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## A CONCEPTUAL STUDY ON STARTUP VALUATION POST 2022 WINTER

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#### Abstract

The growth of startup industry in the last decade has been tremendous. However, in 2022, many public technology companies experienced decline in valuation. Many consider this situation "winter" as it is more challenging for startups to raise funding from investors. This research aims to study the impact of 2022 winter to privately funded startups valuation in Indonesia and what variables are impacting them. To conduct this research, various existing literatures including research papers, books, journals, and industry reports that are related to the research topics are gathered. The research was finally able to create a conceptual framework that explain variables which impact privately funded startup valuation, namely sectors, funding stages, relative market position, profitability, and founder contribution or power.

Keywords: Profitability, Sector, Startup, Startup Valuation, Startup Winter.

#### 1. Introduction

The startup industry has experienced tremendous growth at an unprecedented rate in the last decade. Despite the effect it brought to many sectors, Covid-19 has been accelerating digitalization, further increasing startup growth. One of the industries, e-commerce, was estimated to be \$26.7 trillion in size in 2020 (UN, 2021). Many startups grew tremendously during this phase. By the beginning of 2022, there were more than 1,000 unicorns globally (CB Insights, 2022), with a total valuation of more than \$3.3 trillion. Many of these startups also went public, including Meta, Alibaba, and Uber.

However, the global startup trend took a dramatic turn in 2022. Nasdaq Composite Index fell from 16,057 on November 19, 2021, to 10,652 on October 7, 2022, a 34% decrease. Many technology companies experienced a similar decline, including Meta (-65%), Amazon Inc. (-38%), Netflix Inc. (-67%), Alphabet Inc. (-38%), Uber (-54%), Snap Inc. (-87%), Alibaba (-54%), and Sea Ltd. (-84%). Meanwhile, in the private market, global venture funding also plummeted during the nine months of 2022. Many consider this situation "winter", including Masayoshi Son, founder, and chief executive of Softbank Group. In this situation, it is difficult for a startup to raise funding from investors.

This research aims to understand the impact of the 2022 winter on privately funded startup valuation in Indonesia. To address this, the author proposes the following research questions: (1) What is the impact of the 2022 winter on privately funded startup valuation in Indonesia? and (2) What are variables impacting privately funded startup valuation?

#### 2. Literature Review

#### A. Startup Funding and Valuation

A startup needs funding from investors because the presence of investors especially venture capital firms is related to faster startup growth (Gupta et al., 2000). Aside from investment money, good investors provide below support for their portfolios to grow: (1) Share experiences or learnings from investors' other portfolios. For example, global investors may

have invested in startup in the same industry but in a different geographic location. This similar company may provide valuable insight to the startup. (2) Help find teams or experts with skill sets that the startup needs. Since investors operate with many startups, investors understand the strengths of each portfolio and how those strengths can be shared with others. (3) Connect with other investors within their communities. Investors who operate in the early stages may refer the startups to growth-stage investors to whom the startup previously did not have access.

From the investor point of view, investing in startups provides high returns yet bears high risks. It is widely estimated that more than 90% of startups fail (Startup Genome, 2011). However, startups that succeed may provide enormous returns to their investors. For example, Sequoia Capital invested \$585,000 in AirBnB in 2009 to get 58 million shares, or about 1 cent per share (Dailyalts, 2020). In Oct 28, 2022, the same stock is valued at \$115.21. This means that Sequoia receives over 10,000 times the original investment. Therefore, investors need to assess the startup's valuation before investing in it to ensure that it can achieve the targeted return.

Usually, startup need to raise funding multiple times (Sukarno, 2022). There is no fix number of funding stages as startups can have different needs in terms of funding strategies. The 1st funding stage is sometimes called seed, the 2nd stage is called series A, the 3rd stage is called series B, the 4th stage is called series C, and so on. Asia Partners (2023) analyzed that the deal checks in Indonesia in Q4 2022 annualized is good for investors ("investor market") for \$20 million check and above, and not so good for below that, or in other words, for early stage.

To measure the valuation of a privately funded startup, investors need a different method than valuing a public company. This is due to limited financial information availability. Furthermore, many startups are not profitable yet. Therefore, conducting valuation using EBITDA or net income would not be applicable. To address this, several methods are invented, including Real Option Method (ROM), Venture Capital Model (VCM), First Chicago Method (FCM), Berkus Method, Scorecard Method, and Risk Factor Summation Method (Montani et al., 2020). However, the most popular method is the Comparable Transaction Method due to its simplicity and availability of the data.

