






Analyzing Valuation Approaches in Country Bibliographies of Equity: A Bibliometric Analysis

Shendy Amalia¹, Nugraha Nugraha², Maya Sari³,
Toni Heryana⁴

^{1,2,3,4}Universitas Pendidikan Indonesia, Bandung, Indonesia
shendy.amalia@upi.edu

Abstract. This study employed the bibliometric method to analyse the valuation approach in the Bibliography of Countries for Equity. In finance, an accurate equity valuation is an important factor in making investment decisions. However, few studies have comprehensively analysed the various valuation approaches used in the Countries' Bibliography of Equity context. Therefore, this study seeks to fill this gap by analysing the relevant literature. The data were then analysed quantitatively using bibliometric methods, including frequency analysis, author collaboration network analysis, keyword analysis, and publication trend analysis. In order to understand the trend of equity valuation in various countries, a bibliometric study was conducted, which involved the analysis of 402 articles using VOSViewer software. The results of this study provide a comprehensive insight into the valuation approach used in the Country Bibliography of Equities. Various valuation methods are commonly used, including the Discounted Cash Flow (DCF) method, Price/Earnings Ratio (P/E), Price/Book Value Ratio (P/B), and others. In addition, this study also identified publication trends related to equity valuation in the Bibliography of Countries.

These findings have important implications for understanding and developing equity valuation methodologies in the context of investment in different countries.

Keywords: Bibliometric, Book-to-Market Ratio, Cash Flow-to-Price Ratio, Earnings-to-Price Ratio, EBITDA, Equity Country, Equity Valuation, Market Capitalisation.

1 INTRODUCTION

1.1 Background Research

Valuation analysis in the context of sovereign equity has become a topic of interest to financial market academics and practitioners. To understand and predict the performance of sovereign stock markets and index-based products such as exchange-traded funds (ETFs), various valuation approaches have been developed and used. However, to what extent these valuation approaches are effective and reliable in evaluating country equity remains a question that needs to be answered.

In this study, researchers conducted a bibliometric analysis to identify and analyse valuation approaches that have been used in the context of sovereign equity. We included 402 articles indexed on Scopus as the primary data source for our analysis. Using the VOSViewer software, we can visualise and analyse the relationships between these articles based on keywords, authors and references used. "Country Equity " refers to countries analysed and evaluated in the context of equity valuation or analysis. This involves understanding and assessing economic performance, political stability, rule of law, monetary policy, demographic factors, and other elements affecting a country's equity market.

The data states that the countries in the "country equity " category may change over time and depend on the valuation criteria used. However, several countries often considered equity countries or have significant equity markets include the United States, Japan, China, United Kingdom, Germany, Canada, France, Brazil, India, South Korea, Australia, Singapore, Hong Kong, Switzerland, and the Netherlands. Figure 1 shows the distribution of the countries with the world's largest stock markets as of January 2023 by percentage of the total value of global equity markets.

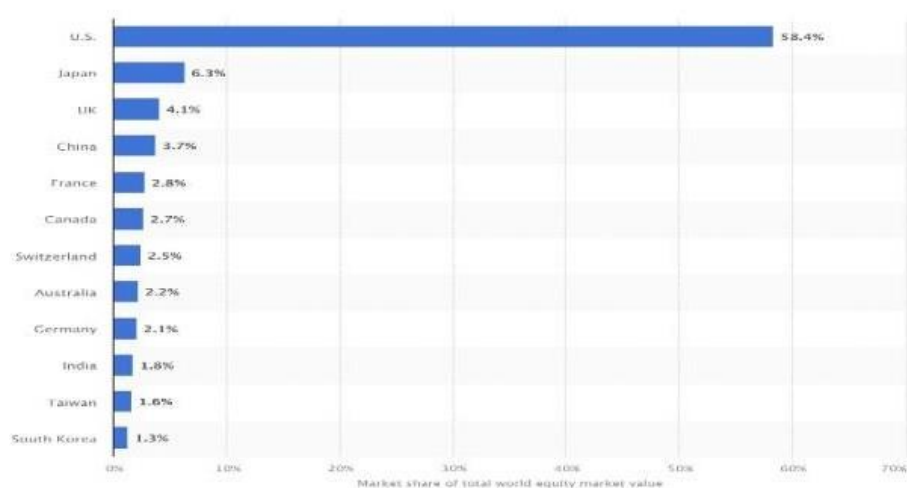


Fig. 1. Equity Country.

