salvidio & partners

I 2023

Trading Multiples For Business Valuations

83 Industries and 212 Sub-industries

Table of contents

Salvidio & Partners
Via Antonio Gramsci, 9
00197 Roma
www.salvidio.com
Tel: +39.06.3610885
Fax: +39.06.3236476
E-mail: info@salvidio.com

3.11.1.3 Industrial REITs

3.11.1.3 Industrial REITs (Starts 2023-03-31)

3.11.1.4 Hotel & Resort REITs

3.11.1.4 Hotel & Resort REITs (Starts 2023-03-31)

3.11.1.5 Office REITs

3.11.1.5 Office REITs (Starts 2023-03-31)

3.11.1.6 Health Care REITs

3.11.1.6 Health Care REITs (Starts 2023-03-31)

3.11.1.7 Residential REITs

3.11.1.7 Multi-Family Residential REITs (Starts 2023-03-31)

3.11.1.8 Retail REITs

3.11.1.8 Retail REITs (Starts 2023-03-31)

3.11.1.9 Specialized REITs

3.11.1.9 Other Specialized REITs (Starts 2023-03-31)

3.11.2.1 Real Estate Management & Development

3.11.2.1 Diversified Real Estate Activities (Starts 2023-03-31)
3.11.2.1 Real Estate Operating Companies (Starts 2023-03-31)
3.11.2.1 Real Estate Development (Starts 2023-03-31)
3.11.2.1 Real Estate Services (Starts 2023-03-31)

1 Introduction to Multiples presented in this Report

Introduction to multiples presented in this report

1. Who we are

This quarterly research report on industry and sub-industry multiples has been prepared by:

salvidio & partners

Salvidio & Partners is a firm of chartered accountants and auditors specialized in valuation of business, business interests, intangible assets, rights and damages.

We act as counsel to entrepreneurs, corporations and law firms, as well as to other auditors and accountants.

To exemplify, we provide valuation services in case of:

- sales, acquisitions, mergers
- buy/sell agreements
- shareholder and partnership buyouts
- disputes and litigations
- successions and marital dissolutions
- impairment tests and purchase price allocations
- crisis management and insolvency procedures
- transfer pricing and other taxation-related estimates of business and assets.

Salvidio & Partners Ltd.

Chartered Accountants and Auditors

www.salvidio.com

info@salvidio.com

Our management's credentials and affiliations:

RICS Registered Valuer

ICAEW

Registered Chartered Accountants Rome - Italy

Before accessing charts and tables in Section 3 of this report, please carefully read Disclaimer as well as the guide and the explanatory notes that you will find on the next pages.

Introduction to multiples presented in this report

2. Disclaimer

Salvidio & Partners has estimated the industry and sub-industry multiples presented in this report by using information, obtained through third-party sources, consisting of market, financial and industry classification data relating to thousands of public companies. Salvidio & Partners has not verified such data to ensure that they are true, complete and otherwise error-free.

Information contained in this report and in our website pages is provided by Salvidio & Partners "as is" and is offered without any claim to being complete, exhaustive, theoretically correct, free from calculation errors (errors are always possible and not infrequent when a large body of data is being processed).

Use of multiples presented in this report or otherwise accessible on Salvidio & Partners website is at exclusive risk and responsibility of the User and/or of anyone else who becomes aware of them. Salvidio & Partners assumes no responsibility in the event of negative consequences for the User and/or for anyone else that may arise, directly or indirectly, from the use of multiples presented in this report and/or from using any other information accessible to the web pages of Salvidio & Partners.

Salvidio & Partners does not provide any kind of advice and/or suggestions about the use of the multiples presented in this report. The selection and use of the multiples are entirely left to the User, who undertakes them on the basis of his/her personal judgement, exclusively at his/her own risk and in absolute independence of Salvidio & Partners.

Valuation of business and business interests, of shares, of tangible and of intangible assets, of any other economic asset or liability constitutes a difficult and complex activity, for which it is necessary to have in-depth and specialized knowledge of a wide range of disciplines (such as accounting, finance, taxation, planning, business organization, etc.) as well as to have a broad set of information about the valuation target,

considered in its current and prospective, operational, financial, and market context.

The mere use of industry and sub-industry multiples cannot in any case be considered sufficient in itself for the purposes of a valuation. The use of such multiples can, at most, provide broad brush indications, that shall be considered of provisional and preliminary nature, and which must be verified by diligently investigating the risk and return profile of the valuation target.