For later stage startups including pre-IPO companies, Comparable Transaction Method is combined with Discounted Cash Flow (DCF) analysis as by that time, the company's financial information is already available. This combined method is also what Morgan Stanley did with Indonesian public technology firm PT Global Digital Niaga or Blibli (BELI.JK) when analyzing their share price, Credit Suisse with Bukalapak (BUKA.JK), and Macquarie with GoTo (GOTO.JK).

There are three steps involved when conducting a valuation of a startup using the Comparable Transaction Method below: (1) Determine the KPI being measured to compare with other comparable companies. In pre-revenue e-commerce startups, investors use GMV (Gross Merchandise Value), while in post-revenue, investors use revenue. (2) Conduct research on comparable companies, especially their KPI and valuation to find their multiples. If a company has revenue of \$4 million and its valuation is \$10 million, then its multiple of revenue is 2.5. (3) Apply the range of multiples from other comparable companies are between 2 and 4, it can be estimated that the valuation is between \$4-8 million with an average of \$6 million.

Determining the startup's valuation is crucial not only for the investor but also for the startup owner or founder. Hamidlal and Harymawan (2020) found that ownership power has a positive relationship with firm value for Indonesian listed non-financial companies. If the startup's valuation is too low, then the startup owner will need to sacrifice large portion of the company which may impact the firm value above. Therefore, knowing the valuation

method, including the assumptions such as other comparable companies' multiples, is essential for both parties.

#### **B.** Optimal Risky Portfolios

From Bodie et. al., 2009, investors always try to maximize their portfolio by combining risk-free asset with risky portfolio lies in the Markowitz efficient frontier. As a result, investors will put their portfolios in A that is in the CAL (Capital Allocation Line) as seen in the Figure 1.



Figure 1 Capital Allocation Line Source: Bodie et. al., 2009

The exact position of A will depend on investors' risk profile. The more risk averse the investor is, the position of A will be closer to Rf. The most risk averse investor will put the portfolio at Rf, a position where the investor portfolio consists of 100% of risk-free asset and 0% of risky portfolio. On the other hand, the more risk seeking the investor is, the position of A will be closer to M, a position where CAL meets the Markowitz efficient frontier, or where the investor portfolio consists of 100% of risk-free asset.

The increase of interest rate as happens in 2022 means that expected return of risk-free asset increases. As a result, a position where CAL meets the Markowitz efficient frontier also changes as seen in the Figure 2. In this case, the return of risk-free asset increases from Rf1 to Rf2. As a result, the new capital allocation line, CAL2, meets the Markowitz efficient frontier in a new position M2. This is a position with a higher expected return and risk than M1 in the previous capital allocation line CAL1.



Figure 2 Capital Allocation Line when Risk-free Asset Return Increases Source: Author Analysis

Consider an investor with risk profile S. Using the previous situation, where the interest rate has not increased, the investor portfolio will be A1. On the other hand, using the current situation, the investor portfolio will be A2. The relative position of A1 to M1 and Rf1 is lower than A2 to M2 and Rf2. It means that the composition of risky portfolio in A2 will be lower

than in A1. In other words, some portion of the risky portfolio will be moved to risk-free asset. This movement from risky portfolio to risk-free asset drives the price of the risky portfolio down, including the price of assets in technology sector.

The case of assets price decline happened few times in the past, including when companies' multiples decreased dramatically during the technology bubble in 1999. In one study conducted by Gavious and Schwartz (2010) involving 40 global publicly listed technology companies, their mean EV/sales ratio decreased from 38.32 in 1999 to 4.28 in 2000 (-89%). In this situation, although the mean sales of the companies increased from \$55 million in 1999 to \$72 million in 2000 or about 31% increase, their mean valuation decreased from \$2,991 million to \$579 million in the same period or decrease by about 81%. The EV/sales ratio further decreased again to 3.43 in 2001 and 2.96 in 2002 before increased again to 17.6 in 2003 and 30.8 in 2004.

## C. Country and Sector Analysis

The unprecedented growth of the startup industry is also happening in Indonesia. In September 2022, President Joko Widodo estimated that there are 2,345 startups in Indonesia. In the last two years, Indonesia digital economy grew from \$40 billion in 2019 to \$70 billion in 2021 (Bain et. al., 2021). Furthermore, it is estimated that it will continue to grow to \$330 billion in 2030. The breakdown of the Indonesian startup industry can be seen in Figure 3 (BCG, 2022). The most significant sectors include retail/e-commerce, fintech, agriculture and fisheries, media and entertainment, healthcare, transport, logistics, education, digital ads, and hospitality.



