



Print ISSN: 1738-3110 / Online ISSN 2093-7717
 JDS website: <http://www.jds.or.kr/>
<http://dx.doi.org/10.15722/jds.21.04.202304.91>

A Case Study of Valuation Considering the Characteristics of E-Commerce Distribution: Focusing on the Coupang IPO*

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Received: July 21, 2022. Revised: September 14, 2022. Accepted: April 05, 2023.

Abstract

Purpose: Research on the valuation of the e-commerce distribution companies is necessary because the traditional valuation methodology cannot be easily applied. Considering the valuation and initial public offering (IPO) of Coupang, Korea's leading e-commerce company, this study contributes to the literature by examining various valuation methods applicable to corporate valuation in the e-commerce industry and provides their implications. **Research design, data and methodology:** This case study investigates research, analyst reports, news articles, and magazines to review the valuation methods for companies in the e-commerce industry and analyzes the case of the Coupang IPO. **Results:** A valuation method that considers growth potential, which is important for companies in the e-commerce industry, is used for IPOs. This led to Coupang's successful IPO on the New York Stock Exchange despite its accumulated losses. However, the continued price decline since listing suggests that Coupang's valuation should have considered more factors. **Conclusions:** This study provides guidelines for the valuation of companies in the e-commerce industry, which eventually improves the overall industry. Moreover, this study provides directions for improving the valuation methods for e-commerce firms.

Keywords: IPO, Valuation Method, E-Commerce Industry, E-Commerce Distribution, Coupang

JEL Classification Code: M20, M16, M10

1. Introduction

The recent developments in information and communication technology have wrought a significant change in the distribution industry, rapidly moving its central theme to the e-commerce market based on the Internet and mobile technology (Kim, 2021). Consequently, the Korean e-commerce market has experienced remarkable growth in sales and its size. However, most e-commerce firms do not make profits because they invest substantial

capital in inventory management and logistics systems to obtain market share and dominate the market. Although firms in the e-commerce industry are growing rapidly and show high sales levels, it is difficult to apply existing valuation methods used in initial public offerings (IPOs) and mergers and acquisitions (M&As) because most e-commerce firms operate under losses. Existing valuation methods, such as DCF (discounted cash flow method), EV/EBITDA (corporate value/operating profit before amortization) multiple, and PER (Price-to-earnings ratio)

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multiple, would show a low corporate value for firms with operating losses. Thus, they cannot appropriately evaluate the value of e-commerce firms because growth potential and market dominance are more important to value firms in the e-commerce industry. Considering the rapid growth of the e-commerce industry, this study reviews the changes in valuation methods and analyzes the factors of corporate valuation by examining the case of Coupang, an e-commerce company that has recently been listed on the New York Stock Exchange (NYSE) in the United States.

Coupang was listed on the NYSE in March 2021 as it was highly valued for its growth potential despite its accumulated losses. Coupang's IPO price has been revised upward twice, showing that the relative valuation method using sales and transaction amounts has been applied instead of the traditional corporate valuation methods for its valuation. Given that Coupang has high growth potential, sales and transaction amounts, which are important indicators of market dominance for e-commerce companies, may be more appropriate factors than operating profits in its valuation. However, to apply sales and transaction amounts to valuation methods, target performance periods and comparable firms are selected. The continuous drop in Coupang's stock prices after the IPO suggests that Coupang's valuation should have been conducted more carefully.

This study examines the valuation in the e-commerce industry by investigating the U.S. listing case of Coupang, a leading e-commerce company in Korea. It contributes to the literature by examining various corporate valuation methods applicable to the e-commerce industry that have not been investigated before. It also provides implications for the valuation methods of e-commerce companies. The remainder of this paper is organized as follows. Section 2 investigates the characteristics, market structure, and business expansion strategies of e-commerce. Section 3 examines the valuation of the e-commerce industry. Section 4 analyzes Coupang's IPO on the NYSE from the perspective of valuation, and Section 5 concludes the study.

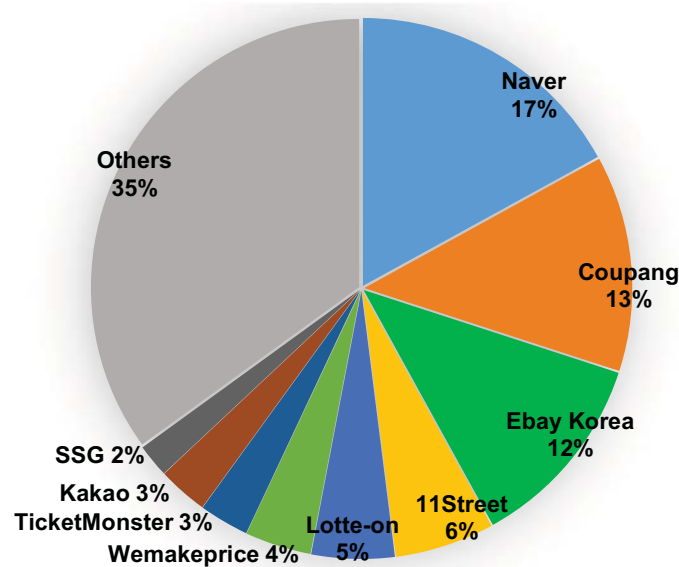
2. Characteristics and Business Strategies of Korean E-Commerce Companies

