

Valuation Newsletter Highlights



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Determination of Discount for Lack of Marketability (DLOM) Using Option Pricing Models

Introduction

The marketability of equity interests differs according to their inherent rights and features. A discount for lack of marketability applies when we value a non-marketable share. In general, the value of a marketable stock would be greater than the value of a stock with lengthy marketing time or selling limitations. For example, publicly traded stocks can be traded on the market almost instantly, whereas shares in a private company can take a long time to discover possible buyers and finalize a deal.

According to International Valuation Standards (IVS) 105, DLOMs may be quantified using any reasonable method, but are typically calculated using option pricing models, studies that compare the value of publicly-traded shares and restricted shares in the same company, or studies that compare the value of shares in a company before and after an initial public offering.

Option pricing models are most used by the valuation professionals in practice for determining the DLOM. For the purpose of this article, we will discuss the following common option pricing models:

- **Protective Put Option (Chaffe)**
- **Asian Protective Put**
- **Finnerty Model**

Protective Put Option (Chaffe)

- DLOM is estimated using the Black-Scholes model by calculating the value of an at-the-money put option for the subject security.
- The discount is calculated by dividing the value of an at-the-money put with a life equal to expiration by the marketable stock value.

Asian Protective Put

- Asian Protective Put is one of the variants of the protective put method.
- The discount is determined based on the average price over the time to expiration rather than based on the final price hence reducing the risk of market manipulation of the underlying instrument at maturity.
- This method is conceptually similar to Finnerty Model.
- The difference between Asian Protective Put method and Finnerty Model is that the former estimates the DLOM as an average price Asian put which measures the variance between the current price and average price over the holding period while the latter estimates the DLOM as an average strike Asian put which measures the variance between the average price over the holding period and the final price.
- The DLOMs assessed using this method are constantly lower than those measured using the protective put and lower than those measured using Finnerty Model for low-volatility shares but provide a greater DLOM than Finnerty Model for high-volatility shares.

Finnerty Model

- Finnerty Model is also one of the variants of the protective put method.
- It assumes there is an equal probability for the investors to exercise the theoretical liquid security without timing restrictions as they have no special market timing ability.
- The marketability value is measured as the present value of cash flows like an average strike put option.
- It appears to be more appropriately used in circumstances with lower as it provides low discounts at higher volatilities when compared with restricted share studies.

	Protective Put (Chaffe)	Asian Protective Put	Finnerty Model
Similarities	They reduce downside risk but keep upside benefit unchanged.		
	Options are short-term hedging instruments and are not meant to address long-term securities.		
	For most subject securities, put options are not available. Hence, these approaches to estimating DLOMs is theoretical and has a few judgmental inputs.		
Differences	This method implies that liquidity equates to selling a stock in the future at today's price.	These methods estimate the discount based on the average price over the life to expiration rather than based on the final price.	
	Generally, this method estimates higher discounts among other quantitative methods.	Generally, these methods estimate smaller discounts than the protective put.	
	Its characteristics are like a European option (exit strike price).	Its characteristics are like an Asian option (average price).	
	The discount measured using this method consider both lack of marketability and as lack of control or other factors.	These models appear to segregate the marketability discount, which may be considered as additional to the lack of control.	
Appropriateness	This is best used at low volatility at below 50% and a relatively shorter holding period.	Useful for thinly traded markets to prevent manipulation of underlying asset price.	Useful for thinly traded markets to prevent manipulation of underlying asset price. This method is more accurate for short-term, less volatile inputs (30 - 70%).

