50
Sweden	216	52.22%	43.43%	52.03%	38.75%	50.27%	66.53%	[49,68% ; 54,77%] (> 100,0)	0.19	-0.47	0.19	0.36
Switzerland	143	42.93%	35.61%	42.27%	28.14%	40.68%	54.50%	[40,04% ; 45,81%] (77,1)	0.45	-0.48	0.17	0.41
United Kingdom	565	39.30%	28.20%	38.70%	26.63%	37.26%	49.36%	[37,82% ; 40,79%] (> 100,0)	0.49	0.01	0.18	0.46
Central and Western Europe	**776**	**46.57%**	**39.46%**	**45.87%**	**32.25%**	**44.15%**	**58.09%**	**[45,30% ; 47,84%] (> 100,0)**	**0.54**	**-0.27**	**0.18**	**0.39**
Southern Europe	**138**	**39.76%**	**26.88%**	**39.14%**	**26.45%**	**37.90%**	**51.67%**	**[36,57% ; 42,96%] (52,7)**	**0.56**	**0.19**	**0.19**	**0.48**
Scandinavia	**408**	**47.91%**	**35.43%**	**47.55%**	**33.69%**	**47.04%**	**61.15%**	**[46,02% ; 49,80%] (> 100,0)**	**0.26**	**-0.38**	**0.19**	**0.41**
Britain	**586**	**39.63%**	**28.56%**	**39.04%**	**27.06%**	**38.02%**	**49.96%**	**[38,17% ; 41,09%] (> 100,0)**	**0.47**	**0.00**	**0.18**	**0.45**
Eastern Europe	**17**	**34.06%**	**28.57%**	**34.06%**	**23.58%**	**31.32%**	**40.20%**	**[26,58% ; 41,55%] (7,7)**	**0.87**	**0.20**	**0.15**	**0.43**
Total	**1,925**	**44.14%**	**33.52%**	**43.60%**	**30.48%**	**42.02%**	**56.01%**	**[43,31% ; 44,98%] (> 100,0)**	**0.44**	**-0.19**	**0.19**	**0.42**

News from EACVA

Certified Valuation Analyst (CVA) Training Dates 2024 Announced!

Join Europe's premier business valuation association, EACVA, as we unveil our internationally renowned CVA Training program. With nearly two decades of expertise, we're dedicated to elevating the standards of the business valuation profession.

Program Highlights:

- Over 1,500 professionals across Europe trained since 2005
- Internationally recognized credential
- Expert instruction from renowned European professionals

2024 CVA Training and Exam Dates:

- Live Online: **22 – 24 May and 29 – 31 May 2024**
- In-Person in Frankfurt: **28 October – 1 November 2024**
- Duration: six days (online) | five days (in-person)
- 45 hours of continuing training credit
- **CVA Exam** – on-site or online.

Don't miss this opportunity to enhance your credibility and value to your clients by becoming a Certified Valuation Analyst. Join us in our mission to support and elevate the business valuation profession.
» Learn more and register to secure your spot!

Announcing EACVA's Business Valuation Webinars:

Valuation of Highly Asset-Light Start-Up Companies

- **Date**: Tuesday, **16 April 2024** I 13:30–16:15 (CEST/GMT-2) | Live Online (Zoom)
- **Description**: Join us for a comprehensive exploration of analyzing and valuing young companies that heavily rely on intellectual property (IP). Gain insights into addressing the challenges of information processing in a landscape where information relevance for valuation is often uncertain. Additionally, you will learn how to deal with the growing significance of data in standard business models from a valuation point of view.
- » Learn more and register!

Start-Up Valuation – Analysis and Valuation of Young and Innovative Business Models

- **Date**: Wednesday, **8 October 2024** I 13:30–16:15 (CEST/GMT-2) | Live Online (Zoom)
- **Description**: Delve deeper into the necessary analytical steps, common techniques and approaches essential for valuing start-up companies and innovative business models. Equip yourself with the necessary expertise to navigate the complexities of valuing emerging ventures.
- » Learn more and register!

