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Valuation Newsletter Highlights

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Introduction

There are a wide variety of financial instruments, each with their own unique characteristics. For instance, stocks represent company ownership, whereas bonds are debt instruments that pay a fixed rate of interest. The value of derivatives such as options and futures are derived from underlying assets or indices. Companies utilise financial instruments across the entire spectrum to mitigate financial risks and maximise returns. However, these instruments must be reasonably valued and reported in financial statements to provide investors and other stakeholders with reliable information. In this regard, the relevant accounting standards from International Financial Reporting Standards ("IFRS") and Accounting Standards Codification ("ASC") are as follows:

- IFRS 9 Financial Instruments
- IFRS 13 Fair Value Measurement
- ASC 820 Fair Value Measurement
- ASC 825 Financial Instruments

Companies must comply with the prevalent regulatory requirements and adopt best practices for the valuation and disclosure of financial instruments to increase their transparency and credibility. In this article, we will discuss the fundamentals and challenges of valuing financial instruments for financial reporting purpose.

Valuation Methods

Fair value measurement is a crucial aspect of the valuation of financial instruments as prevailing accounting standards requires financial instruments to be recorded at fair value within the reported financial statements. The fair value of a financial instrument is the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date.

The market approach, the income approach, and the cost approach are the commonly adopted approaches for determining the fair value of financial instruments. The market approach values financial instruments using market prices, whereas the income approach calculates the present value of relevant future cash flows. On the other hand, the cost approach determines the value of a financial instrument based on its acquisition or replacement cost.

Depending on the nature and characteristics of various types of financial instruments, each valuation method is applied to a unique set of instruments. For example, the market approach is more suitable for an actively traded financial instrument, the income approach is more suitable for fixed-income securities such as bonds, and the cost approach can be a suitable approach for a recently acquired financial instrument.

Market Approach

The market approach uses relevant information from market transactions involving the same or comparable assets, liabilities, or a group of assets and liabilities when valuing an asset or liability. Hence, traded prices in the active market are considered when determining the worth of a financial instrument. The market approach is often used as the principal valuation method for financial assets and liabilities when observable inputs of equal or comparable instruments are available.

Income Approach

The income approach converts future amounts such as cash flows or income and expenses into a single current (discounted) amount thus, when the income approach is used, the fair value measurement will reflect current market expectations of those future amounts.

Cost Approach

Typically, the cost approach is applied to financial instruments that are not actively traded or have limited market liquidity. This is especially so when the transaction happened relatively recently. Hence, in these situations, the cost of investment could then serve as a valuation reference point.

	Market approach	Income approach	Cost approach
Valuation basis	Value is estimated from the market trading prices of the valuation subject similar asset(s) adjusted for any difference.	Value is derived from the future cash flow generated by the valuation subject, adjusted for time value of money and underlying risk.	Value is based on the cost to replace or replicate the valuation subject.
Key input	• Trading price of the valuation subject or similar asset(s) • Suitable parameter(s) for application of multiples	• Forecast cash flow • Discount rate	• Current replacement cost or investment cost
Merit	• Market-based valuation • Directly observable input • Suitable for companies that have appropriate comparable instruments that are publicly traded or recently transacted	• Best reflects characteristics specific to the valuation subject • Risk can be adjusted at the cash flow or discount rate	• Easy to understand
Drawback	• Market price may not be available or fluctuate wildly • Limited number of similar instruments • Determination of comparability, parameter and level of applicable multiple requires significant experience and judgment • Rarely fully comparable	• Require a supportable and reasonable cash flow projection • Determination of discount rate requires significant experience and judgment	• Entry price may not reflect exit price • Cost data may not be available

Figure 1: Overview of the different valuation approaches

Challenges

Valuing financial instruments for financial reporting can be difficult due to market volatility, instrument complexity, and estimation and judgment errors. Misstating the value of financial instruments can affect the credibility of financial statements and investors' perceptions. The common challenges include:

