

# Financial statements analysis on Pfizer

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**Abstract.** Financial reporting is a snapshot of the business activities and financial status of companies and is widely used for various purposes by different stakeholders, including insiders and outsiders of the company. The quality and relevance of the financial reporting made by the company's managers with mixed incentives largely influenced investment decision-making, resulting in information asymmetry in the capital market. The financial statement analysis (FSA) plays an important part to mitigate the information gap and assists investors in making unbiased investment decisions, which consists of four parts: business strategy analysis, accounting analysis, financial analysis and prospective analysis. This paper analyses inside information from Pfizer Inc. using FSA based on the financial reporting from the financial year of 2019 to 2022 (FY2019 to FY2022) in conjunction with other supplement materials. This paper finds Pfizer primarily takes the product differentiation strategy as its key profit driver, and the related accounting policies and estimations generally reflect the economic reality. The short-term liquidity of Pfizer should be enhanced, and the firm's market value is overvalued compared to its intrinsic value on December 20, 2022.

## 1 Introduction

### 1.1 Background of financial statement analysis

Financial statements reflect a company's economic performance by conveying financial and accounting information. Financial reports are prepared by the firm's managers (insiders), who have a better understanding of the firm's performance than those external investors or analysts. Inside traders (managers of the firm) have access to private information that is not available to external investors, which leads to information asymmetry in the capital market.

The financial reporting may contain some embedded information due to the mixed incentives of the reporters. It is the manager's responsibility to bridge the information gap to signal the market and attract investments, for example, voluntary disclosure can reduce information asymmetry and lower the cost of capital. A study of Chinese share markets demonstrates that high-quality accounting information can reduce information asymmetry and promote foreign investments [1]. Moreover, agency problems may arise when managers intend to use their information advantage to work for their own interest by incorporating some noises into the financial reports to benefit themselves, such as misrepresenting earnings to obtain high personal compensation [2, 3].

Investors' interest would be greatly influenced by the reliability and relevance of accounting and financial information. It is concerned that managerial disclosure is effective, and investors are capable of utilizing related information to make unbiased investment decisions due to the increased amount of required disclosures and the obstacles in communicating growingly complex business transactions [4].

### 1.2 Purpose of FSA

Financial statement analysis (FSA) plays an important role in analysing the company's economic realities from the perspective of the external users of its financial statements. There is always a difference between economic events and accounting entries in terms of the recognition, measurement and timing because generally accepted accounting principles (GAAP) in the United States and elsewhere permit reporters to use different methods in recognizing economic events [5]. Combining the financial reports with outside supplementary information, FSA facilitates a better understanding of the impact accounting system and aids in financial data quality assessment and decision-making for equity investors and creditors [5].

FSA is designed to mitigate information asymmetry in the capital market. It also facilitates market efficiency and assesses the intrinsic value of the underlying company. With an effective FSA, investors can obtain "inside information" about the firm and match their savings to prudent investments.

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### 1.3 Case study of FSA

Pfizer Inc. (Pfizer), listed on the New York Stock Exchange, is a leading biopharmaceutical company with an estimated 8% market share of 8% in the global pharmaceutical market in 2021 [6]. It was widely recognized for its substantial contributions during the COVID-19 pandemic. A case study of Pfizer will be presented in this paper to illustrate how a FSA can be conducted in four steps, including business strategy analysis, accounting analysis, financial analysis and prospective analysis.

Pfizer was established in 1849 and has its headquarters in Manhattan, New York City, primarily engaged in the development and manufacture of biopharmaceutical products, such as medicines, vaccines, and therapeutics [7, 8]. Pfizer operates in both developed and emerging markets throughout the world and focuses on multiple therapeutic areas, including oncology, inflammation and immunology, infectious diseases, other rare diseases, etc. [9].

## 2 Literature review

FSA serves as a tool for identifying and comparing the distinctive features of financial statements and for detecting the prospects and challenges of a given company [10]. FSA enables the determination of factors contributing most to adverse outcomes in a business entity in light of the current turbulent competitive environment [11].

Analysts and investors generally rely on accounting information to make inferences about a company's capital market performance. Omokhudu et al. found a significant correlation between the firm's value and its earnings, cash flow and dividends, suggesting investors should pay increased attention to these accounting performances [12].

The FSA applied by Murthy et al. demonstrated the importance of financial performance analysis when making investment decisions as a result of the balance sheet and income statement comparative analysis and ratio analysis of Hatsun Agro Product Ltd [13].

The research by Hofmann and Lampe has revealed considerable differences in the asset and liquidity structure, as well as homogeneity in capital structures among logistics service providers through FSA including balance sheet analysis and correlation analysis [14].