Valuation Meets ESG & Sustainability – Analysis – Value Driver – Valuation

- **Date**: Tuesday, **19 November 2024** I 13:30–16:15 (CET/GMT-2) | Live Online (Zoom)
- **Description**: Discover how to seamlessly integrate ESG (Environmental, Social and Corporate Governance) considerations into business valuations. Explore various aspects of risk quantification, opportunities, assets, liabilities, and cash flow effects, and understand their implications on valuation.
- » Learn more and register!

News from IVSC

Update on the International Valuation Standards (IVS) 2024 Edition

The International Valuation Standards Council (IVSC) has published the latest edition of the International Valuation Standards (IVS) on January 31, 2024. The IVS are globally recognised, principles-based standards underpinning the valuation of all assets and liabilities. These standards are essential for maintaining the consistency, transparency, and quality of valuations across over 100 countries where they are applied.

The 2024 edition, which will be effective from January 31, 2025, introduces substantial updates, reflecting the evolving practices in the valuation profession. Key enhancements include new chapters on Data & Inputs, Documentation, and Financial Instruments, alongside a restructured General Standards section to align more closely with contemporary valuation practices and the diverse roles of valuation professionals.

These updates are the result of an extensive consultation process undertaken in 2023, encompassing public board meetings, webinars, presentations, and a formal comment period from April to July.

To assist practitioners in transitioning to the new standards, the IVSC's Standards Review Board has released a 'Red-Line' version that highlights the changes from the previous edition (January 2022). This version, along with the updated standards, is available for download. Additionally, the IVSC has also issued a 'Basis of Conclusions' document, providing detailed reasoning for the updates.

The IVS are foundational to promoting trust and confidence in valuation practices globally. The 2024 edition's enhancements aim to further these objectives, ensuring the standards meet the demands of modern valuation challenges and stakeholder expectations.

For detailed information on the key updates and to access the latest edition of the IVS, visit the IVSC's official website: www.ivsc.org/standards

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IVSC Standards Boards Meeting Hosted by PwC in New York

The IVSC's Standards Review Board, Business and Intangible Assets Board, Financial Instruments Board, and Tangible Assets Board met recently in New York, kindly hosted by IVSC sponsor organisation, PwC.

The meeting concentrated on reviewing feedback to the latest IVS updates, preparing for the Q3 2024 Agenda Consultation, and engaging with key stakeholders.

The in-person format is critical for in-depth discussion and effective decision-making, offering a solution to the limitations encountered in virtual meetings across time zones.

IVSC Releases Perspectives Paper on 'Valuing Data'

The International Valuation Standards Council (IVSC) has published a new Perspectives Paper titled 'Valuing Data'. This document is the latest instalment in a series that explores the nuances of valuing intangible assets and their role in value creation within modern economies.

The paper provides an in-depth exploration of the significance of data as an economic asset, emphasising its influence on informing economic decisions and its lifecycle, which poses unique challenges for valuation. It also discusses the balance between the monetisation and protection of data, the intertwining of data with other intangible assets, and how these factors impact its valuation.

The IVSC encourages professionals and stakeholders to engage with this paper to better understand the complex landscape of data valuation, fostering informed debate and application of best practices in alignment with IVS.

IVSC Europe Committee to meet in Amsterdam 7–8 May 2024

The IVSC's Europe Committee is scheduled to convene in person in Amsterdam on the 7th and 8th of May. This meeting is set to cover a wide array of topics, focusing primarily on the development of themes specific to Europe for the upcoming IVSC Agenda Consultation. Additionally, the committee will engage in extensive market outreach, connecting with financial regulators, investors, and banking institutions.

Comprising valuation experts from across the continent, the Europe Committee plays a crucial role in enhancing the understanding and adoption of the International Valuation Standards (IVS) among European stakeholders. Their work is instrumental in fostering relationships with professionals and users of valuation services, ensuring that the standards meet the region's unique market needs and contribute to the broader global valuation practice.

IVSC Members Introduce Themselves:

Founded in 2022, the **Luxembourg Valuation Professionals Association (LVPA)** seeks to elevate the valuation profession in Luxembourg. It champions the highest standards of ethics, professional proficiency, and educational excellence. The association actively promotes the adoption and contributes to the advancement of globally recognized valuation standards, thereby shaping the profession and its practices.