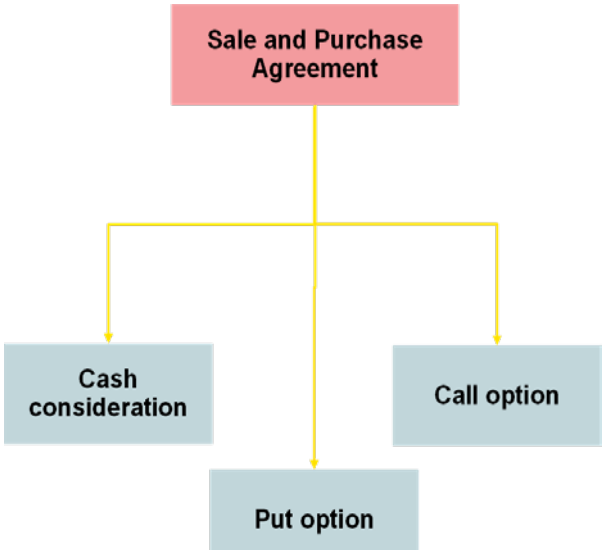
Valuing equity interest in complex capital structures

Companies may possess multiple classes of stock, forms of convertible debt, options, and warrants within their capital structure. It can be challenging to estimate the fair value of a particular class of shares because each class may have different economic rights, control rights as well as other privileges.

For instance, if a company issued ten common shares with a total equity value of $15 million, each common share would be equivalent to $1.5 million by simply dividing the total equity value by the number of shares issued since they are from the same share class. However, in the event where the company issued five common and five preferred shares, the total equity value would remain at $15 million, but the respective value of each share class would differ due to the differing economic rights and control rights associated to the different share classes. Hence, determining the value of each share class would not be as straightforward. For such instances, there are a couple of methods available to determine the value of each share class. These include: the probability-weighted expected return method (PWERM), the option pricing method (OPM), the current value method (CVM), and the hybrid method.

Valuing put and call options as part of corporate transactions

Certain put/call options are commonly included in sale and purchase agreements ("SPAs") as part of the M&A transaction. By structuring SPAs in this manner, it either provides the buyer with security by securing the seller's commitment to the business for a specific period prior to the actual sale, provides the buyer with the insurance they require in certain circumstances to safeguard their investments, or allows parties to sell at a future date with minimal upfront commitments. This is important to the buyer as it ensures that the seller still has "skin in the game".



Due to the inclusion of such financial instruments within M&A deals, the determination of the actual purchase price could be difficult as circular computations would need to be considered.

Take the following fact pattern as an example. Company A has acquired 20% equity interest in Company B for a cash consideration of S$500,000. As part of the deal, the Seller issues to Company A a put option with the right to sell the 20% equity interest in Company B back to the Seller at the original cash consideration of S$500,000.

As part of the financial reporting requirements, the put option will need to be fair valued by Company A and disclosed as an asset within the balance sheet. To determine the fair value of the put option as at the acquisition date, the commonly adopted valuation models are the Black-Scholes model or the binomial model. Either valuation model would require the current share price of Company B as a valuation parameter. Assuming that the M&A deal was conducted at arm's length between willing parties, the typical practice would be to assume that the current consideration paid would be the most appropriate price to be ultilised as the valuation parameter.

This is the conundrum. The consideration paid is the most appropriate price to be utilised as the valuation parameter for valuing the put option. However, the current consideration paid includes the fair value of the put option itself. How then are we supposed to determine the fair value of the put option?