The research by Berthilde and Rusibana has demonstrated FSA is of great importance in assessing substantial risks in the establishment and development of businesses [15]. The research incorporated descriptive and correlational research, utilized quantitative and qualitative methods, conducted FSAs for the Bank of Kigali, Rwanda and revealed improvements needed to be made in deposits, savings and repayment arrangements to ensure the bank's financial stability [15].

The analysis by Endri and Firdaus has mainly focused on analyzing the financial ratios of Indonesian banks listed on the Indonesia Stock Exchange under the BUKU IV category and concluded that the sampled banks had

good liquidity and solvency and profitability between 2014 and 2019 [16].

Prior research has mainly established the FSA quantitatively, primarily focusing on the reporting number from financial statements, such as financial ratio analysis or income statement analysis. It is possible to conduct a more comprehensive FSA quantitatively and qualitatively through the investigation of financial statements and other public data, which can be conducted through business strategy analysis, accounting analysis, financial analysis and prospective analysis [17].

## 3 Business strategy analysis

### 3.1 Industry analysis

#### 3.1.1 Rivalry among existing firms

The biopharmaceutical industry is developing substantially due to the significant demand and expanding acceptance for the biopharmaceutical market, as well as the enhancing ability to treat previously incurable diseases, which are anticipated to drive a compound annual growth rate of 8.07% for the biopharmaceuticals market during 2023-2028 [18]. In such a promising industry, firms are able to expand without having to compete for market share.

Several large players participate in the industry, including Pfizer and Roche with 8% and 7% market shares (in 2021), respectively, and AbbVie, Johnson & Johnson, Novartis and Merck & Co. with 5% each [6]. The industry has a relatively low level of concentration because players had similar market shares, which could potentially increase competition within the existing market.

Research and development (R&D) investments contribute to product differentiation in the industry, resulting in limited substitutes and relatively high switching costs for customers of patented drugs. The R&D of patented drugs may result in relatively low competition, but when the patent expires, there will be an increase in competition (especially due to the pressure from generics) [6].

The biopharmaceutical industry is strictly regulated, as approval procedures and duration of exclusivity always diversify in different countries [6]. Also, the global R&D investment in 2022 was US\$238 billion and is predicted to increase in the following years [19]. It appears that there is a high exit barrier in the industry, thereby resulting in increased price competition.

Overall, the rivalry among the existing firms is moderate in the industry, but the huge development of players in the industry may lead to increasing pressure.

#### 3.1.2 Threats of new entrants

Large facilities and costly machinery are necessary for drug production, along with a level of high R&D investment, indicating an economics of scale of the large existing company [20]. Approximately 7.1% of

pharmaceutical companies' upfront R&D costs were made between 1987 and 2012 [21]. Moreover, the industry has been experiencing increasing regulatory requirements as well as the complexity of supply chain and biopharma operations, showing that early players in the industry are well-positioned to have a competitive advantage by overcoming legal barriers and seeking stable suppliers [22]. Furthermore, the differentiation of the patented product implies relatively high switching costs for customers.

Overall, the existing companies can leverage their business strategies to make respond to the potential new entrants, indicating relatively low threats from new entrants from new participants.

### 3.1.3 Threats of substitutes

The existing therapeutic has evolved and developed towards high efficiency and better effectiveness, and the R&D has supported the creation of new products [22]. Technological advancements in facilities and innovations in therapies like regenerative medicine can promote the development of substitutes [22]. In the event that a patent expires, the market share of generics will increase, potentially causing price competition [6]. However, generics do not always function as effectively as branded medicines [23].

Overall, substitutes pose a relatively low threat, as long as the R&D of new drugs is conducted effectively.

### 3.1.4 Bargaining power of buyers

The high demand for effective and safe medicines for some previously untreatable diseases allows companies to charge premiums for innovative drugs [23]. Despite the higher costs of goods sold (COGS) of innovative drugs, the previously unmet demand and potential future demand support the bargaining power of pharmaceutical companies [23]. Also, the high differentiation level of the patented medicines weakens the bargaining power of buyers. However, generics with low prices have overcome the early regulatory difficulties, companies must accelerate R&D for better medicines or reduce their COGS [23], thus diminishing the bargaining power of innovative biopharmaceutical companies.

Overall, the bargaining power of buyers is moderate in the industry.

### 3.1.5 Bargaining power of suppliers

Medicine manufacturing is heavily dependent on the availability of important inputs, including the key starting materials (KSM) and active pharmaceutical ingredients (APIs), as well as specific manufacturing facilities [24]. The Administration for Strategic Preparedness and Response (ASPR) estimates that approximately 90% to 95% of generic sterile injectable drugs used for critical acute care in the United States (U.S.) rely greatly on KSM from China and India [24]. As an example, three out of six API facilities registered to manufacture fludarabine are from China [24].

