Investing Decisions Based on Multiple Valuations - Case Study of Several Chosen Gaming Conglomerates

Jiuchuan Song*

School of European and Latin American Studies, Shanghai International Studies University, 200000 Shanghai, China

*Corresponding author: 0211107002@shisu.edu.cn

Abstract. With the significant growth and transformation in the gaming industry, there is necessity to explore the complexities of investment decisions within several gaming conglomerates by employing multiple valuation methods as a case study and referring to recent data from 2019 to 2023 from U.S. Securities and Exchange Commission, based on stock prices on 12 August, 2023. Briefly introducing the background and the valuation tools, the analysis is mainly divided into two parts, market valuation, including P/E ratio, expected growth rates in EPS and gross revenue and PEG ratio, and profitability valuation, including GP/A ratio and annual and quarterly gross margin trends. In light of the above analysis, a best investing object is selected and the most significant risk factors of investing in the selected stock are listed. It is promising that investors and stakeholders will broaden more profound insights into the financial health, stability, and growth potential of ATVI, SONY, EA, and MSFT and the gaming industry.

Keywords: Multiple valuations; gaming conglomerates; profitability; market valuation.

1. Introduction

The gaming industry, which employs creative people, has gained popularity recently. Future market growth is anticipated to be rapid due to rising smartphone and console usage, as well as cloud adoption. Recent COVID-19 outbreaks have resulted in a sharp increase in users and game downloads.

As they work to achieve their goals, organizations in the gaming sector frequently engage in mergers and acquisitions. From a theoretical and analytical standpoint, the effect of the recent merger between Microsoft and Activision-Blizzard on the gaming business is being explored [1].

Overall, a theoretical and analytical assessment is part of the ongoing process of determining how the Microsoft-Activision-Blizzard combination would affect the gaming industry. The study aims to provide insights into the potential impact of the merger on the competitive landscape and innovation in the gaming industry.

ATVI (Activision Blizzard, Inc.), SONY (Sony Group Corporation), EA (Electronic Arts Inc.) and MSFT (Microsoft Corporation), these companies compete severely from game development and publishing, franchise competition to gaming services, esports and competitive gaming. They deeply penetrate almost all the parts of gaming industries. Beside publishing games and maintenance, they also must focus on marketing and branding, mergers and acquisitions, and global market share.

In the dynamic world of investment, selecting the most promising asset is a crucial decision. This essay aims to provide a comprehensive evaluation of investment opportunities within the gaming industry by comparing four industry giants: ATVI, SONY, EA, and MSFT. It is employed a range of financial metrics, including the Price-to-Earnings (P/E) ratio, Price/Earnings to Growth (PEG) ratio, gross profit margin trend, and Gross Profit to Assets (GP/A) ratio, to gauge the financial health and growth potential of these companies. The ultimate objective of this analysis is to identify the most attractive investment prospect among these gaming industry leaders and make a compelling case for why Electronic Arts (EA) emerges as the standout choice.

In the pursuit of this objective, it is hopeful that investors and stakeholders will gain valuable insights into the financial health, stability, and growth potential of ATVI, SONY, EA, and MSFT. After a thorough analysis of these financial metrics, it will make a compelling case for why Electronic Arts (EA) stands out as the best investment opportunity among the four gaming industry giants. This

conclusion will be based on a holistic assessment of valuation, growth potential, profitability, and asset utilization. After reading this essay, readers will comprehend fully why Electronic Arts (EA) is a relatively more promising investment choice within the vibrant and ever-evolving gaming industry.

2. Valuation Tools

2.1. Usual Valuation Tools

2.1.1 P/E ratio

In the realm of financial analysis, the Price-to-Earnings (P/E) ratio holds a pivotal role, serving as a crucial metric for investors, researchers, and analysts alike. The P/E ratio quantifies the relation between a company's stock price and its earnings per share (EPS) [2]. It is computed by dividing the market price per share by the EPS, presenting investors with a simple yet potent measure to assess valuation. Importantly, the P/E ratio's interpretation sticks to the idea that investors are willing to pay a certain multiple of earnings for ownership, thus reflecting market expectations about future growth. A higher P/E ratio signifies bullish expectations and possible premium valuation, while a lower ratio suggests either modest growth prospects or undervaluation [3].

$$\text{P/E Ratio} = \frac{\text{Market Capitalization}}{\text{Net Income}} = \frac{\text{Share Price}}{\text{Earnings per Share (EPS)}}. \quad (1)$$