2.1. Market Structure of the Korean E-Commerce Distribution

As transactions take place in virtual spaces, E-commerce has established a new market by expanding business areas that were previously restricted in traditional commerce. E-

commerce has become a central market in the current business environment and has drawn the attention of firms, consumers, and various stakeholders in the distribution industry because it introduces new markets and methods to purchase and sell products (Lee, 2016). With the rapid growth in the popularity of e-commerce, the basic and common consumer mindset of "visiting a store to purchase products" has changed to "purchasing products without visiting the store." Moreover, compared with traditional distribution channels, e-commerce provides convenience and efficiency to customers by saving time and costs and improving interactivity and accessibility (Kim et al., 2022). Since the COVID-19 pandemic in 2020, online consumption and the number of players in e-commerce distribution have dramatically increased, accelerating the transformation of the distribution market (Ruanguattamanun & Peemanee, 2022). According to Statistics Korea (KOSTAT), Korea's online shopping transactions amounted to KRW 161.12 trillion in 2020, an increase of 19.1% compared with 2019, which is more than four times the amount of KRW 38.5 trillion in 2013. Experts predict that the Korean e-commerce market is currently the fifth largest in the world and will become the fourth largest in the world by 2023 (Korea Chamber of Commerce and Industry, 2022). These changes were caused by the dramatic development of mobile technologies and the increase in direct purchases and sales. As the Korean e-commerce industry proliferates, firms within the industry compete severely to secure customers and obtain market share. Figure 1 shows Korea's e-commerce market share based on the total transaction amounts in 2020.

In 2020, the annual transaction amounts for the top 3 e-commerce companies, Naver, Coupang, and eBay Korea¹⁾, were KRW 30 trillion, KRW 22 trillion, and KRW 20 trillion, respectively. The market structure of the Korean e-commerce industry is significantly different from that of the U.S. market, where Amazon, the leading e-commerce company, occupies the largest share of 40% of the U.S. market, followed by Walmart, which accounts for 7% of the U.S. market share. Compared to the U.S. e-commerce industry, there is no clear number one player in the Korean e-commerce industry, driving firms to operate at a loss. Despite accumulated losses from severe competition in the market, Korean e-commerce companies are continuously investing substantial amounts to obtain loyal customers and market share because the future growth potential and long-term performance are determined by market share in the e-commerce industry (Kyobo Securities Research Center, 2021).



Source : <https://m.money5.mt.co.kr>

Figure 1: Market share of Korean E-Commerce (Based on transaction amounts in 2020)

2.2. Direct Purchase and Open Market Expansion Strategy

There are two main types of business expansion methods for companies in e-commerce distribution. The first is the direct purchase expansion strategy. Direct purchase method forecasts sales volume using big data, purchasing inventories in advance, and selling inventories when transactions occur (Chen et al., 2008; Hines et al., 1998). Direct purchases are also called first party (1p) commerce. The second is an open market expansion strategy. An open market is a form of the online shopping mall, where anyone can become a seller by registering their products on an open market platform (Park & Allui, 2019). Companies connect sellers and buyers through their platforms (open markets) and generate revenue by receiving commissions from sellers (Kim, 2014; Eisape, 2019). The open market is also known as third-party (3p) commerce. Consumers compare goods and services sold through 1p and 3p in the same way, but the methods differ significantly in terms of the revenue model and operational structure. Thus, firms need to set appropriate strategies suitable for their business models.

Under the direct purchase method (1p), companies purchase products directly, store them in the warehouse, and sell them. Thus, investment and risk management in inventory and logistics systems are essential for the 1p expansion strategy. The 1p expansion strategy requires a substantial amount of capital for investing in inventory and logistics systems but once invested and developed, the

profitability of a firm increases rapidly after it obtains market share over a certain level. In 1p commerce, gross merchandise value (GMV) becomes a company's sales. GMV is the sum of the number of traded products multiplied by the unit price. If a company sells 1,000 products at a unit price of USD 100 under direct purchase (1p) commerce, the company's GMV is USD 100,000. In the case of 1p commerce, the entire transaction amount of a firm's services and products sold are recognized as sales. However, in 1p commerce, the firm undertakes risks related to inventory and logistics; thus, it should carefully evaluate inventory-related risks and consider its current logistics status and future investment capabilities.

The open market (3p) serves only as a platform that provides a marketplace for individual sellers. The open market (3p) expansion strategy requires a relatively small investment and can easily increase the total transaction amount and gain market share. However, it is difficult to sharply improve profitability through the open market expansion strategy because sellers are sensitive to its commission rates, creating challenges for companies to adjust commission rates. In 3p commerce, companies receive commissions based on the total transaction amounts, identifying them as sales. If 1,000 products of USD 100 are sold, the GMV is USD 100,000, but in 3p commerce, as \$100,000 is the sales of the inventory owned by sellers in the open market platform, the sales of the company are the commissions received from sellers. For example, if the commission rate is 7%, the company's sales are USD 7,000, considering USD 100,000 sales. Collectively, inventory-

and logistics-related risks are low for open market commerce, but generating large revenues is difficult because companies receive commissions based on the total transaction amount. Therefore, companies should continuously invest in fulfillment services to improve their financial performance.

