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# A new approach to private firm fair value valuation in line with IFRS 13 - the concept of the most advantageous market discount (MAMD)

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IFRS 13, adopted in 2013, introduced a general framework for fair value valuation of unquoted equity instruments. It has to be performed in line with the “highest and best use” concept and in the conditions of potential transactions carried out on “the most advantageous market”. This article presents a new and comprehensive approach to the valuation process of such instruments, which meets these IFRS 13 requirements. This approach applies a concept of the most advantageous market discount (MAMD), based on the well-known underpricing phenomenon. The application of this discount along with the Markowitz theory results in a cohesive, comprehensive and practical framework for unquoted equity instruments valuation according to the fair value concept compliant with IFRS 13. Additionally, this paper presents estimations of MAMD for the UK, Germany, France, Switzerland, and Poland. The obtained results can help valuation practitioners apply the MAMD concept in the process of unquoted equity instruments valuation according to IFRS 13. Compared to other approaches which address the issue of private company valuation, the presented valuation framework for the first time reconciles the requirements set in IFRS 13 fair value definition with the assumption of valuation in the reality of imperfect markets.

**JEL Classifications:** G12, G32, G34, M48

**Keywords:** IFRS 13, fair value, private equity valuation, underpricing

## Introduction

The issue of private firm valuation is widely discussed in financial literature. Such companies can be characterized by low, or lack of, marketability in comparison to publicly-traded firms (Elnathan, Gavius, & Hauser, 2010). The features of private firms pose some practical problems in application of standard valuation methods. These difficulties are particularly evident in attempts to estimate the appropriate discount rate for private companies, where the lack of marketability hinders the application of the Capital Asset Pricing Model (CAPM) and WACC estimation.

The introduction of IFRS 13 in 2013 opened a new space for further search for methodologically justified solutions in the area of private firm valuation. This standard provides a single IFRS framework for measuring fair value and a strong support for the concept of market-based, rather than entity-specific, measurement (Mackenzie, Coetsee, & Njikizana, 2012; <http://www.iasplus.com/en/standards/ifrs/ifrs13>), but it does not offer practical solutions which could be used in the process of private firm valuation. On the other hand the IFRS 13 sets the requirement that any proposed methodological solutions of fair value valuation must respect three main concepts defined in this standard: principal

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market, most advantageous market, and the highest and best use. The set of assumptions imposes a framework on any process of unquoted equity instruments valuation in line with IFRS 13.

This article is an attempt to bridge the gap between the constraints set by IFRS 13 and the applicable methods of private firm valuation. It presents a new and comprehensive approach which for the first time involves application of underpricing phenomenon in the estimation of the most advantageous market discount (MADM). The MADM can be subsequently used in valuation of private companies in line with fair value concept imposed by IFRS 13. Compared to other approaches which address the issue of private company valuation, the presented framework is the first to reconcile the requirements set by IFRS 13 fair value definition with the assumptions of valuation carried out on imperfect markets.

The article is organized as follows: section 2 contains a short summary of literature which presents arguments for application of discounts in unquoted equity instruments valuation; section 3 discusses the constraints imposed by IFRS 13 on the concept of fair value valuation of such instruments. Based on the above, a new approach to fair value valuation of private firms in line with IFRS 13 is presented. This approach is grounded on the well-known underpricing phenomenon (Certo, Holcomb, & Holmes, 2009; Ngo & Varela, 2012; Wu, 2012), Markowitz portfolio theory (1952) and MADM - a new concept which ensures compliance of the proposed approach to valuation with IFRS 13. Section 4 presents estimations of the MADM for the UK, Germany, France, Switzerland, and Poland in the years 2010 - 2013. The aim of the estimations is to support valuation practitioners in application of MADM concept in the process of private company valuation according to IFRS 13 standards. Section 5 contains concluding remarks.