The P/E ratio is always put into practice as Trailing Twelve Months (TTM) P/E ratio and Next Twelve Months (NTM) P/E ratio [4]. The TTM P/E ratio, a widely utilized variant, is computed through separating a company's current market price per share by its earnings per share (EPS) over the past twelve months. In contrast, the NTM P/E ratio estimates future valuation through separating the current market price per share by the projected EPS for the forthcoming twelve months. These ratios allow investors to gauge how the market values a company's earnings performance in relation to its stock price, for both past and anticipated periods [5].

$$\text{NTM P/E Ratio} = \frac{\text{Current Market Price per Share}}{\text{Estimated EPS for Next Twelve Months}}. \quad (2)$$

$$\text{TTM P/E Ratio} = \frac{\text{Current Market Price per Share}}{\text{EPS for Trailing Twelve Months}}. \quad (3)$$

2.1.2 Expected growth rates in EPS and gross revenue

Expected growth rates in Earnings Per Share (EPS) and gross revenue are fundamental metrics used to project a company's future financial performance and guide investment decisions [6]. Used in various valuation methods, they can estimate the present value of future cash flows. Higher growth rates generally lead to higher valuations.

$$\text{Expected EPS Growth Rate} = \frac{\text{Current EPS} - \text{Previous EPS}}{\text{Previous EPS}} * 100\%. \quad (4)$$

$$\text{Expected Revenue Growth Rate} = \frac{\text{Current Gross Revenue} - \text{Previous Gross Revenue}}{\text{Previous Gross Revenue}} * 100\%. \quad (5)$$

2.1.3 PEG ratio

The Price/Earnings-to-Growth (PEG) ratio is a financial metric that combines a company's Price-to-Earnings (P/E) ratio with its earnings growth rate. This ratio provides a more comprehensive perspective on a company's valuation by considering its earnings growth in relation to its current stock price [7].

$$\text{PEG Ratio} = \frac{\text{P/E Ratio}}{\text{Earnings Growth Rate}}. \quad (6)$$

2.2. Profitability Valuation Tools

2.2.1 GP/A ratio

The Gross Profit to Assets (GP/A) ratio is a financial metric that provides insights into a company's operational efficiency and asset utilization. This ratio measures how effectively a company can generate gross profit from its total assets [8]. Calculated by comparing gross profit to total assets, the GP/A ratio serves as a valuable tool for evaluating a company's profitability relative to the resources it employs.

$$\text{GP/A Ratio} = \frac{\text{Gross Profit}}{\text{Total Assets}} * 100\%. \quad (7)$$

2.2.2 Annual and quarterly gross margin trends

Analyzing annual and quarterly gross margin trends is an essential aspect of financial analysis that provides insights into a company's cost structure, pricing strategy, and overall profitability. Gross margin, expressed as a percentage, represents what remains of revenue after subtracting cost of goods sold (COGS) [9]. Tracking the trends in gross margin over time helps stakeholders assess a company's ability to manage costs, maintain pricing power, and achieve sustainable profitability.

$$\text{Gross Margin} = \frac{\text{Gross Profit}}{\text{Total Revenue}} * 100\%. \quad (8)$$

3. Comparison from the Perspective of Market

3.1. TTM P/E and NTM P/E

Investors are more prepared to pay more for the company's earnings when the P/E ratio is greater, possibly due to expectations of higher growth. A lower P/E ratio might suggest a more attractively priced stock, but it could also imply lower growth expectations. Comparing TTM and NTM P/E ratios gives insights into market sentiment regarding the company's near-term growth prospects. A declining NTM P/E relative to TTM P/E might indicate that future growth expectations are moderating.

As is shown in Table 1, all four of these businesses concentrate on the high-tech gaming and service sector. Therefore, the market will undoubtedly have high expectations for them, which will result in a high P/E, but it is important to think about other ratios in order to decide. According to the graph, MSFT has a higher P/E ratio than EA, SONY, and ATVI, which suggests that investors are prepared to pay more for its potential profits.

Table 1. TTM P/E & NTM P/E of ATVI, SONY, EA, and MSFT

	ATVI	SONY	EA	MSFT
TTM P/E	21.56	15.59	18.10	34.29
NTM P/E	21.77	17.01	18.35	30.72

3.2. The Reason of the Changes in P/E

As is shown in Table 2, growth rates suggest potential for increased profitability and revenue generation, while negative growth rates may signal challenges that require strategic adjustments. While EA, SONY, and ATVI are anticipated to encounter difficulties with negative growth rates, with SONY having the lowest EPS and gross revenue gross rates, MSFT is anticipated to experience growth in both EPS and gross revenue, demonstrating a favorable outlook for its financial performance.