Most domestic e-commerce companies are 3p companies. 3p firms, such as Naver, SSG, and 11Street, expand their businesses by providing a variety of products and services that are difficult to find in firms applying 1p methods. However, 1p companies, such as Coupang and Market Kurly, are becoming popular, and 3p firms have increased the proportion of direct purchases. Companies focusing on 1p commerce strive to attract customers and expand their market share by quickly delivering products through their logistics systems.

3. Valuation of E-Commerce Companies Through Relative Valuation Methods

3.1. Valuation of Existing Distribution Companies: Absolute Valuation and Relative Valuation Models

The corporate valuation methods commonly used for IPOs or M&As are classified into absolute valuation (intrinsic valuation) and relative valuation. The absolute valuation model evaluates a company's value independently without considering other comparable companies, and the relative valuation model evaluates a company's value based on the value of a comparable company.

Among the absolute valuation models, the asset valuation method determines corporate value by evaluating the assets based on liquidation value, book value, or market value, depending on the most suitable for evaluation. Objective valuation can be performed using absolute asset valuation methods. However, absolute asset valuation methods do not sufficiently reflect future value. Thus, these methods are not commonly used in M&As. The income approach evaluates the present value of a firm at a discount rate by considering the future value of a company. Discounted Cash Flow (DCF), one of the most popular income approaches for valuation, helps estimate and discount the cash flows generated in the future. DCF analysis attempts to measure the value of a company based on the forecast of a firm's future cash flow. DCF is a forward-looking method that considers a firm's future cash flow. However, DCF involves discretions and assumptions that reduce reliability and increase the uncertainty of corporate value. The mixed approach of valuation uses the income approach and asset valuation models. It uses the weighted average of the asset and income approach valuations and is only used when approval from the financial authorities is required, such as in the event of a

corporate merger.

Investors widely use relative valuation methods in practice. The relative valuation model compares a firm's value to that of a comparable company or its competitors by using multiples to determine the firm's value and financial worth. The relative valuation method includes the following steps: 1) selecting comparable companies or competitors, 2) selecting the most suitable valuation model and multiples, 3) calculating the performance and multiples of comparable companies or competitors, and 4) estimating the enterprise value of the target company based on the company's multiples or fundamental value.

Among the relative valuation models, price multiples are the ratios of a target company's share price to a specific key indicator or measure of the fundamental value per share with comparable companies. To determine the value of a company, price multiples are compared with those of comparable companies or competitors. PER is used to value a company that measures its share price relative to its earnings per share. For example, the PER of 3 indicates that the share price is 3 times the earnings per share, which means that 3 times the company's net income is the market value of the company's net assets (Market cap = share price × number of outstanding shares). The price-to-sales ratio (PSR), calculated by dividing a company's market capitalization by its sales, is used to determine the company's share price by comparing sales with a comparable company. The price-to-book ratio (PBR) determines a company's value by comparing the book value of assets with that of a comparable company. The PBR compares a company's market value to its book value. The book value of net assets multiplied by PBR is the market value of net assets (Fernandez, 2001).

EV multiples are methods of measuring the value of a company by comparing the enterprise value (market cap + net debt²⁾), rather than the share price, with profit factors. EV/EBITDA is measured by dividing the EV by EBITDA. EBITDA presents the cash flow from the operation, which is calculated by adding depreciation and amortization to operating income. EV/EBITDA shows a company's value compared to the cash it currently generates, providing acquirers with information on the time period required to recover the acquisition price. For example, EV/EBITDA of 5.0 shows that acquirers paid 5 times the company's yearly revenue. In other words, the acquirer can recover the acquisition price within five years, and the higher the EV/EBITDA, the longer the acquirers recover their acquisition price. EV/EBIT is measured by dividing EV by operating profit (earnings before interest and taxes). The relative valuation method is widely used because it is intuitive, simple, and more applicable in practice. However, the relative valuation method has limitations. As corporate value varies depending on the selection of a comparable company, it is not an appropriate method for young or new

types of firms. Finding appropriate competitors or comparable companies is challenging for young or new firms. Moreover, relative valuation methods do not reflect the future growth potential of firms that generate low revenues or are in the early stages of the business cycle (Samjong KPMG ERI, 2021). Table 1 shows the valuation methods used by Korean listed firms over the past decade to evaluate the corporate value of the retail industry.