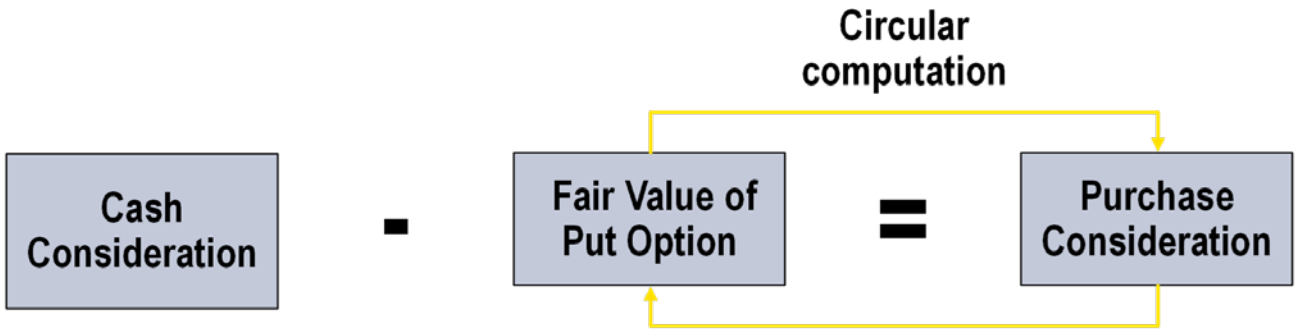


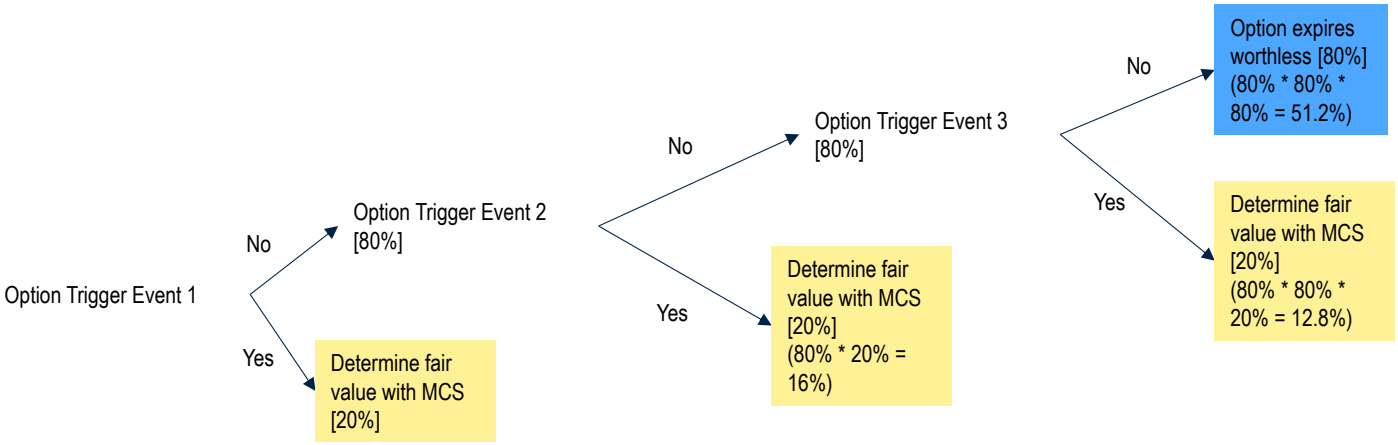
Figure 1: Overview of the different valuation approaches

Based on our experience, it is possible to perform the circular computations via careful linkages within the Excel model while utilising Visual Basic for Applications to control the circular computations. This would then make it possible to determine the fair value of the put option and fair value of the purchase consideration for 20% equity interest in Company B while ensuring that the circular computations still checks out.

Options with multiple exercise dates conditional upon non-financial events

It is a common practice for parties to organise the option to acquire additional shares based upon the occurrence of certain non-financial events. Such events include the investee hitting certain research milestones or meeting certain revenue targets. These non-financial events will then enable the option holder to exercise it.

In these cases, the complication lies in determining the fair value of the options with multiple trigger events and option lives. Based on our experience, we find it easier to establish a probability tree to determine the fair value of the option as at the different trigger events. Using the probabilities, we can then establish the fair value of the option as at valuation date. See illustration below:



Valuing instruments with path dependencies

Certain options have unique features where typical option pricing models such as the binomial model or the Black-Scholes model cannot be adopted to determine the fair value of these options. Take for example a convertible bond whereby the conversion option embedded within can only be exercised when the trading price of the underlying security has been trading over the pre-set threshold for the past 20 trading days out of 30 trading days. Neither the binomial model nor the Black-Scholes model is able to model such features within the models.