Table 2. Expected growth rates in EPS and gross revenue of ATVI, SONY, EA, and MSFT

	ATVI	SONY	EA	MSFT
EPS growth rate	-0.9%	-8.4%	-1.3%	11.6%
Revenue growth rate	-1.18%	-5.0%	-1.9%	10.6%

The P/E ratio is not static; it changes over time due to a variety of factors. Two primary perspectives that influence changes in the P/E ratio are the company's Earnings Per Share (EPS) growth rate and the market's assessment of the company's growth prospects.

Firstly, the EPS growth rate plays a significant role in driving changes in the P/E ratio [10]. A significant variable that might affect changes in the P/E ratio is the EPS growth rate. Investors might be more prepared to pay more for a stock if a company's EPS is increasing quickly, which could result in a rise in the P/E ratio. In contrast, investors may become less inclined to pay a high price for the stock if a company's EPS growth rate slows or declines, which could result in a drop in the P/E ratio [11]. When a company experiences higher EPS growth, its stock may become more attractive to investors, leading to an increase in demand for the stock. This increased demand can drive up the stock price, causing the P/E ratio to rise.

Secondly, the market's perception of a company's growth prospects also significantly influences the P/E ratio [12]. If the market believes that a company's growth prospects are strong, investors might be willing to pay a higher price for the stock, leading to an increase in the P/E ratio. Conversely, if the market perceives weaker growth prospects, the P/E ratio may decrease.

Furthermore, changes in interest rates, macroeconomic conditions, and industry developments are other variables that might affect the P/E ratio. The P/E ratio might decline, for instance, if investors become less willing to pay high prices for stocks as interest rates rise. Like the last example, if an industry is in decline, investors can be less eager to pay a premium price for its stocks, which can also result in a decline in the P/E ratio [13].

3.3. PEG Ratio

The Price/Earnings-to-Growth (PEG) ratio combines the Price-to-Earnings (P/E) ratio with the expected earnings growth rate, offering a way to assess the relationship between a company's valuation and its growth prospects.

Positive PEG ratios are often regarded as signaling undervaluation in relation to anticipated growth. Given its anticipated growth rate in Table 3, MSFT's stock may be expensive, according to the PEG ratio of 2.95. Negative PEG ratios for EA, SONY, and ATVI might be deceiving. Negative projected growth can result in extremely negative PEG ratios; however, the index might not be useful in these situations.

However, when dealing with negative PEG ratios, it is essential to verify the data sources, growth rate assumptions, and overall context. Negative ratios can often be the result of anomalies, data errors, or unrealistic growth assumptions. It is recommended to cross-reference the information with multiple sources and assess the validity of the growth projections to make meaningful conclusions about a company's valuation and growth prospects.

Table 3. PEG ratios of ATVI, SONY, EA, and MSFT

	ATVI	SONY	EA	MSFT
PEG	-22.80	-1.86	-13.58	2.95

4. Comparison of Profitability

4.1. GP/A Ratio

The Gross Profit to Assets Ratio (GP/A) gauges how well a business makes use of its assets to produce gross profit. A higher GP/A ratio typically denotes better operational effectiveness and asset utilization.

As is shown in Table 4, with a GP/A ratio of 41.9%, EA has the greatest ratio and may produce a bigger gross profit in comparison to its assets. Additionally, MSFT and ATVI have greater GP/A ratios than SONY, indicating more effective asset usage to produce gross profit.

Table 4. GP/A ratios of ATVI, SONY, EA, and MSFT

	ATVI	SONY	EA	MSFT
GP/A	19.4%	9.8%	41.9%	35.5%

4.2. Annual and Quarterly Gross Margin Trends

Analyzing the annual and quarterly gross margin data provides insights into their cost management and pricing strategies.

As is shown in Table 5, EA has the largest gross margin both annually and quarterly, which increases its capacity to keep more money when direct expenditures are taken into consideration. Additionally, MSFT and ATVI have relatively high gross margins, which is likely a result of their effective cost control. The fact that SONY's quarterly gross margin data is not released on Nasdaq and the company has lower gross margins may imply difficulties managing costs and reaching profitability.

Table 5. Annual and quarterly gross margin trends of ATVI, SONY, EA, and MSFT

	ATVI	SONY	EA	MSFT
Annual gross margin	70.5%	27.2%	75.9%	68.9%
Quarterly gross margin	70.3%	N/A	76.1%	70.1%

5. The Best Investment Object

5.1. The Ascendancy and Descendancy of Investing in the Selected Stock

5.1.1 Market valuation

From a market valuation perspective, Electronic Arts (EA) appears to be the most attractive investment choice among the companies listed. It has the lowest P/E ratios, which means investors are paying a reasonable price for its earnings. Additionally, its negative PEG ratio indicates that it is undervalued relative to its expected growth rates, which, while negative, are less severe compared to its peers.