Figure 1: Overview of the different quantitative methods

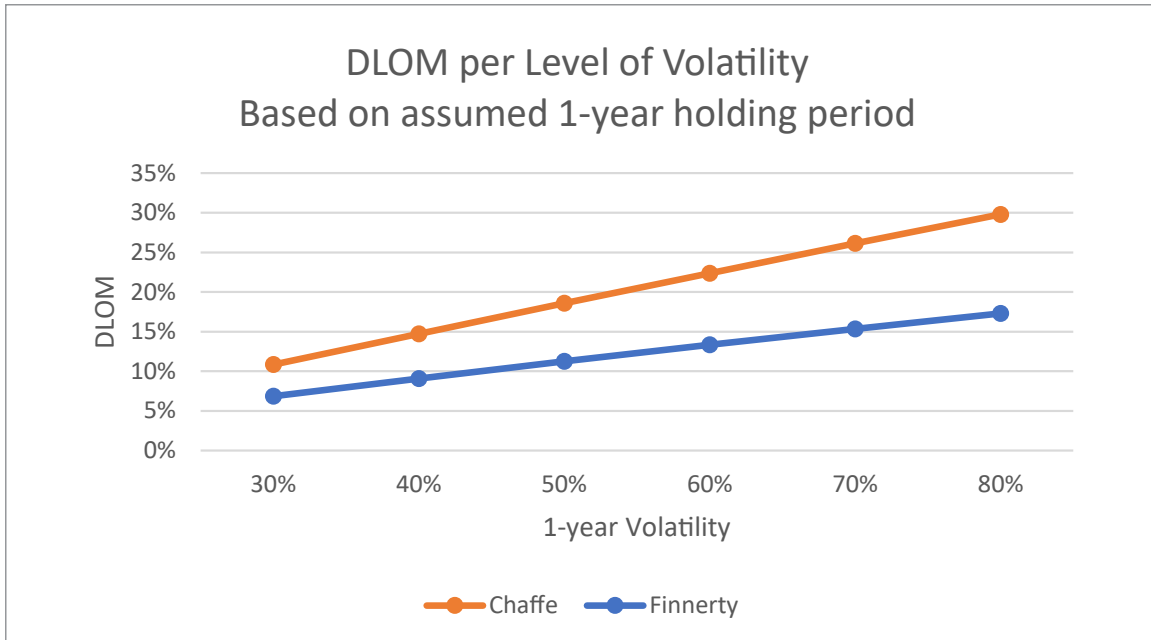


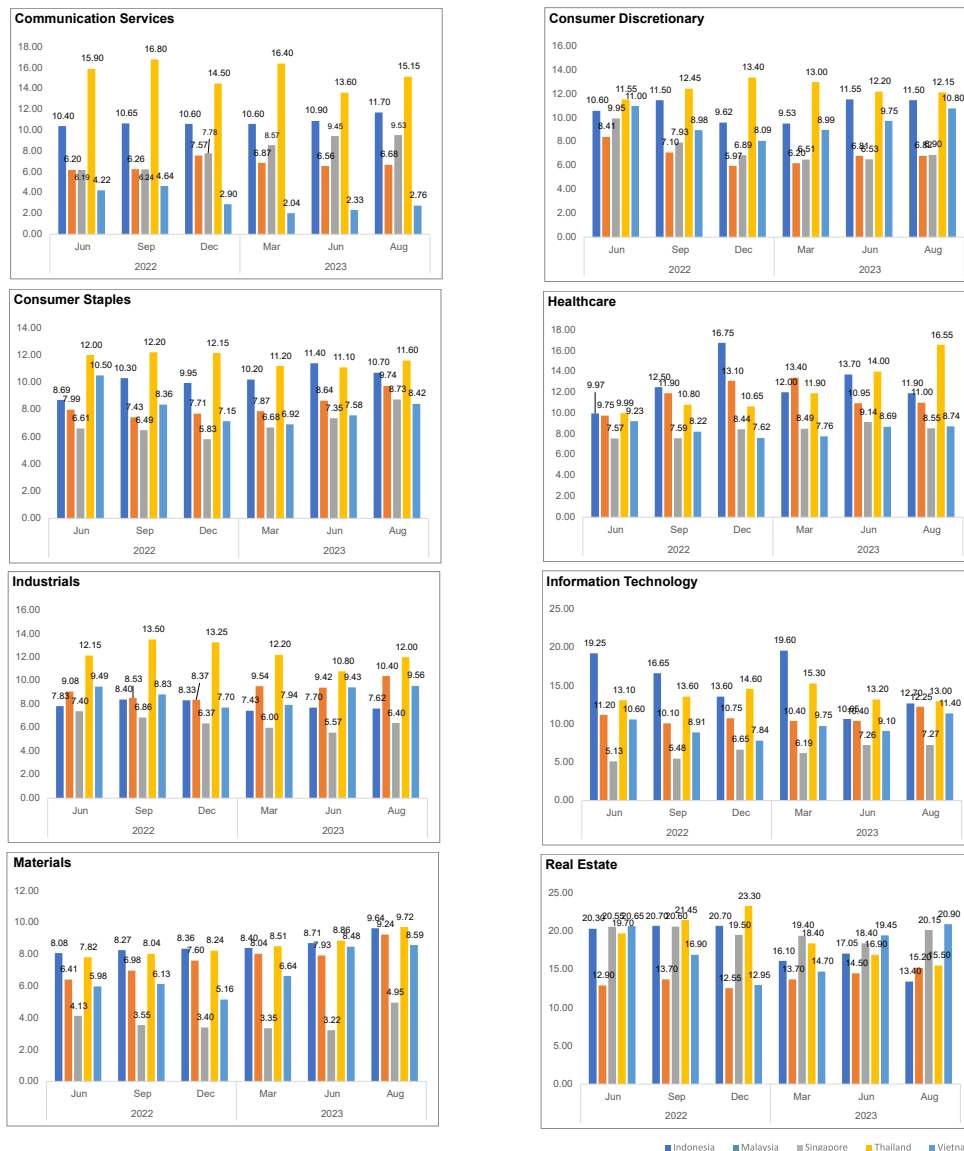
Figure 2: Comparison of DLOM between Protective Put and Finnerty Model per level of volatility based on assumed 1-year holding period.