Such an in-depth valuation study must be conducted professionally, by an accredited expert in valuations, who refers to scientific literature and to the «valuation standards» issued by the organizations and bodies in charge to set them.

By way of example, valuation standards are issued by the International Valuation Standard Council (IVSC) or by The Appraisal Foundation (TAF) as well as by many other entities and professional associations worldwide.

Salvidio & Partners is under no circumstances required to provide the market, financial and industry classification data of the individual public companies underlying the multiples presented in this report or otherwise accessible on its web pages.

This report is published quarterly. Salvidio & Partners reserves the right, at any time and without prior notice, to end publication, to modify or supplement the contents of the quarterly reports, as well as to modify the criteria for estimating and presenting the industry and sub-industry multiples.

* * *

Introduction to multiples presented in this report

3. Quarterly industry and sub-industry trading multiples

In the charts and tables in Section 3 of this report, we exhibit historical time series of quarterly industry and sub-industry[1] *trading*[2] *multiples*. We present their *medians*, *quartiles*, *means*, *highs* and *lows,* estimated over a five years time period at the end of the most recent quarter[3].

We also indicate how quarterly industry trading multiples are distributed by the expected growth of underlying denominators and by the market capitalization size of underlying companies.

Featured industry multiple categories in the charts and tables in Section 3 are:

- Enterprise value to Sales (EV/Sales)
- Enterprise value to Ebitda (EV/Ebitda)
- Enterprise value to Ebit (EV/Ebit)
- Market Value of Equity to Earning before Taxes (P/Ebt)
- Market Value of Equity to Book Value (P/Bv)
- Market Value of Equity to Tangible Book Value (P/Tbv),

With appropriate caution industry multiples may be used as empirical indicators to derive a first, rough estimate[4] of the value of business and business interests.

4. More multiples data on our website

We estimate industry multiples reported in this report on the basis of individual *trailing*[5] *multiples* that we calculate for thousands of companies quoted on stock exchanges worldwide. We also estimate *leading*[6] *multiples* and multiples differentiated by geographical area. A comprehensive report of all industry multiples that we estimate (trailing, leading, by zone) would, however, extend over several thousands of pages, making it difficult to download and cumbersome to print.

For a broader analysis of multiples that includes also leading ones and the possibility to differentiate them by geographical zone, we recommend you to access our website's interactive data pages at www.salvidio.com.

By accessing our website you will be able to display and download both *trailing* and *leading* industry and sub-industry multiples, as well as to filter them by *country* or by *geographical zone.*

You will also have the possibility to exclude or include *negative*[7] *multiples*.

Most multiple series on our website extend far more back in time than the five years period featured in this report's charts and tables in Section 3.

5. Sources of raw data

In calculating individual company multiples and for their subsequent aggregation by industry and by sub-industry, we rely mainly on individual company stock prices and financials, market and industry classification data provided by *Standard & Poor's Capital IQ*® database[8]. Please refer to endnotes for a brief comment concerning comparability of financial data[9] content and changes in industry classification structure over time[10].

6. Industries and sub-industries

You will find a list of industries and sub-industries as well as their definitions in Section 2 of this research report.

While sub-industry multiples, being more granular, allow us to make a more targeted selection when using them to value businesses, they may sometimes be based on a too limited set of underlying individual company multiples data.

In such cases, industry multiples, although less granular and therefore also less specific-to-target, may offer a better alternative to sub-industry ones.

Introduction to multiples presented in this report

7. Multiples in case of unusual trading activity affecting share prices

At the end of each quarter, we gather market and financial information of several thousand quoted companies to calculate multiples. This large amount of data exceeds by far the possibility to verify collected items one by one. We therefore cannot filter out or adjust multiples whose values may be temporarily distorted by unusual trading activity affecting their underlying companies' share prices. Anomalous trading activity may typically depend on the announcement of an acquisition, of a merger, of a takeover bid or on other non-recurrent events that may temporarily sharply inflate or deflate the trading prices of involved companies' shares.

Such unusual trading activity will affect individual company share prices and multiples for a limited time and will not have a relevant impact on industry multiples aggregates. Industry multiples presented in this research are the result of the aggregation of many individual company multiples observed over a prolonged period of time. The effect of temporary unusual trading activity of shares of one company is therefore, in our opinion, diluted by the aggregation with the multiples of other companies as well as by the length of observation time period and, finally, by the filtering of outliers (see later below).