Table 1: Valuation Methods Used for IPOs by Retail and Logistics Firms

Name	Listed date	Valuation method
Lotte Shopping	2006/02/09	PER, EV/EBITDA, PBR, PSR
Lotte Himart	2011/06/29	PER, EV/EBITDA
Shinsegae International	2011/07/14	PER
GS Retail	2011/12/23	PER, EV/EBITDA, PBR
NS Shopping	2015/03/27	PER

Source: DART Data Analysis, Retrieval and Transfer System) of Financial Supervisory Service

3.2. Valuation of E-Commerce Company

Applying absolute or relative valuation methods to e-commerce companies is difficult and challenging. Although the transaction amounts and the number of users of e-commerce companies are increasing, they continue to make losses due to severe competition. Measuring the value of e-commerce companies using traditional valuation methods is difficult and inappropriate because market share is a more important evaluation factor for e-commerce companies. As long as enough customers are secured, e-commerce companies' going concerns are guaranteed because a large group of customers allows firms to expand their business and generate revenue. This implies that measuring the true value of e-commerce companies based on operating profit is difficult because, depending on market share, the future growth potential of e-commerce companies can be greater than the corporate value measured based on operating profits (Kyobo Securities Research Center, 2022).

Therefore, enterprise value-to-gross merchandise value (EV/GMV), enterprise value-to-sales (EV/sales), price-to-gross merchandise value (P/GMV), and price-to-sales (P/sales) are commonly used to measure the value of e-commerce companies. The GMV refers to the total number of transactions. 3p commerce companies generate revenue from commission fees. Thus, sales can be calculated by multiplying GMV by the commission rate. EV/GMV is measured by dividing the EV, which is the sum of net debt and market capitalization, by GMV, a valuation method that compares a company's EV to its annual sales. P/GMV and P/sales use market capitalization (price $\times$ number of shares) as a numerator instead of GMV. They are more intuitive and

straightforward than EV/GMV because the proportion of net debt in corporate value for e-commerce is low.

For e-commerce companies that grow rapidly but generate losses, sales are a more accurate proxy than GMV for evaluating profits. Sales accurately indicate a firm's performance, as calculated by measuring a firm's portion of total transaction amounts. However, there may be differences in the take rate, which is the ratio of sales to GMV, depending on the accounting method used to recognize sales and the company's commission rate. Thus, the GMV is also meaningful. GMV, which shows an increase in customers, can be a reasonable indicator because an important characteristic for platform businesses is obtaining loyal customers to expand the business. However, the GMV valuation should be applied to companies with similar sales to calculate accurate enterprise value because the take rate differs by company. Moreover, rather than simply measuring GMV, determinants that increase GMV, such as order frequency, volume, average selling price (ASP), and commissions, should be considered when the GMV has improved.

4. Case of E-Commerce Valuation for IPOs

4.1. Background

Coupang, established in 2010, is one of Korea's most popular e-commerce companies. Coupang LLC, the U.S. listed firm (Coupang INC after IPO), holds a 100% stake in Coupang. Coupang introduced a one-day delivery service called Rocket for the first time in Korea and has achieved remarkable growth every year through a differentiated delivery system. Large-scale venture capital (VC) investments helped the company grow. Coupang chose to go public to cope with the continuous losses and provide additional investment capacity, as the accumulated losses exceeded the investment³⁾. Some predicted that Coupang would be successfully listed on the U.S. stock market in recognition of its growth potential despite accumulated losses, as other loss-making e-commerce companies, such as Amazon, were also successfully listed on the U.S. stock market. Others argued that Coupang's IPO in the U.S. stock market would not be successful because of its lack of market share and accumulated losses (Eugene Investment and Securities, 2020).

Coupang formalized its listing on the NYSE, despite concerns, by submitting the General form for registration of securities (S-1) to the U.S. Securities and Exchange Commission (SEC) on February 12, 2021. On March 1, 2021, Coupang submitted a revised notification form (S-1/A) reflecting the desired public offering price band. The desired price band was \$27-30 per share. In the end, Coupang went

public by issuing shares of 130 million shares (Class A ordinary shares), which is more than the initially planned 120 million shares at an offering price of \$35. Through a successful IPO, Coupang raised USD 4.55 billion (approximately KRW 5,170 billion) of capital. Based on the IPO price, the market capitalization was approximately USD 60 billion (approximately KRW 68 trillion) and the company value was approximately USD 63 billion (approximately KRW 72 trillion). The overview of Coupang's IPO is presented in Table 2.

Table 2: Overview of Coupang's IPO on the NYSE

Finalized public offering price	\$35
Revised desired price (March 9)	\$32–34
Initial desired price (March 1)	\$27–30
Number of shares issued (Class A ordinary shares)	130 million shares (New shares 100 million, existing shares 30 million)
Date of IPO	March 11, 2021
Major EDGAR filings by Coupang during the IPO process	[S-1] General form for registration of securities (February 12, 2021)
	[S-1/A] General form for registration of securities – amendment (March 1, 2021)
	[S-1/A] General form for registration of securities – amendment (March 9, 2021)
	[S-1MEF] Registration adding securities to prior Form S-1 registration [Rule 462(b)] (March 10, 2021)
	[424B4] Prospectus [Rule 424(b)(4)] (March 11, 2021)
Raised capital	USD 4.55 billion (KRW 5,170 billion)
Market capitalization based on the offer price	USD 60 billion (KRW 68 trillion)
Underwriter	Goldman Sachs
Underwriter Commission	USD 95,550,000

Source: Electronic Data Gathering, Analysis, and Retrieval system (EDGAR) filings of SEC (Securities and Exchange Commission)

Coupang laid the foundation for further expansion by actively investing capital secured through IPO in logistics and distribution systems. This study examines the valuation of e-commerce companies in depth by analyzing the listing cases of Coupang.