Conclusion

In conclusion, there are various option pricing models that valuers can adopt when determining DLOM. However, valuers also need to consider qualitative factors such as attractiveness of the subject business, attractiveness of the subject industry, prospects for a sale or public offering of the subject company, and transferability restrictions of the subject interests. Finally, valuers should exercise their professional judgment to determine final DLOM after considering both quantitative and qualitative factors.

Market Data

Median TEV/EBITDA multiples of certain industries in some ASEAN markets



Source: Capital IQ - 6 July 2023

Observations

1. The Real Estate sector has the highest median TEV/EBITDA due to factors such as the tangible value of real estate assets, stable cash flows, potential for long-term growth, limited supply in certain markets, and favorable market conditions.
2. Thailand's consistently high median TEV/EBITDA ratios across multiple sectors imply that companies are being valued at a premium in relation to their earnings. This indicates a willingness among investors to pay a higher price for those investments.
3. Vietnam's significantly low median TEV/EBITDA in the Communication Services compared to other countries suggests a lack of investor confidence.

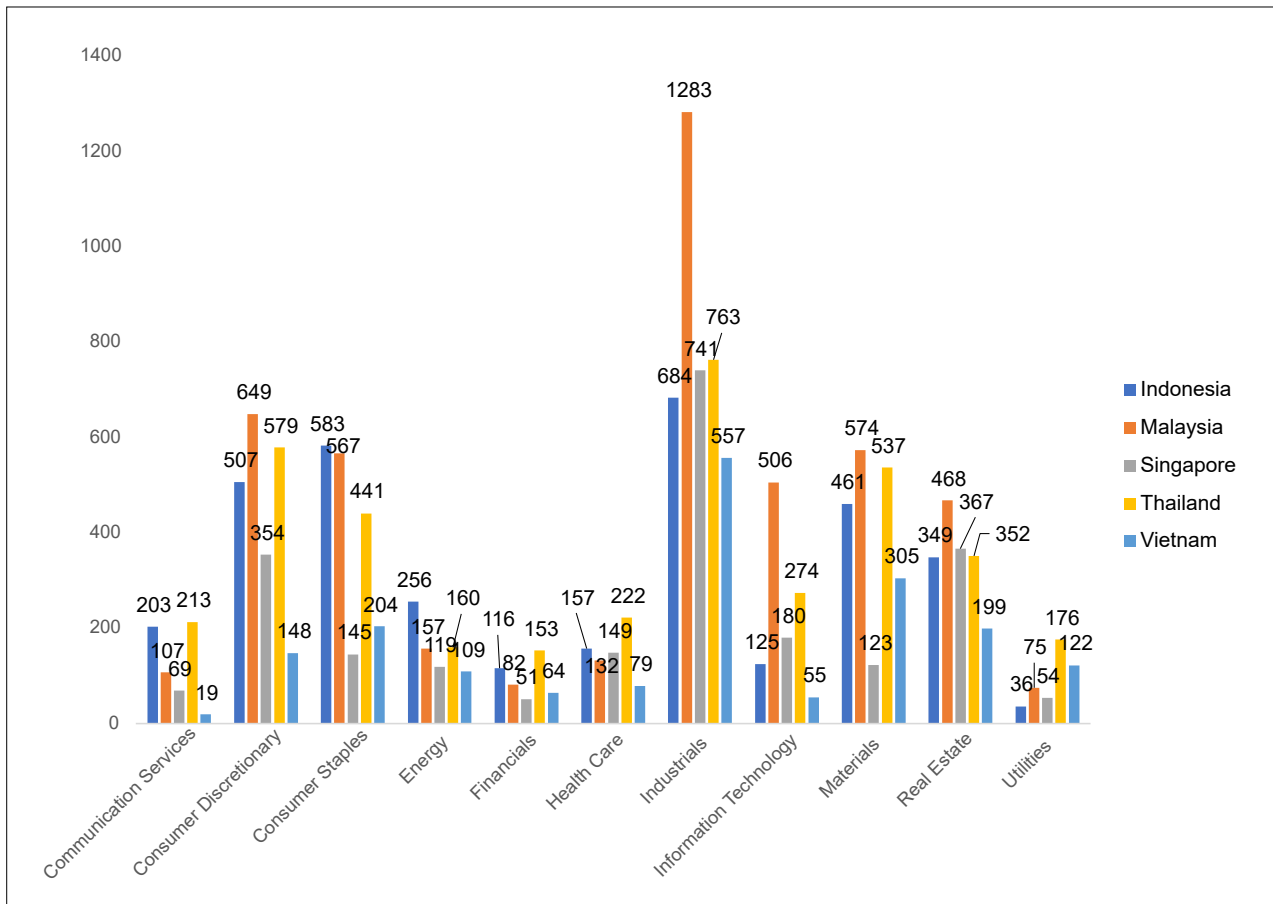
Market Highlights

- The 2023 International Valuation Standards Council (IVSC) Annual General Meeting will be held in Paris from 9 to 11 October and will feature meetings of the IVSC's standards boards, Board of Trustees, and Advisory Forum. Especially Conseil National de l'Ordre des Experts-Comptables and Compagnie Nationale des Commissaires aux Comptes will co-host a comprehensive Valuation Conference which will delve into crucial subjects such as intangible asset valuation, the evolution of the International Valuation Standards, and the valuation challenges posed by dynamic economic and financial markets. (Source: IVSC)
- The 2023 V20 Summit & Conference, organised by the Assessors and Registered Valuers Foundation in association with the IVSC, is scheduled to take place from 27th to 29th October in New Delhi, India and aims to bring together representatives from G20 member and invitee countries to collaborate on solutions for economic stability and achieving the Sustainable Development Goals. This event has several objectives, including raising awareness about the importance of valuation in the global economy, facilitating