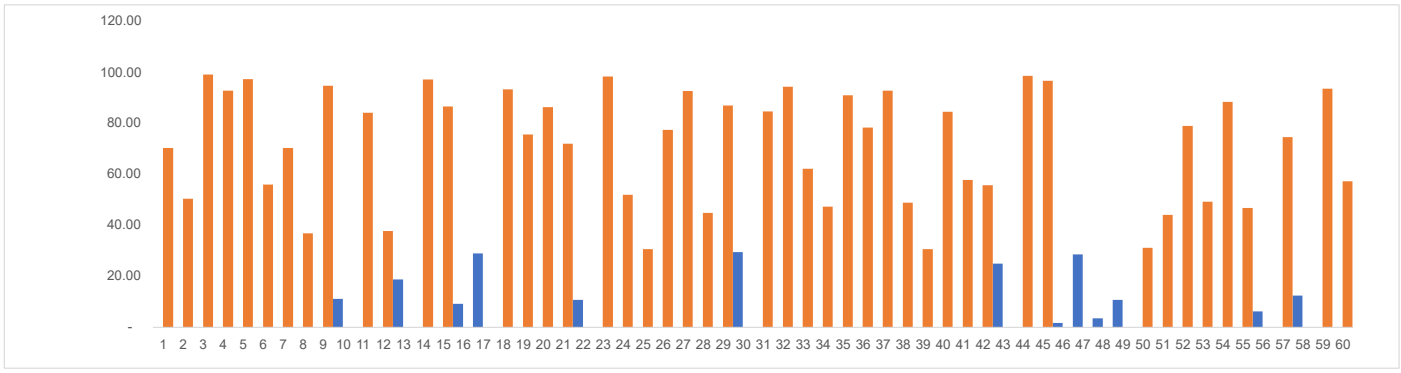
In such instances, the Monte Carlo simulation model is one of the few models that would allow for this feature to be considered. This is because the Monte Carlo simulation model can create many simulation runs of the possible trading paths. As such, this unique condition can be modelled into the model and the exercisability can be determined across all the possible trading paths such that the fair valuation of the convertible bond can be determined accurately.

Example

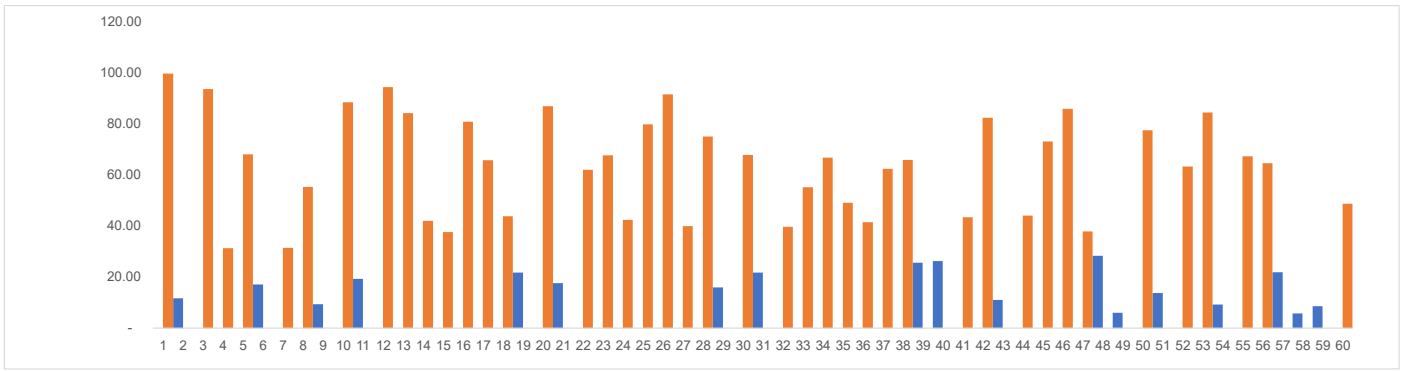
Using a simulation model, such as the geometric Brownian motion model, we can model the possible share price path over the horizon of the instrument. By examining each simulation run, we can determine whether the exercisability condition has been met for each simulation run. With a large number of simulations, we can determine what is the fair value of the instrument by averaging the results across all the simulations.