4.2. Determining the Offer Price of Coupang

4.2.1. Estimating the IPO Price of the E-Commerce Distribution

The IPO price is important as it determines the firm's initial market value. However, for companies such as Coupang, which accumulate operating losses or generate small profits, applying traditional valuation methods, such as

PER and EV/EBITDA, is inappropriate because they do not reflect the value of a company's high market share and sales growth, distorting its value. Therefore, valuation methods such as EV/sales, EV/GMV, and P/GMV should be applied to the valuation of e-commerce companies because they reflect the value of market share and growth potential on the IPO price. For example, suppose e-commerce company B, which is already listed on the stock market, is selected as a comparable company for the IPO of e-commerce company A. Because B is a listed company, it is easy to measure the market capitalization and total transaction amounts; thus, B's P/GMV multiple can be calculated directly. Suppose that the P/GMV multiple for company B is 2.2. This indicates that company B's market capitalization is 2.2 times that of company B's GMV. Accurately measuring company A's corporate value or market capitalization is difficult because it is not a listed firm. However, the GMV of company A can be calculated by multiplying the number of transactions by the transaction unit price. Therefore, by multiplying company A's GMV by the P/GMV of company B, 2.2, the market capitalization of company A can be calculated. Moreover, the IPO price of A can be calculated by dividing market capitalization by the number of shares. This example shows that the valuation method using GMV can be applied to e-commerce companies, as it reflects the firm's potential growth, despite the considerable criticism that such valuation methods may overestimate the company's value.

4.2.2. Coupang's Financial Performance and Position

In 2021, Coupang's total transaction amount reached KRW 37.8 trillion (USD 33 billion), an increase of 71% compared to that in 2020 (KRW 22 trillion, USD 18.7 billion). Their market share was 19.6% in 2020, an increase of 5.8% year on year (YoY). Coupang is one of the most popular 1p commerce companies that provides a one-day delivery service, Rocket delivery, but the proportion of 3p transactions increased significantly in 2021 based on the development and growth of the fulfillment system called Jet delivery. In 2021, the 3p transaction volume was estimated to be KRW 19 trillion, an increase of 108% YoY. The transaction volume growth rate is higher than the annual sales growth rate (49% YoY) because the proportion of 3p transactions, which recognize only commission fees as sales, has increased significantly from 43% in 2020 to 51% in 2021 (Kiwoom Securities, 2021).

Customers are the most important part of a business in the logistics and distribution industries. Of the 48 million domestic Internet users, Coupang had approximately 14.8 million active customers in 2020, indicating that most Korean households in Korea were its active users. The COVID-19 pandemic has accelerated the growth rate of the number of Coupang users. Dividing Coupang's sales by the number of active users provides the sales per active user,

calculated as USD 256 per year in 2020. In 2021, the number of active users of Coupang reached 18 million (21% YoY), driving transaction growth, resulting in per capita sales of \$283, an increase of 11% YoY (Hana Financial Investment, 2022).

As shown in Coupang's 2021 annual report, most of its sales consist of retail sales (1p sales) and are increasing by more than 50% every year. Additionally, 3p sales more than double every year. However, the sales growth declined from 2019 to 2021.

Table 3: Summary of Coupang's Income Statement (Consolidated)

(in thousands, \$)

	2021	2020	2019
Net retail sales	16,487,975	11,045,096	5,787,090
Third-party merchant services	1,695,422	789,557	440,845
Other revenue	222,975	132,686	45,328
Total net revenue	18,406,372	11,967,339	6,273,263
Cost of sales	15,455,244	9,981,102	5,240,041
Operating, general and administrative	4,445,090	2,502,231	1,675,145
Total operating cost and expenses	19,900,334	12,483,333	6,915,186
Operating loss	-1,493,962	-515,994	-641,923
Interest income	8,645	10,991	19,135
Interest expense	-45,358	-107,762	-96,907
Other (expense) income, net	-10,913	149,900	22,569
Loss before income taxes	-1,541,588	-462,865	-697,126
Income tax expense (benefit)	1,002	292	-241
Net loss	-1,542,590	-463,157	-696,885

Note: Net retail sales are online product sales to consumers. Third-party merchant services represent commissions, advertising, and delivery fees earned from merchants and restaurants that sell their products through the company's online business. Other revenue includes revenue earned from other offerings.

Source: SEC, March 3, 2022 - 10-K: Annual report for the year ending December 31, 2021

Coupang's high sales growth is a significant component of its operations. Its receivables are collected within a week, and payables are paid 2–3 months after they are incurred. This receivable and payable structure enables continuous business despite operating losses, because it increases working capital as sales grow. Therefore, a slowdown in sales growth can lead to financial pressure. As shown in Table 3 and Table 4, Coupang's financial health has deteriorated. The statement of the financial position showed that Coupang would not be able to satisfy its financial obligations with its accounts receivables, inventories, and cash. Therefore, Coupang tried to overcome these financial difficulties and compensate for its operating losses with the capital raised through the IPO. To improve the operating profit-loss ratio,

it is necessary to reduce selling general & administrative expenses by increasing logistics efficiency or reducing the cost of sales by increasing the proportion of 3p sales. Coupang adopted a strategy to expand fulfillment services by increasing its logistics investments with funds secured through its IPO in 2021. This huge investment in logistics has been noted as a cause for large-scale operating losses in the past, but active investment has established Coupang's competitive advantage, which latecomers cannot mimic. When the fulfillment service increases through logistics investment, selling general & administrative expenses and the cost of sales increase in the short term. However, in the long term, the cost of sales is reduced through an increase in 3p sales.