By 2023, the stock market in the United States will account for nearly 60 per cent of world shares. The country with the next largest market share is Japan, followed by the United Kingdom, and the lowest acquisition is South Korea, with a percentage of 1.3%. Country equity reflects investment in shares tied to a particular country. This involves analysing and assessing the value of companies operating in that country, prospects for economic growth, political stability, and other factors that can affect the performance and value of shares in that market.

One equity measure often used is the earnings-to-price ratio (E/P ratio). The E/P ratio measures the ratio between the earnings per share generated by a company and its

stock price. This ratio illustrates how efficient a company is in generating profits for shareholders concerning the market value of its shares [1]. In addition, market capitalisation, or market capitalisation, is also an important measure in valuing equity. Market capitalisation measures the total market value of a company by multiplying the company's share price by the number of shares outstanding. This measure reflects market perceptions of firm value and can be used as an indicator of valuation [2].

The book-to-market ratio (B/M ratio) compares a company's book value to the market value of its stock. This ratio indicates whether the company's shares are traded at a higher or lower price than their book value. The B/M ratio can indicate whether the market views a company as a company with growth potential ($B/M < 1$) or as a company facing challenges ($B/M > 1$) [3].

The cash flow to price ratio (CF/P ratio) is a measure that relates the operational cash flow generated by a company to its stock price. This ratio provides an overview of the company's efficiency in generating cash flow and indicates valuation relative to the stock market price [4].

In addition, EBITDA (Earnings Before Interest, Taxes, Depreciation, and Amortization) is also used as an essential measure of equity. EBITDA measures a company's earnings before deducting interest, taxes, depreciation, and amortisation. This measure provides an overview of the potential operating income that can be generated by the company [1].

In research conducted by [5], they analysed the use of equity measures in assessing state equity. They found that earnings-to-price ratio, market capitalisation, book-to-market ratio, cash flow-to-price ratio, and EBITDA were the most common equity measures used in academic research and industry practice. In addition, this study also reveals the relationship between the size of the equity. For example, the earnings-to-price ratio is closely related to market capitalisation, where companies with higher E/P ratios tend to have higher market values. In addition, the book-to-market ratio and cash flow-to-price ratio are also related to the company's valuation and growth potential.

This research provides a deeper understanding of the use and interrelationships of equity measures in valuing sovereign equity. The results of this research can become the basis for financial analysts and investors to develop a more holistic and accurate valuation approach.

2 METHODS

This study uses a bibliometric analysis method to investigate research trends related to equity valuation. In addition, this bibliometric analysis aims to provide a comprehensive picture of the research field, including its growth and impact, as well as to identify the primary authors, institutions, and research topics that appear in the related literature [6][7]. In this context, bibliometric analysis involves a series of steps consisting of identifying relevant literature sources, data collection, quantitative analysis, data visualisation, and interpretation of results (see Figure 2) [6][7].



Fig. 2. Five Steps of Bibliometric Analysis

Step 1. Defining Search Keyword

The first step in this research involved using Publish or Perish software to conduct a literature search in the Google Scholar database, which was selected for its high quality and quantity of literature. In June 2023, a literature search was conducted using the title "Equity Valuation" and a number of related keywords such as "equity valuation, equity country, earnings-to-price ratio, market capitalisation, book-to-market ratio, cash flow to price ratio, EBITDA". This search aims to include all articles relevant to the research topic.