### **Justification of value discount in valuation of unquoted equity instruments**

As private companies have no access to capital markets in the way that listed firms do, they offer discounts in order to attract investors/buyers (Sarin, Koeplin, & Shapiro, 2000). Moreover, De Franco et al. (2008) observed that discounts would be also related to a lower quality of innate earnings and external monitoring in private firms compared to that of public ones. Disclosure requirements are also lower, which may lead to an asymmetry of information resulting in an even greater pressure from the buyers to receive a compensating discount (Officer 2007, He, Lepone, & Leung, 2013). This is consistent with Chen, Cheng, Cheng, & Chih, (2010) and Damodaran (2005), where the key rationale behind discounts offered by private companies was: limited access to the expected monitoring service and/or expert advice, lower liquidity than that of public firms, private equity valuation and assessment costs and potential risk of overvaluing a private company. Additionally, research by He, Lepone, & Leung (2013) serves as a proof of a positive relation between the level of information asymmetry and the return expected by investors. The findings also support justification for application of discounts or excessive discount rates in private firm valuation. This seems to be consistent with the approach to IPO valuation as well. Reverte (2009) found evidence that companies presenting a higher level of corporate governance, which influences the level of disclosure, i.e. limiting the information asymmetry, display a lower cost of capital, which - in relation to IPOs - translates into lower discounts for potential investors. Abdou & Dicle (2007) discovered that the risk related to IPO, e.g. deriving from operating on high-technology market during an IT 'bubble' may be reflected in the expected discounts leading to underpricing. Cañadas & Rojo Ramirez (2011) suggested that while valuing privately-held companies, the valuation model should be adjusted for illiquidity. As an example, a situation where the Capital Asset Pricing Model (CAPM) had to be adjusted for that factor in order to represent a higher expected rate of return (in comparison to publically traded companies) was used. Such approach is based on calculation of private company value with respect to public company value (Livingston, 2014).

The literature on the subject provides examples of methodologies used for equity valuation. These would include discounted cash flows and earnings multiples as the most commonly used methods in Europe (Imam, Chan, & Shah, 2013), along with book-value-based models, e.g. return of equity (ROE) or value creation (VC) (Chen, Cheng, Cheng, & Chih, 2010b). The comparison of those methods is present in the literature, as all of them have their specific merits (Perek & Perek, 2012).

### **Methodological implications of the most advantageous market discount concept**

IFRS 13 recommends that fair value valuation of unquoted equity instruments should be carried out in line with three important concepts: “principal market”, “the most advantageous market”, and “the highest and best use” (HBU). Principal market is defined as an active market which an owner of an asset would normally enter to obtain the maximum existing price of sale of their assets. In valuation process, analysts should verify if there exists such market for a given asset. According to IFRS 13, lack of an active market, which can be observed in the case of unquoted equity instruments, forces valuers to search for the most advantageous market. Such market is one that makes it possible to maximize the price of sale of assets after taking transaction costs into account. On the other hand, IFRS 13 states that the price on the principal (or most advantageous) market used to measure the fair value shall not be adjusted for transaction costs (European Commission Regulation, 1255/2012, 2012).

HBU assumes that market participants have the ability to generate economic benefits by using assets in the most profitable way (European Commission, 2012). It means that all inefficiencies incorporated in current operations of a valued company should be eliminated in the process of free cash flow (FCF) estimation (Mielcarz & Wnuczak, 2011). If the current owners of shares are not able to apply the most advantageous strategy to company operations, it ought to be assumed that they should sell the unquoted shares to another market participant that would use the assets according to the HBU concept (European Commission, 2012). Additionally, it should be highlighted that current owners, motivated by their best economic interest, would seek to conduct a transaction in an accessible market offering the highest possible price.

The above considerations set constraints on any valuation of unquoted equity instruments and private companies in line with IFRS13. Taking them into account, it would seem reasonable to assume that a profit-oriented seller, acting in line with the HBU principle, offers shares of a private company on the market characterized by liquidity and a high number of diversified investors. The requirements are met by stock exchange markets. According to Markowitz’s (1952) portfolio theory, due to diversification of investors, the expected rates of return on such markets should not include specific risk premiums (Sharpe, 1964). In the case of an ideally active market, investors who tend to diminish specific risks of investment through diversification in fact accept the lowest expected rates of return and, in consequence, can offer the highest transaction prices. Hence, they unintentionally act in line with the seller’s best interest<sup>1</sup>. An additional argument for the strategy of going public as a form of HBU priority execution comes from the relation between the private risk of running an unlisted company faced by current owner and the potential risk faced by diversified investors. As diversified investors are not exposed to specific risks associated with business operations of a company, they will be able to accept a higher risk related to execution of a value increasing strategy. In consequence, the strategy of going public for a private company should be treated as execution of the HBU concept as long as the expected increase of value is higher than the cost related to IPO. In

<sup>1</sup> The elimination of specific risk through diversification leads these diversified investors to establishment of their expected rate of return on the level reflecting exclusively the systematic risk. In this way, on an effective and active market, diversified investors impose prices which must be accepted by other i.e. less diversified or completely undiversified investors.

the light of the above, it should be also noted that the preparation costs borne by a private company to go public (e.g. prospectus preparation, legal and financial advisory services, broker, and other fees) cannot be treated as transaction costs within the meaning of IFRS 13, but rather as costs incurred to execute the HBU strategy.