Below are some illustrations of the share price output from the Monte Carlo model. With these commonly accepted industry practices, we would be able to determine which of the simulations should be considered and which should be excluded for valuation purposes.

Simulation 1 – Orange bars signify the share price crossing the pre-set threshold



Simulation 2 – Orange bars signify the share price crossing the pre-set threshold



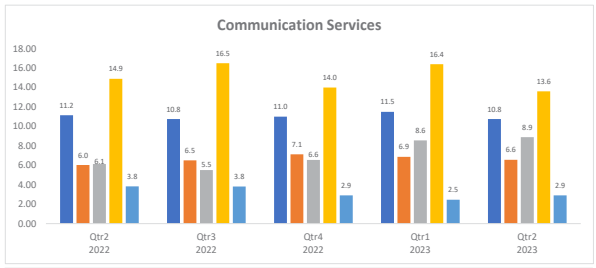
Conclusion

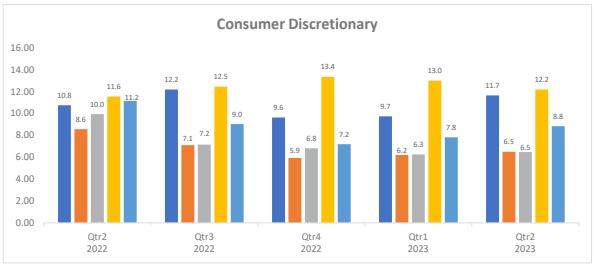
In conclusion, the valuation of financial instruments is a crucial component of financial reporting. Companies must reasonably value and report financial instruments to provide investors and other stakeholders with reliable information. Accordingly, companies must adhere to regulatory requirements, relevant accounting standards, and adopt best practices to enhance transparency and credibility, and to build trust with their stakeholders.

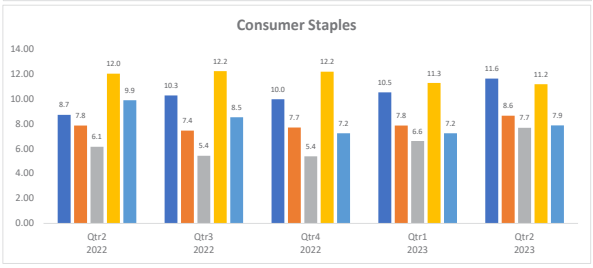
Just like in every industry, there are nuances that only needs to be recognised at the onset. Hence, it is important to recognize these nuances early on so that the necessary information can be gathered and the next steps could be taken to mitigate these issues accordingly.

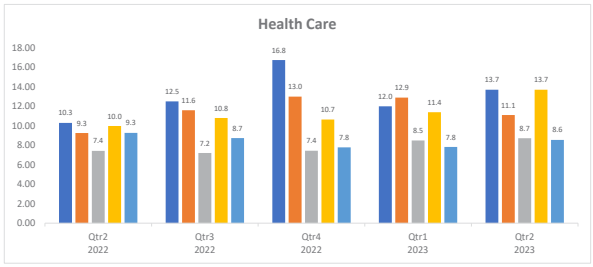
Market Data

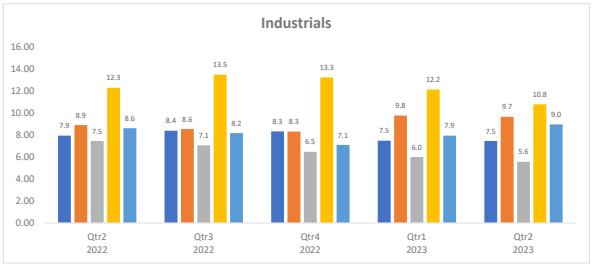
Median TEV/EBITDA multiples of certain industries in some ASEAN markets