This search will provide a more comprehensive understanding of the research topic and allow researchers to analyse trends and contributions regarding equity valuation. By conducting this literature search, it is hoped that the researcher will find relevant and reliable sources for the bibliometric analysis. Choosing the right keywords and using the right software will allow researchers to get articles that match the research topic.

Step 2. Initial Search Results

In the initial search stage, 402 articles were published within the last ten years (2013-2023). This search result contains various types of articles, such as journal articles, conference articles, book chapters, citations, and reviews found on Google Scholar. After that, a sorting and re-election process was carried out to determine the articles relevant to the discussed topic. These articles are then collected in a research information system (RIS) format based on data from the Google Scholar database. This RIS format includes important information such as citations, bibliographical information, abstracts, and keywords. Researchers can filter articles that meet the specified requirements by utilising the information in the collected RIS data.

Step 3. Refinement of the search result

To find relevant articles on "Equity Valuation" and related topics, such as "equity valuation, equity country, earnings-to-price ratio, market capitalisation, book-to-market ratio, cash flow-to-price ratio, and EBITDA", this research applies two important criteria. First, the articles you are looking for must be written in English because this language is an international language that is widely understood. Second, the selected articles should be journal or conference articles because these types of articles often contain relevant empirical studies. Table 1 provides an overview of the process for screening articles that did not meet the inclusion criteria. After this process, 186 articles were found suitable for analysis in the initial stages of data collection.

Step 4. Compiling the initial data statistics

The PoP software facilitates data collection in RIS format and provides baseline statistics, including year of publication, document type, publisher, and publication details. In addition, PoP software also allows descriptive analysis, such as total publications (TP), total citations (TC), number of citations per year, number of citations per publication, number of authors per publication, h-Index, and g-Index (Hudha et al. al., 2020). Table 1 presents a comparison between the initial search and the refined search.

Table 1. Initial Search

Metrics	Initial search
Title Search	Equity Valuation
Keywords Search	Equity Country
Database	Google Scholar
Languages	All language
Document types	All types
Publication years	Ten years: (2013–2023)
Number of articles	402
Citations	1927
Cities per Year	192,7
Cities per Paper	18.57
Authors per Paper	02.12
h-Index	18
g-Index	42
hl, norm	13
hl, annual	1,3
hA index	7

Step 5. Data Analysis

This research uses performance analysis and scientific mapping to analyse the data. Performance analysis aims to evaluate the contribution of research elements in a particular field, while scientific mapping aims to explore the relationships among these elements. We use PoP software to perform performance analysis, including descriptive analysis, publication trend and citation analysis, author analysis, publisher analysis, and journal analysis. Additionally, we performed citation analysis and occurrence similarity analysis for scientific mapping. To enhance scientific mapping, we use network analysis techniques such as clustering and visualisation with the help of VOSViewer software.

3 RESULTS AND DISCUSSION

3.1 Performance Analysis

Table 2 presents an analysis based on publishers. Search.proquest.com appears as the most productive publisher regarding the number of citations related to equity valuation in equity countries, with 37 publications. Meanwhile, the publisher Elsevier has the

highest number of citations, with 334 citations. This shows that the publications in Elsevier are of reliable quality so that other researchers will cite articles published in Elsevier.

Table 2. Top Publisher Based on Citation and Contribution

Publisher/Publisher	Count of Publisher	Some of Cites
search.proquest.com	37	5
papers.ssrn.com	19	76
Springer	15	72
Elsevier	12	334
Wiley Online Library	9	179

Co-occurrence analysis or co-word analysis is used to examine the relationship between topics in a research domain by analysing the textual material in published works [6]. In this study, co-occurrence analysis was performed using publication titles and abstracts. A minimum threshold of five occurrences was set so that 41 relevant terms were successfully identified, as shown in Table 3.