It is also worth highlighting that the assumption of existence of an active market which allows for diversification and, in consequence, elimination of specific risks is in concurrence with the Capital Asset Pricing Model (CAPM). Due to this fact, the CAPM model should be treated as an appropriate tool for finding objective expected (by the owners) rates of return (ERR), but only on perfectly active and effective capital markets.

The potential application of the CAPM model in ERR calculation, the elimination of hidden inefficiencies from the expected FCF, and the incorporation of the cost of IPO to FCF calculation do not automatically create conditions which are fully compliant with the concept of the most advantageous market. According to various research (Certo et al., 2009; Ngo & Varela, 2012; Wu, 2012), the phenomenon of underpricing can be observed in the IPO process which manifests itself via lower share prices in IPOs than at the end of the first trading day. Hence, it is evident that a successful IPO requires a discount in favor of potential investors to compensate for the risk incorporated in purchasing of private firms (see section 2). Thus, an additional adjustment to the presented approach is needed to transfer the valuation environment from perfectly active and effective capital market to the most advantageous market, which assumes a certain level of market inefficiency observed in the IPO process.

A part of IPO shares is sold on the first trading day by investors which acquired the shares in the IPO process. On that day, other investors (diversified included) offer prices which they believe will allow them to achieve a fair ERR on their invested capital. The prices are set by diversified investors (immune to specific risks) who use CAPM-related logic for calculating their ERR. Hence, the average percentage difference between the prices observed on the first trading day and the prices obtainable in IPO can be treated as a discount which should be used to adjust the values calculated based on the CAPM model to the conditions of the most advantageous market environment on which private companies can be sold. We named the discount as the Most Advantageous Market Discount. Formula 1 presents the way of individual discount calculation, while formula 2 defines MAMD.

$$d = \frac{p - p_e}{p} \quad (1)$$

Where:  $d$  - individual IPO discount;  $p$  - first day trading price;  $p_e$  - the price in IPO i.e. issue price.

$$MAMD = \frac{\sum_{i=1}^n d_i}{n} \quad (2)$$

Where,  $MAMD$  - most advantageous market discount calculated based on arithmetical mean of individual IPO discounts;  $n$  - number of IPOs

In order to avoid distortions deriving from different sizes of each IPO and, what follows, from different initial values of companies used to calculate MAMD, the weighted average MADM should be calculated ( $MAMD_{WA}$ ). Formulas 3 and 4 present the way of calculating  $MAMD_{WA}$ :

$$D = P_{FD} - P_{IPO} \quad (3)$$

Where,  $d_{wa}$  - the total discount for an individual IPO;  $P_{FD}$  - first day capitalization of an individual IPO (i.e. the total number of shares multiplied by the first day trading price);  $P_{IPO}$  - the value of the firm in IPO (i.e. the total number of shares multiplied by IPO price).

$$MAMD_{wa} = \frac{\sum_{i=1}^n D_i}{\sum_{i=1}^n P_{FDi}} \tag{4}$$

Where,  $MAMD_{wa}$  - most advantages market discount calculated based on weighted average.

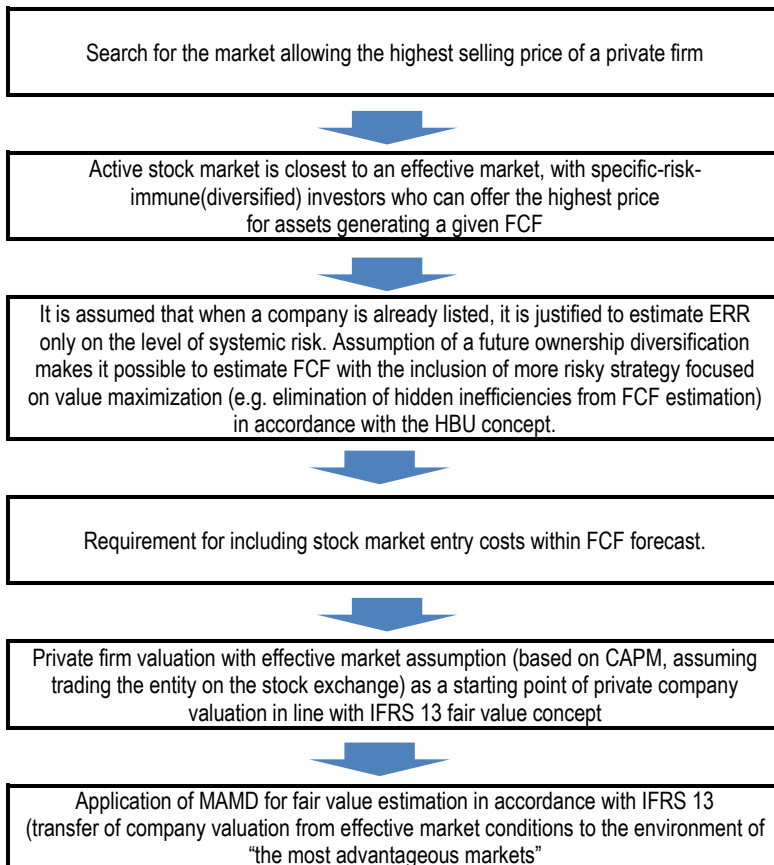
In accordance with IFRS 13, the equity fair value valuation of a private firm should be calculated using formula 5.