dialogue and exchange of ideas among valuation professionals, policymakers, and other stakeholders, identifying opportunities and strategies for leveraging valuation to achieve sustainable economic growth and development, and advocating for policies and initiatives that support the development of the valuation profession and promote its role in driving economic and social progress, and promote the use of internationally recognised valuation standards. (Source: IVSC)
- The IVSC has successfully concluded its public consultation on the proposed changes to the International Valuation Standards (IVS). The three-month consultation process, which ended on 28th July 2023, saw active participation from thousands of stakeholders across the globe. During the consultation period, the IVSC engaged in more than 30 virtual discussions and webinars, allowing industry experts, regulatory bodies, and valuation practitioners to provide valuable feedback on the proposed updates. The standard-setting boards will now carefully review the extensive feedback received before finalising the changes. (Source: IVSC)
- As part of the Singapore IP Strategy 2030, the Intellectual Property Office of Singapore (IPOS) and Accounting and Corporate Regulatory Authority (ACRA) has launched the Intangibles Disclosure Framework (IDF) on 4 September 2023. Led by IPOS and ACRA, the IDF was developed by an industry working group with representatives from the accounting, valuation, legal and financial sectors. The framework provides guidelines on how companies can identify and disclose various non-physical assets – such as brand value, patents and registered designs – to the likes of lenders, board members and investors. Companies are also urged to disclose intangible assets beyond those under accounting standards, including human capital and internally generated intangibles. The framework's guidelines are centred on four pillars:
 - Strategy: To help enterprises communicate how their intangible assets contribute to their overall corporate strategy
 - Identification: To recommend how enterprises should categorise intangible assets based on their nature and characteristics, facilitating comparability
 - Measurement: To guide enterprises and stakeholders to make better assessments of the performance of enterprises' intangible assets through relevant metrics
 - Management: To help enterprises identify, assess, and manage risks and opportunities related to their intangible assets. (Source: Straits Times)