Table 3. Cluster Analysis

Cluster	Term	Cluster	Term
Cluster 1 (Red)	Cost	Cluster 3 (blue)	brand equity
	country risk		effect
	country risk premium		firm valuation
	equity market		gdp
	equity risk premium		private equity
Cluster 2 (green)	Equity valuation research	Cluster 4 (yellow) ac- curacy	equity valuation model
	risk-free rate		equity valuation models
	business valuation		evidence
	Dcf		multiple
	equity research		Accounting conservatism
Cluster 5 (purple)	literature review	Cluster 6 (tosca)	equity research report
	relative valuation		impact
	valuation technique		industry
			private equity fund
			private equity valuation

3.2 Science mapping and network analysis

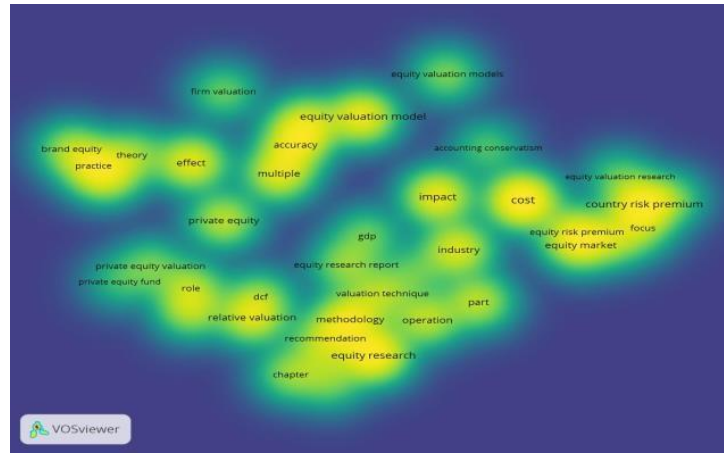


Fig. 3. Density Visualisation by VOSviewer

Based on the density visualisation in Figure 3, the term that appears most frequently is the "equity valuation model", which has the most striking yellow density colour. This is in accordance with the rule that the higher the density of an item, the higher the colour value used in the visualisation, with a range of colours from blue to green to yellow. Thus, the yellow colour that belongs to the term "equity valuation model" indicates that the term has the highest number of occurrences and has the strongest relationship strength among 41 other terms related to the valuation approach analysis in Equity Country. The results of Density Visualization are also in accordance with the Network Visualization and Clustering Analysis described previously.

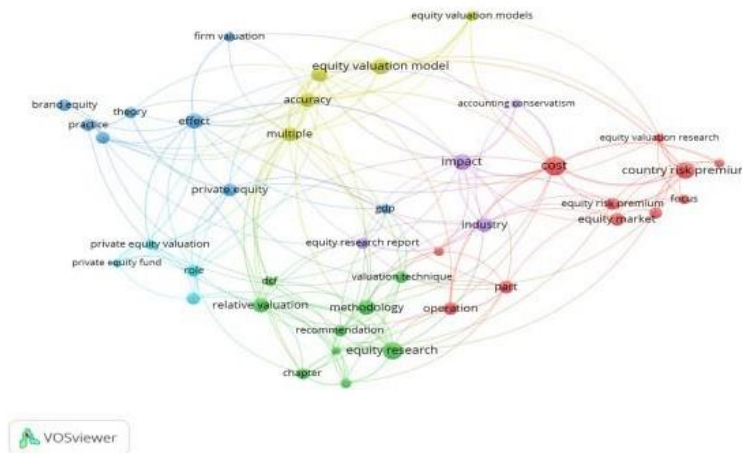


Fig. 4. Network Visualisation

The network visualisation shown in Figure 4 shows the relationship between terms. Figure 4 shows the analysis results in the form of a network visualisation. In this visualisation, the terms related to the analysis of valuation approaches in Equity Country are grouped according to their clusters, using a different colour for each cluster. The largest labels and circles (nodes) indicate that the terms have the greater item weight, meaning they have the most occurrences and the strongest relationship strength. By looking at the sizes of these nodes, we can use this information as a basis for selecting potential collaborators, determining future research focus, or exploring emerging research trends.