$$E_{FV} = E_{EM} \times (1 - MAMD_{wa}) \tag{5}$$

$E_{FV}$  - equity fair value of a private firm valued in line with IFRS 13;  $E_{EM}$  - equity value of a private firm valued in the conditions of effective market (based on CAPM and HBU assumptions applied in FCF estimation).

Figure 1 summarizes the reasoning leading to the application of the MAMD concept in fair value valuation according to IFRS 13.

FIGURE 1. JUSTIFICATION FOR APPLICATION OF MAMD IN ERR ESTIMATION ACCORDING TO THE FAIR VALUE CONCEPT



## The most advantageous market discount in years 2010 - 2013 - empirical results

This section presents an estimation of MAMD and MAMD<sub>wa</sub> for chosen European stock markets: London, Paris, Frankfurt, Warsaw, and Zurich in the period of 2010 - 2013. Only the main stock markets' indices, such as London Main, have been taken into consideration assuming that they have the highest liquidity potential. The database consists only of those companies which launched Initial Public Offers during the researched period of 2010-2013. Additional releases were excluded from the calculation. The list comprises of the following European Stock Exchanges: London Stock Exchange, Frankfurt Stock Exchange, NYSE Euronext Paris, Swiss Six, and Warsaw Stock Exchange.

The data has been gathered based on 'new issues/listings' lists available on a given Stock Exchange website, from January 1, 2010 to December 31, 2013. The two most important aspects of information were the offering price (from a given IPO) and the stock price at the end of the first trading day.

The outliers in terms of overall capitalization have been excluded from the sample.

TABLE 1. MAMD RESULTS FOR LONDON SE, FRANKFURT SE, NYSE EURONEXT PARIS, SWISS SIX, AND WARSAW SE (2010-2013)

Stock Exchange	Total number of IPOs	MAMD	MAMD <sub>wa</sub>
London Stock Exchange	105	2.76%	8.15% ***
Frankfurt Stock Exchange	13	4.22% *	6.31% *
NYSE Euronext Paris	34	3.34%	8.18% *
Swiss Six	9	4.75% ***	6.55% ***
Warsaw Stock Exchange.	71	5.43% ***	6.39% *

Note: \*\*\*, \*\*, and \* indicate significance at the levels of 1%, 5%, and 10% respectively

Table 1 presents the results of MAMD and MAMD<sub>wa</sub> calculations for the analyzed markets. As indicated before, MAMD<sub>wa</sub> addresses the issue of different values of particular IPOs and therefore it is the recommended approach to the most advantageous market discount estimation.

To test the statistical significance of the obtained results, standard t-tests have been used for both arithmetical mean and weighted average. All of the MAMD<sub>wa</sub> results and the majority of the results for MADM are statistically significant for all of the analyzed markets, yet, due to the limited number of observations, the results should be treated with caution.

### Concluding remarks

The adoption of IFRS 13 sets a methodological framework of private firm fair value valuation. The requirement to use the highest and best use concept along with the most advantageous market environment in the valuation process creates space for development of practical valuation tools. The presented approach should be treated as one such tool, which addresses the most important requirements of IFRS 13 in a comprehensive way. It involves employment of market, observable data, and underpricing - a phenomenon well-grounded in finance literature and research - to estimate MADM. Application of the MAMD concept in line with CAPM and HBU results in a consistent valuation methodology which meets the requirements set forth in IFRS 13. The presented approach can be theoretically applied in valuation of all types of private firms. However, some methodological problems can occur in valuation of small private firms which are not - or cannot - become mature enough to prepare an IPO for main stock markets. Alternative

capital markets are characterized by a lack of liquidity and a huge volatility of differences between first day closing prices and IPO prices. Therefore, the possibility of calculation of statistically significant MAMD is very limited in the case of small companies debuting on alternative markets. Hence, further research should concentrate on the tools of development which may be appropriate for fair value valuation of small private companies.

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