Appendix

Number of data points of certain industries in some ASEAN markets

The volume of data points utilized to develop the market data charts are presented in the charts below:



The companies have been categorised into the various industries based on the following descriptions:

Industry	Description
Communication Services	This industry encompasses companies involved in providing a range of communication and media-related services. It includes telecommunications services, which involve the transmission of voice, data, and video communications. Additionally, the industry includes media services such as advertising, broadcasting (television and radio) and publishing (newspapers, magazines). It also incorporates entertainment services, including movie production and distribution, as well as entertainment equipment required.
Consumer Discretionary	This industry encompasses companies that offer non-essential goods and services, catering to consumers' preferences and desires beyond necessities. This industry includes automobile manufacturers and dealerships, retail businesses selling a variety of consumer products, restaurants providing dining experiences, hotels, resorts, casinos, amusement parks, and companies involved in leisure and entertainment activities. Additionally, consumer durables such as household appliances, furniture, and luxury goods fall within this industry.
Consumer Staples	This industry encompasses companies that produce and sell essential, everyday products for daily living. This includes food, beverages, household products, personal care items, and tobacco. Additionally, the industry consists of distribution and retail sectors such as drug retail, food distributors, food retail, and merchandise retail.
Health Care	The Health Care industry includes healthcare equipment and services companies who manufacture and supply medical equipment, devices, and supplies necessary for healthcare facilities. They also offer healthcare services through medical providers, clinics, hospitals, and technology solutions that support efficient healthcare operations. Pharmaceuticals, biotechnology, and life sciences companies are an important component of the industry, encompassing activities related to research, development, and production of pharmaceutical drugs as well as biotechnological advancements and life sciences research.
Industrials	The Industrials industry consists of companies engaged in various manufacturing and industrial operations. This includes sectors such as aerospace, defense, machinery, construction, engineering, transportation, and other industrial-related services. Additionally, the industry includes professional services such as human resources and employment services, research and consulting firms, and companies providing data processing and outsourced services. The Industrials industry plays a crucial role in the economy by manufacturing essential goods, providing services, and offering specialized professional services to support businesses in their operations and decision-making processes.
Information Technology	The Information Technology industry consists of companies that specialize in developing and providing technology products, software, hardware, and IT services. This includes areas such as consulting, infrastructure, semiconductors, internet services, and other technology-related solutions. These companies play a pivotal role in advancing digital innovations, providing technological solutions, and supporting businesses and individuals in their IT needs.
Materials	The Materials industry consists of companies involved in the extraction, processing, and manufacturing of raw materials. This includes sectors such as metals, chemicals, construction materials, paper, packaging, and forestry products. These companies play a vital role in providing the essential materials needed for various industries, including manufacturing, construction, packaging, and other sectors that rely on raw materials for their operations.
Real Estate	The Real Estate industry comprises companies involved in the development, acquisition, management, and ownership of real estate properties. This includes residential, commercial, and industrial properties. Real Estate Investment Trusts (REITs) are also included in this industry, as they invest in and manage income-generating properties. The industry plays a significant role in providing housing, commercial spaces, and infrastructure for various purposes, contributing to economic growth and development.

THANK YOU

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