Why is valuation an important matter for Luxembourg?

Luxembourg ranks as the world's second-largest investment center, particularly renowned for alternative investments. With over 250 Alternative Investment Fund Managers (AIFMs) overseeing 8000 AIFs, adherence to the Alternative Investment Fund Managers Directive (AIFMD) safeguards investors' interests. Valuation practices play a pivotal role in protecting investments. Luxembourg's ascent as a global financial services hub valuation underscores its growing stature as a center of excellence for portfolio valuation.

How would you describe your organisation?

The Luxembourg Valuation Professionals Association (LVPA) serves as the primary representative body for valuation professionals in Luxembourg. Its core mission revolves around advocating for the highest standards of ethics, professional competence, and educational advancement within the field. LVPA actively fosters a community that promotes the adoption of internationally recognized valuation standards, thereby contributing to the ongoing development and refinement of valuation practices. Through networking opportunities, educational initiatives, and advocacy efforts, LVPA plays a pivotal role in shaping the landscape of the valuation profession in Luxembourg, ensuring its members are equipped with the necessary resources and support to excel in their roles.

Please tell us about your member structure.

Members of the LVPA are primarily dedicated to portfolio valuation, ensuring that fair value principles are rigorously applied to safeguard global investors, including pension funds and insurance companies but also retail investors. By meticulously assessing the value of diverse portfolios, these professionals play a crucial role in upholding transparency and integrity within the financial markets. Their commitment not only protects investors' interests but also contributes to the stability and sustainability of the broader financial ecosystem. LVPA aims to attract a diverse member base of qualified valuation professionals and to equip its members and broader local market participants with the relevant technical and soft skills to be able to grow as a valuation professional in a constantly changing environment.

Currently we count more than 100 individual members; our membership structure includes two main categories: full members and associate members. We have also a specific sub-category for students, which is very important since we believe that there is a growing need for valuation professionals.

What are your member benefits?

Members of our association enjoy the opportunity to engage in discussions on crucial valuation topics and challenges within our extensive network of professionals. We facilitate bimonthly events featuring expert speakers, allowing us to collectively explore and share insights on key issues within the valuation framework. These gatherings serve as invaluable platforms for exchanging perspectives, enhancing knowledge, and staying abreast of developments shaping the field of valuation. Our association is diligently crafting a learning curriculum and certification program set to launch its inaugural cohort in 2025. This initiative aims to cultivate expertise in portfolio valuation, promoting adherence to fair value principles and enhancing investor protection.

What are the most challenging valuation topics for your members right now?

Portfolio valuation poses considerable challenges, notably within various sub-asset classes including Private Equity, Infrastructure, Private Debt, Venture Capital, and Real Estate. Additionally, the complexities of instruments such as Carried Interest and Management Incentive Plans demand specialized attention.

We believe robust valuation governance frameworks are essential for navigating these complexities and upholding accuracy and transparency across all asset classes.

What valuation standards do your members follow?

Most members consider the valuation standards set forth by the International Private Equity and Venture Capital (IPEV) guidelines, which are particularly crucial due to the prevalence of alternative investments. Additionally, they follow the guidance provided by the International Valuation Standards Council (IVSC), ensuring consistency and transparency in valuation practices across various asset classes and global markets. These standards serve as the cornerstone of our members' valuation methodologies, guaranteeing adherence to best practices and regulatory requirements.

Why are you member with IVSC?

Since early 2023, LVPA has held the esteemed status of an Associate Valuation Professional Organization (VPO), with aspirations of achieving full VPO status in the future. IVSC has been a steadfast supporter of LVPA since its inception in February 2020, offering guidance and facilitating connections with other VPOs such as SFEV, IVAS, ASA, and CBV Institute. This collaboration has provided valuable opportunities for LVPA to learn from their experiences and explore potential avenues for collaboration and mutual growth.

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EACVA GmbH
European Association of Certified Valuators and Analysts
Koernerstraße 42, 63067 Offenbach am Main, Germany
Telefon: +49 (0)69 247 487 911 | E-mail: EBVM@eacva.de
Web: www.eacva.com | www.eacva.de