8. Filtering out multiples in case of «thin trading» of shares

Some trading multiples may resent of *thin trading*[11] of underlying company's shares. Differently than occasional activity and price high/low spikes arising from announcements (see above) and other temporary trading anomalies, thin trading may last over a long period of time. Consequently, multiples may resent of illiquidity of underlying shares and be less responsive to changes in a company's fundamentals.

We try to mitigate the negative impact on data quality of prolonged illiquidity of shares, by excluding from our estimates of industry and sub-industry multiples all multiples of companies that do not meet following requirements:

- average market capitalization in the twelve months prior to last quarter's end not less than Euro 50 million;

- pricing history of shares of at least twelve months prior to last quarter's end and no "zero-value" trading days;

- average daily traded value not less than 1/10.000 of average market capitalization over the last twelve months prior to last quarter's end.

While filtering rules above are discretionary, they constitute, in our view, a reasonable compromise between the need, on one side, to eliminate data that may resent of illiquidity of underlying companies shares, and, on the other side, to aggregate the highest possible number of individual company multiples in industries and sub-industries statistics.

9. How do we calculate multiples of companies

As already explained, industry multiples presented in this report are based on the aggregation of multiples of quoted companies. The criteria of estimation of such individual company multiples are explained below.

We calculate *Enterprise Value* (EV), which is the *numerator* of *asset side* multiples featured in this research report, as the sum of:

- a quoted company's *Market Value of Equity (P)*[12]*,* and

- of its *Net Financial Position*.

We estimate the *Market Value of Equity,* which is the *numerator* of *equity side* multiples*,* as the sum of:

- average of a company's market capitalization in the three months period before each quarter's end,

- last reported value of preferred shares as of the quarter's end date,

- last reported value of minorities as of the quarter's end date.

Introduction to multiples presented in this report

We estimate *Net Financial Position* as the sum of:

- last reported *Net Debt* as of the quarter's end date, which is the sum of Total Debt of company less cash and equivalents[12-14];

- last reported *Pension Provision* as of the quarter's end date.

Denominators of *asset size multiples* are *Sales*[13-15], *Ebitda* and *Ebit* of quoted companies.

We refer to their *last twelve months* (LTM) reported values as of the quarter's end date.

Earnings Before Taxes (Ebt), Book Value (Bv) and Tangible Book Value (Tbv) are the *denominators* of *equity side* multiples.

We refer to *last twelve months* (LTM) reported value of Ebt as of the quarter's end date.

With respect to Bv and Tbv we refer to their last reported values as of quarter's end date.

Tbv is calculated as Bv less Goodwill and Intangible Assets.

10. How do we filter outliers when estimating industry multiples

Industry and sub-industry multiple values featured in box plot charts and in tables of Section 3 have been estimated after eliminating outliers from multiples of companies.

To detect outliers, we first calculate the interquartile range (IQR = Quartile 3 – Quartile 1) of unfiltered company multiples. We then multiply IQR by ± 1,5 and we add/subtract the result to Quartile 3 and to Quartile 1 respectively, determining a «relevance range». Any multiple that falls above or below such range is considered an outlier. We do not include outliers in the calculation of industry and sub-industry multiples aggregates like means, medians, and quartiles.

We do not plot outliers in the charts or present them in the tables.

11. Industry and sub-industry multiples in Section 3

In Section 3 we present the values of industry and sub-industry multiples from three different viewpoints:

a. *trend of multiples over time*: we report *means*, *medians*, *quartiles*, *maximum* and *minimum* values of multiples estimated for companies classified in industries and sub-industries. Company multiples have been calculated, as explained before, on the basis of the raw data collected at the end of each quarter. Statistics are presented by means of box and whiskers charts and of tables over a period of five years ending on the most recent quarter;

b. *multiples distribution by growth*: company multiples have been arranged to show their distribution by the average expected growth rate of their underlying denominators. The average expected growth rate of multiples denominators is calculated on consensus estimates for the two years after each quarter. Multiples distribution is presented by growth intervals or ranges by means of tables. It is worth noticing that:

- distribution by growth data are reported considering company multiples calculated on the most recent quarter;

- for each expected average two years growth range, we report the *number of companies,* and their multiples' *means*, *medians*, *quartiles*, *minimum* and *maximum* values. The total number of company multiples considered in the distribution by growth may be significantly lower than the total number of last quarter's multiples presented in the box and whiskers charts that show the trend of multiples values over time. This discrepancy is explained by the fact that consensus estimates are available only for a limited number of quoted companies;

Introduction to multiples presented in this report

c. *multiples distribution by the size of companies as measured by their market capitalization*: company multiples have been arranged to show their distribution by the size of underlying companies as measured by their market capitalization. It is worth noticing that:

- distribution by market capitalization data are reported considering company multiples calculated on the most recent quarter;

- for each market capitalization range, we report the *number of companies* and their multiples *means*, *medians*, *quartiles*, *minimum* and *maximum values*.