EA has the lowest TTM and NTM P/E ratios among the companies, indicating that investors are paying a relatively lower price for each dollar of EA's earnings compared to the other three companies. EA, SONY, and ATVI all have negative expected growth rates in both EPS and gross revenue. However, EA's declines are less severe compared to SONY and ATVI. EA's negative PEG ratio suggests that it is undervalued relative to its expected growth rates, making it a potentially attractive investment choice.

However, it's crucial to consider other factors like competitive positioning, industry trends, and the broader economic environment before making investment decisions. Valuation is just one aspect of the investment analysis process, and a comprehensive evaluation should encompass multiple dimensions of a company's financial health and prospects.

5.1.2 Profitability

From the perspective of profitability, Electronic Arts (EA) also appears to be the most attractive choice for investment among the companies mentioned.

EA's GP/A ratio of 41.9% is significantly higher than that of its competitors. This means that for every dollar of assets it employs, EA generates a higher gross profit compared to the other companies. It reflects efficient asset utilization and a strong ability to convert assets into profit.

EA consistently maintains the highest gross margin figures among the companies. Both its annual and quarterly gross margins are notably higher than its peers. This reflects EA's effective management of production costs, possibly through successful pricing strategies or economies of scale.

EA's focus on profitability is evident in its strong gross margin performance. Higher gross margins indicate a company's ability to retain a larger share of revenue as profit, which is a key indicator of profitability.

5.2. The Most Significant Risk Factors of Investing in the Selected Stock

5.2.1 Extremely competitive business

There is intense competition in the gaming sector. Although new products and services are continuously being introduced, very few of them generate significant involvement or a sizable portion of overall revenue. Both fresh start-ups and established interactive entertainment companies compete with one another. The gaming, technology, and entertainment industries have also merged in recent years. As a result, EA is being directly challenged by bigger, better-funded technological companies in the market for interactive entertainment.

5.2.2 Mismatch of product and live service development schedules

Numerous circumstances, both within our control and those outside of it, have an impact on our ability to meet the development deadlines for products and live services. Players' input, the creative methods employed, the coordination of sizable and occasionally dispersed development teams, evolving work models, the complexity of EA's products and the platforms for which they are developed, the necessity of fine-tuning those products prior to their release, and, in some cases, the influence of third parties are some of these. Conglomerates have had to reschedule or cancel release dates in the past as a result of delays in the development of goods and services. Any deviation from the planned production or release schedules would probably result in a revenue delay and/or potentially a sizable revenue shortfall, raise EA's marketing and/or development costs, hurt the company's profitability, and produce operating results that were noticeably different from what was anticipated.

5.2.3 Government regulations negatively impacting business

As a multinational corporation, EA is governed by a wide range of intricate laws and rules, both domestically and abroad. Consumer protection, minors' protection, online security, content, advertising, information security, intellectual property, competition, penalties, taxation, and employment are just a few of the topics that are covered by these laws and regulations. It is challenging to foresee how these laws and regulations will be applied or what impact they will have because so many of them are evolving and growing all the time. The enforcement of these rules might hurt their business by restricting the goods and services they can provide to customers or how they can do so. Future modifications to the applicable laws or changes in interpretation may result in an increase in the costs associated with complying with these regulations. Any failure on their part to abide by these regulations or the unexpected implementation of these laws may hurt their business and incur fines or serious legal liabilities.

6. Conclusion

Based on the above data and analysis, EA stands out in terms of gross profitability and efficient utilization of assets. MSFT showcases growth expectations but appears relatively overvalued based

on its P/E and PEG ratios. SONY and ATVI face growth challenges and exhibit varying levels of profitability and valuation. It is important to consider these ratios alongside other relevant financial and industry-specific factors when making investment decisions. Hopefully, chances are that readers gain valuable insights into the financial health, stability, and growth potential of ATVI, SONY, EA, and MSFT. Here is presented a practical combination of the financial metrics with numerous profound researches in basis and the novel changes in the prosperous gaming industry.

However, due to limited financial data and the author's capabilities, this report did not go into details on the financial conditions of these four companies. Future studies can focus further on how to use financial metrics more effectively and appropriately. It will be exciting to see how these research items are used in emerging sectors.

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