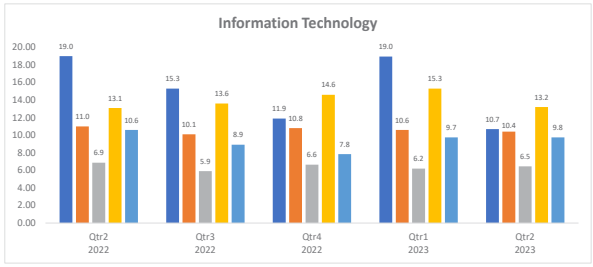


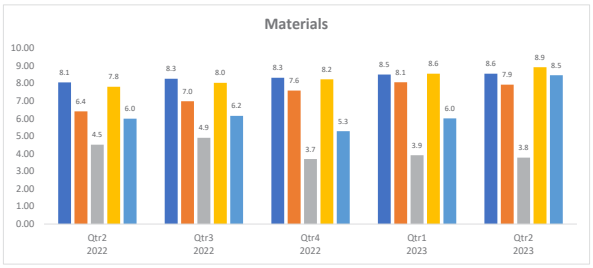


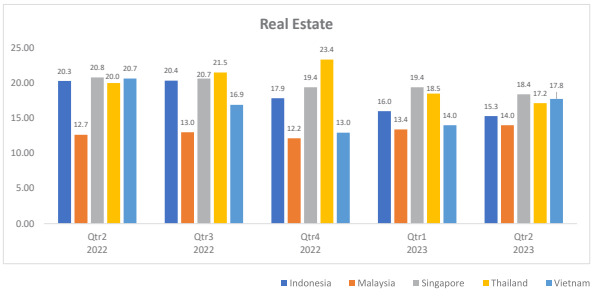












Source: Capital IQ – 6 July 2023

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.