* * *

12. Explanatory notes

1. For a plain reading of this report, we may, hereinafter recall both industry and sub-industry multiples collectively as «industry multiples», unless a distinct reference to sub-industry multiples is required for a better understanding of methodology and content of this research.

2. For the purpose of this report, the expression *trading multiples* refers to ratios (like EV/Ebitda, P/Bv, etc.) calculated on publicly traded companies, using market data (share prices, market capitalization) at the numerator and financial information derived from financial statements or consensus estimates (like Ebitda, Book Value, Expected Earnings, etc.). Trading multiples differ from *transaction multiples*. The latter's ratios calculation relies mainly on acquisition prices of a whole company or of a significant portion of interests in it.

3. We update our industry multiples at the end of each Quarter. Historical quarterly series of industry multiples go back in time for several years (most of them start before year 2000). To access data older than the five-year period featured in this report, you can either download an older report or make us a specific request at supportmultiples@salvidio.com. Or, you can access to our online data pages and autonomously select historical periods of your interests [http//:salvidio.com/multiples].

Introduction to multiples presented in this report

4. Any company valuation based on industry or on sub-industry multiples is affected by large approximation. This depends on the very nature of industry and sub-industry multiples: they represent aggregated values of individual multiples derived of companies that, despite sharing the same industry classification, may possess diversified characteristics that make them not comparable in the same degree among themselves and/or with respect to the «target company». It is therefore highly advisable to consider any valuation based solely on industry or on sub-industry multiples as of provisional and preliminary nature, which must be verified by diligently investigating the risk and return profile of the valuation target and that has to prudently be confronted with an in-depth valuation based on one or more different approaches, as recommended by scientific literature and valuation principles issued by standard setters. See please also Disclaimer.

5. For the purpose of this report, the expression *trailing multiple* refers to ratios (EV/Sales, EV/Ebitda, EV/Ebit, P/Ebt, P/Bv, P/Tbv) where the numerator (EV or P) is estimated on the basis of current data (like Market Capitalization average Net Debt on a Quarter's end date) and the denominator (Ebitda, Bv, etc.) also refers to current data. In case the denominator is an Income Statement line item, we refer to its last twelve months figures (LTM) reported or estimated on Quarter's end date). In case the denominator is a balance sheet item, we refer to the last reported or estimated figures on Quarter's end.

6. For the purpose of this report, the expression *leading multiple* refers to EV/Ebitda, EV/Ebit and P/Ebt ratios, where the numerator (EV, or P) is estimated on the basis of current data (like Market Capitalization average Net Debt on a Quarter's end date) and the denominator (Ebitda, Ebit and Ebt) refers to consensus estimates data for future periods.

7. A negative company multiple is, generally, the result of a ratio where the denominator is negative. As an example, a bad performing listed company may show a pre-tax loss. In such a case, its Ebt will be negative. Consequently, its trading P/Ebt multiple will be negative too. When valuing a company (target company) with the multiple method, business valuation practitioners generally tend to exclude negative ratios (multiples) derived from comparable companies. The exclusion of negative ratios implies, however, the assumption that the relevant figures (Ebitda, Ebt, etc.) of the target company to be multiplied by the selected ratios (Ebitda x EV/Ebitda, Ebt x P/Ebt, etc.) reflect the target company's steady positive performance. The inclusion of negatives individual company multiples in aggregating an industry or sub-industry multiple may be useful to get a general sense of the market. Inclusion or exclusion of negative multiples is therefore a function of the purpose of the analysis. Please note that the industry and sub-industry multiples featured in this report are by default estimated excluding negative individual company multiples.

8. Since this would lead to the dissemination of copyright protected intellectual property, we will not disclose individual company raw data that we gather to estimate the industry and sub-industry multiples. Furthermore, we will neither disclose individual company multiples.