Table 4: Summary of Coupang's Statement of Financial Position (Consolidated)

(in thousands, \$)

	2021	2020	2019
Assets			
Cash and cash equivalents	3,487,708	1,251,455	1,222,276
Restricted cash	319,800	144,949	144,112
Accounts receivable, net	175,350	71,257	63,852
Inventories	1,421,501	1,161,205	631,740
Other current assets	232,447	211,848	93,039
Total current assets	5,636,806	2,840,714	2,155,019

Long-term restricted cash	2,839	4,898	5,147
Property and equipment, net	1,347,531	1,017,947	536,108
Operating lease right-of-use assets	1,374,629	1,011,255	467,224
Goodwill	9,739	4,247	3,991
Long-term lease deposits and other	270,290	188,271	62,365
Total assets	8,641,834	5,067,332	3,229,854

Source: SEC, March 3, 2022 - 10-K: Annual report for the year ending December 31, 2021

4.2.3. Coupang's Alternative IPO Pricing

Based on the IPO price, Coupang's corporate value is USD 63 billion (approximately KRW 72 trillion), and its market capitalization is USD 60 billion (approximately KRW 68 trillion). Coupang's performance in 2020, which was expected to be reflected in the IPO price calculation, estimated in terms of GMV was \$18.7 billion (approximately KRW 22 trillion), and sales was \$17 billion (approximately KRW 14 trillion). Accordingly, the inverse calculation of the multiple applied to the calculation of Coupang's IPO price is as follows.

Table 5: Coupang's Alternative IPO Pricing

Indicators for valuation	Enterprise Value1) (when listed) (①)	Approximately \$63 billion
	Market Capitalization12) (when listed) (②)	Approximately \$60 billion
	GMV (year 2020) (③)	Approximately \$19 billion
	Sales (year 2020) (④)	Approximately \$12 billion
	Net Loss (year 2020) (⑤)	Approximately - \$0.46 billion
	EBITDA (year 2020) (⑥)	Approximately - \$0.36 billion
Valuation multiple	EV/GMV (=①/③)	3.37
	EV/Sales (=①/④)	5.26
	P/GMV (=②/③)	3.21
	PSR (=P/sales = ②/④) 3)	5.01
	EV/EBITDA (=①/⑥)	-176.40
	PER (=②/⑤)	-129.59

Note : 1) Enterprise value = Market capitalization + net debt

2) Market capitalization = price × number of shares

3) PSR = price / sales per share = market capitalization / sales

Based on the IPO price, the EV/GMV multiple is 3.37x, and the EV/sales multiple is 5.26x. The P/GMV multiple calculated using market capitalization (= price × number of shares) instead of EV is 3.21x, and the PSR (P/Sales) multiple is 5.01x. If the multiple is calculated based on the PER or EV/EBITDA, which are commonly used traditional multiples in valuation, Coupang's net loss in 2020 is -\$0.46 billion, and EBITDA is -\$0.36 billion, showing a negative value. Thus, traditional valuation methods, such as PER and EBITDA, cannot be applied. Coupang's growth potential and

high market share resulting from the increased number of customers and per-customer sales are essential to estimating its corporate value. Thus, multiples that reflect the value of market share and growth potential, such as EV/GMV, EV/Sales, P/GMV, and PSR, may be better multiples for measuring Coupang's value than traditional valuation methods, such as PER and EV/EBITDA.

4.2.4. Analysis of Comparable Company

Amazon is the most suitable comparable company to determine Coupang's IPO price. Although there is another possible comparable company, Alibaba, a Chinese distribution company listed on the NASDAQ in 2014, it is not a suitable option because it focuses on 3p rather than 1p. As the take rate between 3p and 1p commerce differs significantly, comparing GMV and sales between the two companies is difficult, and their valuation multiples have significant differences. Conversely, both Amazon and Coupang focus on 1p commerce and have obtained loyal customers through exclusive subscription services (Amazon Prime membership and Coupang Rocket Wow membership). Furthermore, they have many similarities in their business models, such as providing a service that delivers a variety of products quickly by investing in a logistics system.

Amazon, established in July 1994 by Jeff Bezos as an online bookstore, was one of the first e-commerce companies to sell and deliver products online. In 1997, three years after its establishment, Amazon was listed on the NASDAQ. At the time of its IPO in 1997, Amazon was just a start-up with \$15.7 million in sales and a net loss of \$5.8 million. However, Amazon diversified its revenue structure by expanding its business into subscription and web services and reinvested its profit for further expansion, becoming one of the most valuable companies in the United States. On the first day of its IPO on May 15, 1997, Amazon's share price was only \$1.5 (adjusted price after stock split, the price before the stock split was \$18). Since 2017, Amazon's share price has reached \$1,000 and increased to over \$3,000 in 2020. As of 2020, Amazon's revenue structure consists of revenues from the online store, 1p commerce of \$163 billion (50.6%), 3p commerce of \$63 billion (19.7%), web services, such as cloud computing, of \$40 billion (12.4%), and subscription service of \$22 billion (6.8%).