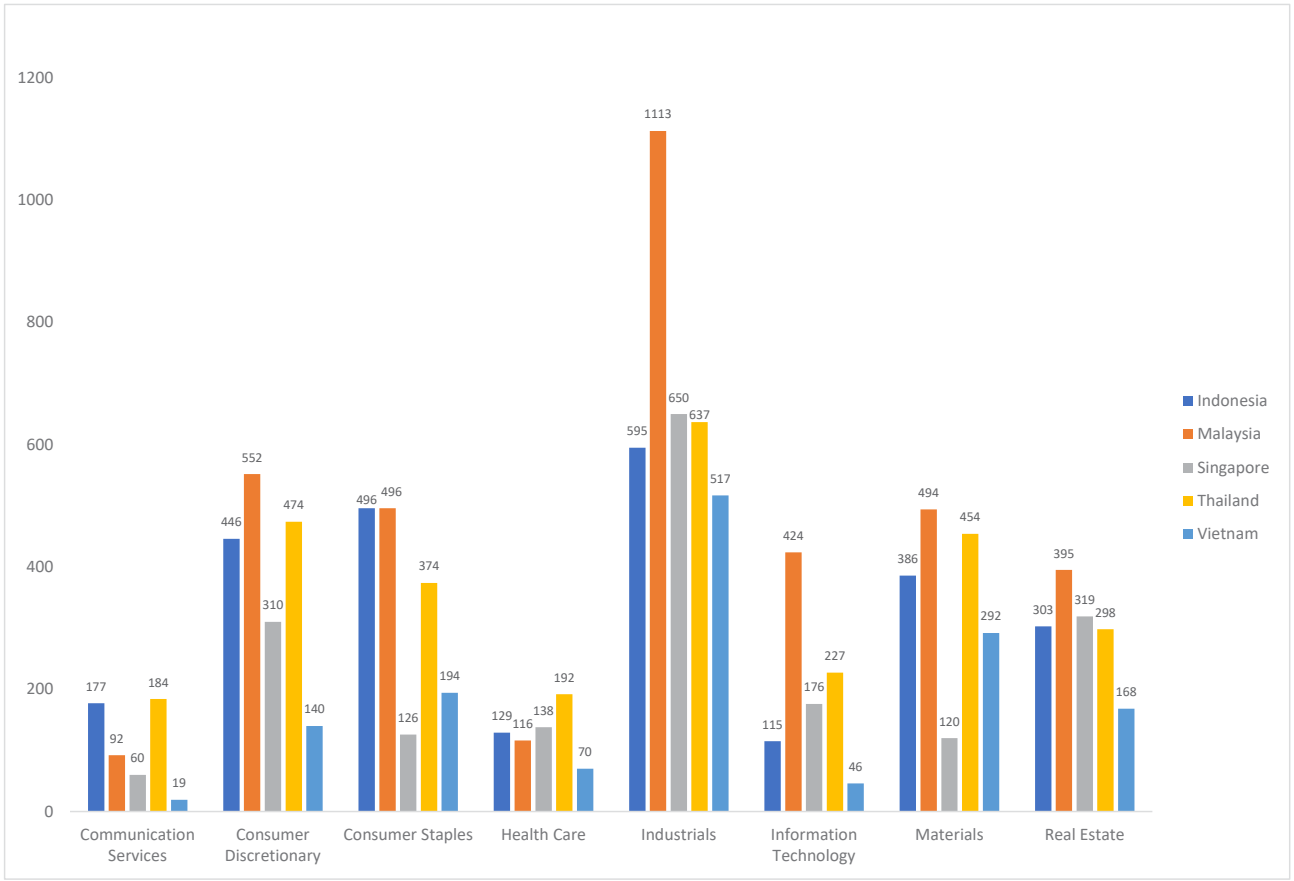
Market Highlights

- The International Valuation Standards Council (IVSC) has just launched a 3-month public consultation on the proposed changes to International Valuation Standards (IVS). The proposed changes take into account various factors, such as ongoing changes in global markets and valuation practices, increasing use of technology and data sources, growing demand for clarity in valuation processes, and the need to address new types of assets and liabilities, including environmental, social, and governance (ESG) factors. The consultation, commencing on 28 April 2023 and closing on Friday 28 July 2023, seeks feedback from a diverse range of stakeholders aimed at enhancing the clarity, usefulness, and overall effectiveness of the IVS in promoting consistency and confidence in global valuations. (Source: IVSC)
- The International Sustainability Standards Board (ISSB) has recently issued its inaugural standards of IFRS S1 and IFRS S2 which will create a common language for disclosing the effect of climate-related risks and opportunities on a company's prospects. IFRS S1 provides a set of disclosure requirements designed to enable companies to communicate to investors about the sustainability-related risks and opportunities they face over the short, medium, and long term. IFRS S2 sets out specific climate-related disclosures and is designed to be used with IFRS S1. Both fully incorporate the recommendations of the Task Force on Climate-related Financial Disclosures. (Source: IFRS Foundation)
- The Intellectual Property Office of Singapore (IPOS) is seeking a contractor to propose an outline for new intangible assets (IA) valuation guidelines, after identifying issues with existing valuation practices, according to tender documents on the government portal, Gebiz. The outline will facilitate drafting IA valuation guidelines which must, among other things, build upon standards from IVSC and be interoperable in various jurisdictions including Canada, the UK and the US. (Source: Business Times)
- Following some controversial IFA opinions in the past year, Singapore Exchange Regulation (SGX RegCo) has recently issued a new set of guidelines, setting out expectations for independent financial advisors (IFAs) and the opinions they provide in the context of SGX listings. It also provides guidance for directors who have to procure such advice from IFAs and make a recommendation to shareholders. The guidelines emphasise that the IFA must have a sufficient degree of independence from the issuer and the directors to ensure that the advice it gives will be objective and free of any undue influence. It is also highlighted, among other things, that the IFA must assess the relevance and recency of third-party expert opinion or valuation, and where comparable data is or is not taken into consideration for the purpose of recommendation, the basis for the selection should be clearly explained (Source: Business 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:



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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 specialised professional services to support businesses in their operations and decision-making processes.
Information Technology	The Information Technology industry consists of companies that specialise 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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