Figure 3 Indonesia Startup Industry Projection Source: BCG, 2022

# 1. Retail/e-commerce sector

Retail/e-commerce sector is the largest sector in Indonesia startup industry. Its value is estimated to be \$43 billion in 2022 and projected to grow to \$75 billion in 2027 or about 11.5% CAGR. The main driver for this growth is the needs of MSME, the main pillar which contributes to over 60% of Indonesian GDP, to go digital. Many biggest companies in this sector play in B2C marketplace category include Tokopedia, Bukalapak, Shopee, and Blibli. In the last few years, many other categories also started to appear, including B2B marketplace (for example, PadiUMKM, Ralali, and MBiz) and social commerce.

## 2. Fintech (financial services and insurance) sector

While currently fintech (financial services and insurance) sector lacks behind some sectors, it will be the second largest sector in Indonesia startup industry in 2027. Its value is estimated to be \$4 billion in 2022 and projected to grow to \$16 billion in 2027 or about 32% CAGR. The key driver for this growth is the nation's move towards financial inclusion. Some of the categories in this sector include digital wallet (GoPay, Dana, and OVO), P2P (Modalku, Investree), Investment (Bareksa, Ajaib), paylater (Kredivo), insurtech (PasarPolis, Futuready), remittance, multifinance, and crowdfunding.

# 3. Agriculture sector

Agriculture is the second largest sector in Indonesia startup industry in 2022 with \$7 billion in size and projected to grow to \$14 billion in 2027 or about 15% CAGR. The growth driver of this sector is its large economic contribution to the country. Based on BPS, agriculture

contributes about \$145 billion to Indonesian GDP. There are many categories within the sector, including farm input, farm production, intermediaries, channel to customers, and enablers. Some of the players in the sector include Tanihub, Agriaku, and Elevarm.

# 4. Healthcare sector

While currently healthcare sector is not significant yet, it will be quite sizable in 2027. Its value is estimated to be \$2 billion in 2022 and projected to grow to \$8 billion in 2027 or about 28% CAGR, making it the second fastest growing sector after fintech. Covid-19 pandemic is the main growth driver of this sector as this increases health consciousness and spending. Some of the categories in the sector include health monitoring (NalaGenetics, TeleCTG), wellbeing management (Fita, Doogether), teleconsultation (Halodoc, Alodokter), online medicine (mClinica, Lifepack), insurance management (Qoala, Lifepal), and digital health records (Trustmedis, Medico).

# 5. Logistics sector

Logistics sector is estimated to be \$4 billion in 2022 and projected to grow to \$7 billion in 2027 or about 12% CAGR. Logistics sector grows fast as it is one of the key pillars in ecommerce. When e-commerce sector grows, logistics sector grows as well. The government also kickstarted National Logistics Ecosystem to increase the quality of Indonesian logistics sector. Some of the categories in the sector include 3PL (JNE, Sicepat), e-logistics and 4PL (Ritase, Shipper), enablers (Sirclo, Powercommerce), and storage (PopBox, Gudangada).

# 6. Education sector

Education sector is estimated to be \$2 billion in 2022 and projected to grow to \$6 billion in 2027 or about 24% CAGR. One of the growth drivers of this sector is Covid-19 pandemic as many education activities switched to online. There are many categories in the sector including K-12 (Ruangguru, Zenius), vocational training (Harukaedu, Vokraf), language (Bahaso, Cakap), higher ed (IndonesiaX, goKampus), education finance (Danadidik, Danacita), school administration (Kelase, Gredu), and learning management systems (Scola, Codemi).

Hidayat, et. al. (2020) founded that among others, sectoral differences influence startup equity valuation during the period of 2008-2018. At that time, market valued automotive, real estate services, information services (B2C) biotechnology, and social platform software at a premium, meanwhile the market valued clothing, accounting, auditing, and tax services (B2B), and legal services (B2C) at discount.

The symptom of winter in the startup industry is also starting to be seen in Indonesia. Two of Indonesia's leading technology companies, Bukalapak and GoTo, which went public, saw the performance of their shares decline. On December 16, 2022, Bukalapak's share price, 268, was a 68% decrease compared to its IPO price of 850 when it went public in August 2021. Meanwhile, GoTo experienced a 72% decrease from 338 to 96, a sharp decrease compared to when it went public in April 2022. While the funding amount still increases compared to last year, specifically \$2.7 billion in the first half of 2022 compared to \$1.3 billion in the first half of 2021, many considers that it is difficult to raise funding (Bestari, 2023). Many investors question the ability of startups to achieve profitability or sustainability. In addition, Valliji (2022) mentioned that previously technology companies who did not have profit could have high valuation but because of the winter, the era is gone and therefore, technology companies need to show profitability to justify valuation.

Experts also echo the difficulty in raising funding. CEO of leading Indonesian security firm mentioned that investors would most likely discount the valuation if the startup does not have convincing strategy to achieve profitability. Bima Laga, chairman of Indonesia E-Commerce Association (idEA) mentioned that while profitable e-commerce is doing fine, unprofitable one has homework to reduce the cost to be able to raise funding from investor.