Although Amazon and Coupang's revenue models are similar, Coupang differs in that 1p commerce accounts for a

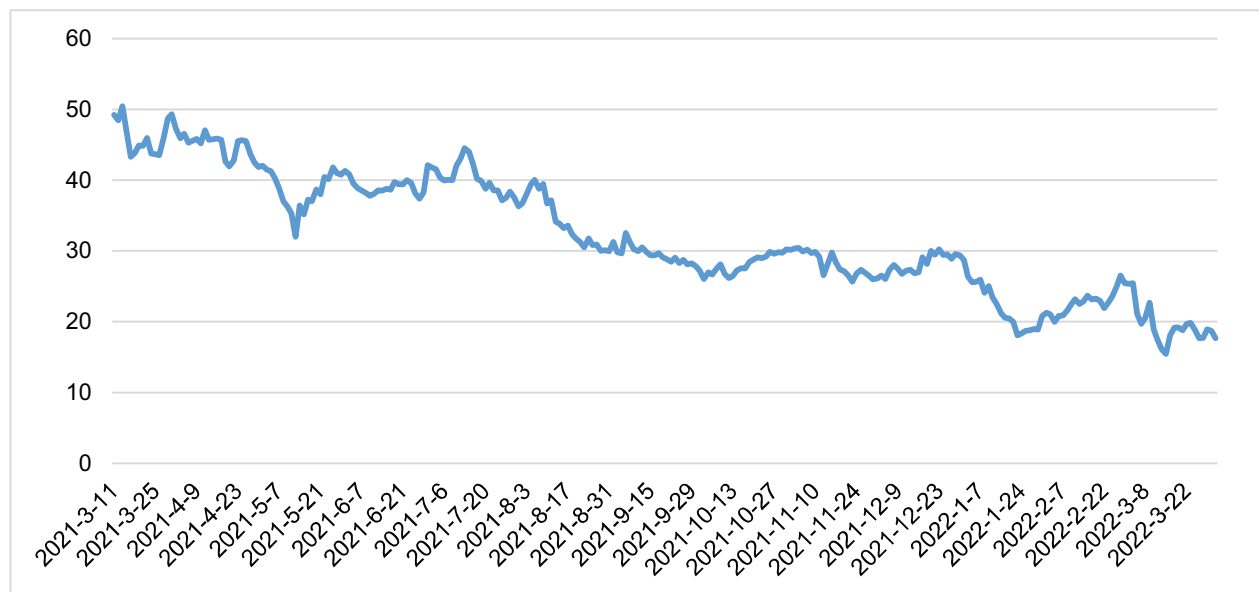
much larger proportion of its whole business. The difference in the proportion of 1p commerce leads to a difference in the company's total take rate. Therefore, when applying a relative valuation method using Amazon as a comparator, the P/GMV method or EV/GMV method would be more appropriate for the valuation of Coupang than the P/sales method or EV/sales method. If the difference in the total take rate is adjusted, the P/sales method or EV/sales method can also be used.

4.3. The Evaluation of the IPO Price

At the time of Coupang's IPO, its EV was USD 63 billion (approximately KRW 72 billion). Experts believe that Coupang's high valuation was due to differences in the methods of corporate valuation for high-growth companies, in addition to differences in the size of the U.S. stock market. This implies that U.S. investors highly value companies with high growth potential based on the success of Amazon. In

other words, the U.S. investors have a positive view of firms with high growth potential, having experienced the success of Amazon and Alibaba. However, domestic investors are more conservative in valuing a company with operating losses because there are no precedents of a start-up company with losses that has dominated the market.

As Coupang is well-known as the Amazon of Korea, the IPO price of Coupang is expected to have been calculated by applying a relative valuation method using Amazon as a comparable company. Despite accumulated losses, Coupang was successfully listed on the U.S. stock market by raising its IPO price twice, appealing to its high sales and GMV growth rate. Coupang's IPO offer price was \$35, but immediately after IPO, the share price reached \$50. At the time of the IPO, Coupang's market capitalization was the third largest in the Korean stock market. However, Coupang's share price has continued to decline, and, as of March 2022, its share price has reduced to \$17–18, which is one-third of its highest price.



Source : <https://www.investing.com>

Figure 2: Coupang's Share Price (USD) Trends (as of March 2022)

The continuous decline in share price after its IPO suggests that Coupang's corporate value and IPO price may have been overestimated. Although Coupang's IPO price calculation details have not been disclosed, relative valuation methods, such as EV/GMV, EV/Sales, P/GMV, or P/Sales, have probably been used instead of traditional valuation methods, such as PER multiple or EV/EBITDA⁴. Table 6 shows the major valuation-related indices for Amazon and Alibaba, which are companies comparable to Coupang.