9. *Standard & Poor's Capital IQ®* database is well known for the accuracy and timeliness of financial and market information. The financial data of listed companies are reclassified according to standardized presentation models. This approach greatly facilitates worldwide comparability of companies and overcomes the difficulties posed by different accounting standards. That said, in aggregating the financial statement data of individual companies to build industry and sub-industry multiples, we refer to the standardized data of Standard & Poor's Capital IQ® precisely because of their merit in terms of homogeneity and comparability, to which is added the practical advantage of their effectiveness when, as in our case, one shall process thousands of accounting information pieces.

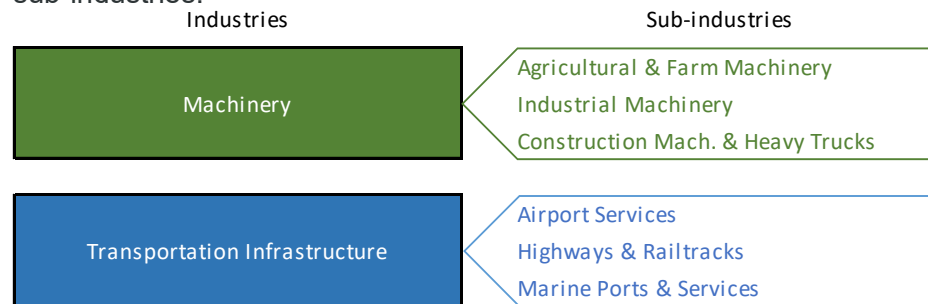# Introduction to multiples presented in this report

The changes in accounting standards that, from time to time, take place, are also reflected, moreover inevitably, on multiples, reducing or improving the comparability of the companies affected by the "accounting" changes with respect to those that are not affected, not without the possibility that there may be repercussions on the prices of their equities. More generally, the use of multiples built on the data of listed companies for the purpose of estimating unlisted companies may suffer an additional approximation if the accounting principles of the former are different from those adopted by the latter. In the case of industry and sub-industry multiples, such differences may be mitigated or emphasized, whether or not they are based on the fundamentals of companies in different countries that adopt different accounting standards. The use of industry and sub-industry multiples therefore always incurs a degree of approximation, which is difficult to avoid, in relation to the underlying accounting principles of both the companies in the sample underlying the multipliers and the company being estimated.

10. Following scheme exemplifies the relationship between industries a sub-industries:

Industries	Sub-industries
Machinery	Agricultural & Farm Machinery
	Industrial Machinery
	Construction Mach. & Heavy Trucks
Transportation Infrastructure	Airport Services
	Highways & Railtracks
	Marine Ports & Services

It is worth noting that the statistical aggregates of Industries are not calculated adding together those of their constituent Sub-industries. Instead, we calculate the statistics of each Industry (likewise those of the Sub-industries) on the basis of the individual multiples of companies classified in the underlying Sub-Industries.

As explained previously, we eliminate outliers, running a «IQR-based» filtering on individual multiples. Such filtering method implies that threshold of discard of outliers is not always the same, but can vary, depending on the distribution and the values of the individual company multiples. As a consequence, the statistics presented with respect to an Industry (values of multiples and number of companies) are generally different than the mere addition of the statistics reported for the constituent sub-industries. These difference can be easily noted comparing the count of companies reported quarterly for an Industry and the total number of companies of the related Sub-Industries.

From time to time, industry classification structure information we attain from *Standard & Poor's Capital IQ*® will undergo changes:

- industries and sub-industries may be discontinued. When this happens, our corresponding multiples industry and sub-industry data series will also be terminated;

- new industry and sub-industries may be introduced. We will, therefore, start corresponding multiples industry and sub-industry data series. User shall be aware that it will take a considerable time to build a series of quarterly multiples for new industries and sub-industries (at its very beginning, a new industry or sub-industry multiples series will feature multiples for the most recent quarter only. User is encouraged to get in contact with us so we may provide support);

- finally, industries and sub-industries definitions and descriptions may also from time to time change. We will reflect such changes in our industry and sub-industry multiples series.

Introduction to multiples presented in this report

11. Thin trading is a common expression to indicate lower trading frequency of shares of less known companies listed on stock exchanges.

12. We do not calculate individual company multiples on a per shares basis. Instead, individual company multiples are calculated on the basis of market capitalization and financials. However, we still prefer using "P" (price) as symbol for numerator of equity side multiples, since it is frequently used.

13. Amount of liquidity has been adjusted to properly reflect so called "working cash". See T. Coller, M. Goedhart, D.Wessels Valuation, Wiley, 2010, pag. 143.

14. It should be noted that we utilize a quoted company's Total Revenues figures as denominator in the EV/Sales multiple.

***

Ver. 2 May 2023