In the description of this node, we can make it the basis for conducting research topics currently developing. At large nodes, terms such as cost, country risk premium, equity risk premium, equity market, equity research, and equity valuation model have been widely used in discussions about equity measures or equity valuations. So, we can conclude that if new research aims to explore new knowledge or find novelty, then we can use other terms with smaller node sizes.

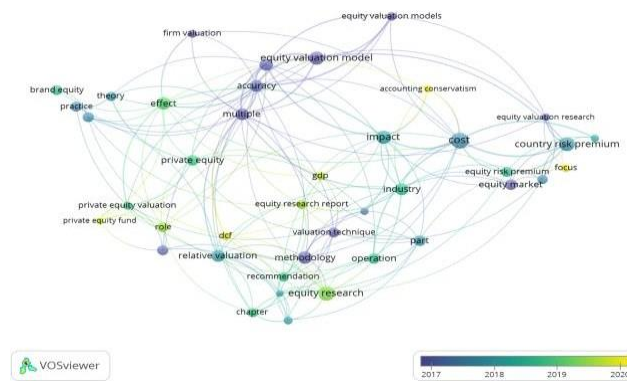


Fig. 5. Overlay Visualisation

The purpose of overlaying visualisation on VOSviewer in bibliometric research is to describe and analyse patterns of relationships between various bibliometric elements such as authors, journals, keywords, or research subjects. Overlay visualisation allows researchers to see how these elements are related and form relevant clusters or groups. By using different colours, sizes, or symbols, overlay visualisations help identify patterns, trends, or relationships that might not be obvious in conventional bibliometric data analysis. This allows researchers to gain deeper insights into a particular research area's structure, interactions, and developments. In addition, overlay visualisation helps identify potential collaborations, emerging research themes, or changing trends over time.

The illustration in Figure 5, Overlay Visualization, presents current research trends on equity valuation. A colour bar at the bottom right indicates terms commonly used over the years. Additionally, this colour bar illustrates how the score is associated with the colour that determines the article's impact factor. The blue indicates that the article's impact factor is below 1, while the green indicates the impact factor is close to 2. The yellow colour indicates the impact factor is three or higher. The results of the Overlay

Visualization show that terms such as dcf (discounted factor), private equity funds and accounting conservatism have become trends in recent years. However, few have discussed them, so research on these terms will significantly contribute to the existing literature on equity valuations.

4 CONCLUSIONS

This bibliometric analysis provides valuable insight into the literature structure regarding equity valuation in the country context. The findings indicate the existence of research groups that are thematically related and interconnected. The research also reveals emerging trends, potential author collaborations, and significant contributions from some of the leading journals in this field.

Based on the bibliometric analysis of 402 articles entitled "Analysing Valuation Approaches in Equity Country Bibliographies: A Bibliometric Analysis", several important conclusions can be drawn.

First, through Overlay Visualization, we found trends in terms such as dcf (discounted factor), private equity fund, and accounting conservatism in recent years. Although this trend has attracted the interest of researchers, there is still little research specifically addressing these terms. Therefore, further research on these terms will significantly contribute to the existing Equity Valuation literature.

Second, some terms have large nodes, such as cost, country risk premium, equity risk premium, equity market, equity research, and equity valuation model. These terms have been widely used in equity measures or valuation discussions. Therefore, if new research aims to explore new knowledge or seek novelty, researchers can use other terms with smaller node sizes.

These conclusions suggest that bibliometric analysis can provide valuable insights in identifying research trends and guiding future research in equity valuation in country contexts. Deeper research on trending terms and the use of alternative terms with smaller node sizes will help expand the literature and discover new knowledge in Equity Valuation.

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