Multiples based on Coupang's 2020 performance and its

IPO price show that P/GMV is 3.21x and the PSR (P/Sales) is 5.01x, suggesting that the fair value of Coupang's market capitalization is 3.21 times GMV and 5.01 times sales, respectively. As shown in Table 9, Coupang's P/GMV is higher than that of Alibaba (1.05x), which focuses on the open market (3p), but is similar to that of Amazon (3.43x), which has a high proportion of direct purchases (1p). Coupang's P/Sales are between Amazon's 4.22x and Alibaba's 7.1x, implying that Coupang's valuation is not overestimated compared to that of the peer group.

Table 6: Global E-Commerce Peer Valuation (as of 2020)

Company Name		Amazon	Alibaba
Index	Year	United States	China
market capitalization (billion USD)	2018	722	446.04
	2019	925.65	472.08
	2020	1630	519.72
GMV (billion USD)	2018	277	386
	2019	335	434
	2020	475	493
Sales (billion USD)	2018	232.9	37.8
	2019	280.5	56.2
	2020	386.1	73.2
Net Profit (billion USD)	2018	10.1	9.7
	2019	11.6	13.1
	2020	21.3	21.5
EBITDA (billion USD)	2018	27.8	13.8
	2019	40	14
	2020	53.2	20
PER (multiple)	2018	74.5	51.6
	2019	80.3	60.9
	2020	78	30.8
P/Sales (multiple)	2018	3.1	11.8
	2019	3.3	8.4
	2020	4.2	7.1
P/GMV (multiple)	2018	2.61	1.16
	2019	2.76	1.09
	2020	3.43	1.05

Source: Kyobo Securities Research Center, 2021, Spot Report: Internet, EDGAR, Google Finance

However, the appropriateness of a peer group's valuation should be considered. Coupang's EV/GMV, EV/Sales, P/GMV, and P/Sales calculated based on the IPO price are most similar to Amazon, as is its business model. Thus, Coupang may have considered Amazon as the first comparable company. Based on comparisons with Amazon, Coupang may have adjusted multiples by referring to the multiples of e-commerce companies listed in the U.S. stock market; however, this may have been inappropriate because its main place of business is Korea. Moreover, Coupang's 2020 performance and the forecasted performance of 2021 may have been used as the basis for calculating its IPO price. However, considering that in 2020, not only Coupang but also the entire e-commerce industry experienced an unprecedented boom influenced by COVID-19, the valuation of Coupang may have been overestimated. Therefore, for fast-growing companies, the selection of comparable companies and the period for calculating comparative indicators should be carefully determined. The sales and GMV-based multiples applied to Coupang's valuation may have obscured Coupang's accumulated losses and suggested an overly positive future. Coupang's sales and GMV in 2021 increased compared to the previous year, but

the growth rate declined. Moreover, accumulated losses increased because of the increase in selling and administrative costs. Consequently, Coupang's share price has continued to decline since its IPO.

In the future, the controversy of overvaluation due to the gap between sales and net profits is expected to continue for e-commerce companies. For an accurate valuation of a company, the effects of indicators other than GMV and sales should be considered, and comparable companies and the period for calculating the comparative indicators should be carefully selected.

5. Conclusions

Owing to the rapid growth of e-commerce distribution, traditional corporate valuation models cannot easily explain certain IPOs and M&As. For the valuation of e-commerce companies, traditional valuation models, such as DCF, EV/EBITDA, and PER, are not suitable because they do not reflect the characteristics of e-commerce companies. Thus, this study examines the valuation methods and models that change with the rise of e-commerce distribution by investigating Coupang's IPO. Coupang was successfully listed on the NYSE in March 2021, as it was highly valued for its growth potential, despite its accumulated losses. Coupang's IPO price was revised upward twice, implying that relative valuation methods, considering sales and transaction amounts, were utilized rather than traditional valuation methods. Sales and transaction volumes are important indicators of a firm's market share in the e-Commerce industry. However, the continuous decline in Coupang's share price since its IPO suggests that Coupang's valuation should have been conducted with more consideration, accounting for factors such as profit or operating cash flow. In addition, detailed consideration according to the proportion of 1p sales and 3p sales is required for the valuation of e-commerce companies.

This study contributes to the literature by examining the growing e-commerce distribution using Coupang's IPO. Specifically, this study examines the valuation methods of the e-commerce industry, which have not been investigated so far, and provides practical suggestions that may be suitable for the valuation of e-commerce companies. Moreover, this study provides directions for improving valuation methods for the e-commerce industry. This is particularly valuable for investors who are considering investing in the e-commerce industry and companies preparing for IPOs and M&As.

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Endnotes:

1. In 2021, eBay Korea and Shinsegae (SSG.com) were merged.
2. Net debts are total borrowings minus cash and cash equivalents.
3. Coupang LLC, the parent company of Coupang, received VC funding. Therefore, Coupang had to be listed on the U.S. market for VCs to exit.
4. In the case of Coupang, the difference between market capitalization and EV is not important, as its net debt is approximately \$3 billion. Therefore, this study uses the P/Sales and P/GMV multiples using the market capitalization as a numerator.