#### **D. SWOT Analysis**

SWOT analysis is a popular management strategy to evaluate the company's four aspects, namely Strengths (S), Weaknesses (W), Opportunities (O), and Threats (T) (Claessens, 2015). It is used to assess company's relative market position against its competitors. Strengths are things the company is good at doing relative to its peers or enhances its competitiveness in the market. Weaknesses are things the company is poor at doing relative to others or put the company at a disadvantage. Opportunities are external situations that provide favorable conditions for the company's profitability and well-being. There are four management strategies based on what happens in internal and external situations, as seen in the diagram in Figure 4. Buzzell et al (1975) found that market share and return on investment are strongly related, meaning that company that displays strengths may provide good ROI and vice versa.

Internal External	Strengths	Weaknesses
Opportunities	Offensive strategy	Defensive strategy
Threats	Adjustment strategy	Survival strategy

Figure 4 Four Strategies based on SWOT Analysis Source: Claessens, 2015

## 3. Research Methodology

The research is started by identifying the issues and proposing research questions and objectives. Thereafter, the author reviews previous literatures to explain terms and contexts used in the research. Various existing literatures including research papers, books, academic journals, industry reports, analyst reports, and experts opinion that are related to the research topics are gathered. The aim of the literature reviews is to understand theories, implications, and also findings from previous relevant studies. The result of the reviews will be further analyzed in order to synthesize proposed solutions. In the end, the paper will also draw conclusion and recommendation including further research that can be developed upon this research. This can be seen in Figure 5 below.



## 4. Results And Discussion

## A. Results

Based on the literature reviews, the author conclude that 2022 winter also happens in Indonesia. Indonesian startups consider this time to be more difficult to raise funding. They also experience valuation decline. Meanwhile, investors will ask more metrics from startups before deciding to invest, including profitability or path to profitability.

Based on the literature reviews, the author identifies five variables that have influence to startup valuation below.

1. Sector

Certain sectors are less impacted by winter than other sectors. Sectors that are accelerated because of Covid 19 pandemic such as healthcare will be less impacted and therefore, the valuation multiple of startups in this sector will be better relative to other sectors.

2. Funding stages

Earlier stages are less impacted than later stages as in the current situation, investors are more cautious when investing in large amount. Therefore, the valuation multiple of startups will be lower as the startups move into later stage funding.

3. Relative market position

The stronger market position the startup has, the more likely it is impacted by winter. This is because the investor will consider this startup to have a strong position to generate profitability. In summary, market position has a positive influence to startup valuation.

4. Profitability

Profitable startups are less impacted than unprofitable ones as this is the area focused by the investors. If the startups are not yet profitable, they will ask how long the startups can achieve profitability. In the other words, profitability has a positive influence to startup valuation.

5. Founder contribution/power



The framework can be seen in Figure 6 below. In summary, the startup valuation is impacted by the five variables above. The author proposes this to be researched in more details through quantitative or qualitative methodology for additional explanatory information.



Figure 6 Conceptual Framework Source: Author Analysis

#### **B.** Proposed Solutions

Here the author proposes business solutions with regards to each variable based on the analysis result.

Table 1 Proposed Solutions

Variable	Proposed Solutions	
Sector	Identify sectors whose valuations are less impacted and consider pivoting/expanding into those sectors.	
Funding stages	For early stages, continue raising fund from potential investors as usual, but for later stages, be aware in other variables analyzed here before discussing with potential investors.	
Relative market position	Build strengths by gaining market share as if the market share increases, startups have better chance to increase profitability.	
Profitability	Immediately create a business/revenue model (if not yet) and achieve profitability or path to profitability.	
Founder contribution/ power	Manage shareholder dilution carefully and not give equity too much to investors or other parties.	

Source: Author Analysis

#### 5. Conclusion and Recommendation

Based on this research, winter situation also happens in Indonesia as it is more difficult to raise funding for startups. They also experience valuation decline. In terms of variables influencing startups valuation, there are five variables identified, namely sector, funding stages, relative market position, profitability, and founder contribution/power. Startup founders need to be aware and analyze each of these variables before raise funding from the investors.

Through this conceptual study, future researchers can test and measure through quantitative or qualitative methodology for additional explanatory information. For the quantitative methodology, future researchers can conduct surveys to owners/founders/cofounders of startups from various sectors in Indonesia. Meanwhile, for the qualitative methodology, future researchers can interview related startup stakeholders, including startup founders, venture capital firms, media firms related with technology or startup, security firms, associations related with startup industry, and government officials.

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