Overall, the high reliance on specific areas for typical KSM and facilities indicates a high concentration of suppliers and their considerable bargaining power.

## 3.2 Competitive strategy analysis

Pfizer has mainly applied the product differentiation strategy and is well-known for its innovative therapies and medicines.

Pfizer has emphasized its product differentiation strategy to effectively compete in the industry through great investment in R&D, which includes a pipeline of innovative medicines and vaccines that will address inflammation and immunology, internal medicine, oncology, rare diseases, vaccines, and anti-infectives [25]. The R&D investment has increased over the years, reaching 11.4 billion U.S. dollars in 2022 [25]. By focusing on differentiation strategies, the company is able to make high profits and build a strong brand reputation, such as the success of the COVID-19 vaccine distinguishes it from other industry players. Besides the internal R&D, Pfizer has actively collaborated with universities, and biotechnology companies and made mergers and acquisitions (M&A) to differentiate its products [25].

The key profit drivers for Pfizer include the unmet demand for previously untreatable diseases, as well as their innovation strategy which involves large investments in internal R&D and M&A to acquire other advanced treatments and technologies. Risk drivers can be characterized as uncertainties arising from R&D, pressure from generics following patent expiration, strict government regulations and the potential disruptions of the supply chain.

## 4 Accounting analysis

The accounting analysis is mainly based on the information from the 10-K annual report of Pfizer for the financial year of 2019 to 2022 (FY19 to FY22) [25-28].

With its product differentiation and innovation strategy, Pfizer has become one of the leaders in the biopharmaceutical industry, which can be attributed to revenues and relevant R&D accounting estimates and policies. Also, Pfizer has a wide customer base as it sells its products worldwide to wholesalers, retailers, governments, pharmacies and others, which is potentially exposed to credit risk if customers are unable to make payments on time or in full and therefore, the relevant trade receivables will be affected. Moreover, the production and clinical trial require a substantial amount of property, plant and equipment (PPE). And the recent M&A strategies can be seen as an external investment in R&D to achieve the innovation strategy, making goodwill policies relevant.

### 4.1 Revenues

Pfizer has experienced restructuring during FY19-FY22. From the quarter of FY21, Pfizer considered its revenues from the Biopharma segment and PC1 segment (e.g.,

including revenues from contract manufacturing). Revenues from the sale of biopharmaceutical products increased during FY19-FY22, indicating benefits from the restructuring and innovation strategies implemented.

Pfizer recognises the revenues from the sale of products when the control over the products is transferred to the customer. Managers will consider several factors when determining when the customer has control over the product, including whether Pfizer has a current right to receive payment from the customer, whether the title has been transferred to the customer, whether significant risks and rewards have been transferred, and whether customer acceptance has been obtained.

Besides, the gross revenues will be adjusted for sales allowances, chargebacks, rebates, sales returns and cash discounts. To estimate the revenue deductions, relevant knowledge and judgment are necessary, including information regarding the contractual agreements and the historical creditworthiness of certain customers. The percentage of revenue deductions over revenues fluctuated during the year with an average of about 26% of total revenues., indicating the potential for managerial discretions in meeting certain financial targets, such as increasing the company's revenues gradually over time.

#### 4.2 Trade accounts receivables

Pfizer provides its products throughout more than 185 countries and territories and includes emerging markets in its growing profile. Estimating potential credit losses plays an important part in the operation of a company that works with a broad range of customers globally. The allowance for doubtful receivables is estimated based on historical experiences with customer characteristics, legal and regulatory risks, etc.

As a global corporation, Pfizer is potentially exposed to delayed payments from its customers in different areas. The allowance rate appears to decline in these years in Table 1. Although there may be a greater incidence of uncertainties and credit risks during COVID-19, the expansion of emerging markets should also lead to an increase in credit risks. Managerial discretion may be involved in the estimation of allowances. It is also possible that managers may have the incentive to overstate the receivables to appear financially strong to the public, so further analysis of receivables will be performed through the accounts receivable days in financial analysis.

**Table 1.** Allowance of trade receivables over FY19 - FY22.

(US\$million)	FY 2022	FY 2021	FY 2020	FY 2019
Allowance for Doubtful Receivables	449	492	508	493
Trade Accounts Receivables	10,952	11,479	7,913	7,930
Allowance Rate of Trade Account Receivables	4.10%	4.29%	6.42%	6.22%

#### 4.3 PPE and depreciation

PPE is reposted as the costs with significant improvements after purchase, less accumulated depreciation. Aside from land and construction in

progress, these assets are mainly depreciated by the straight-line approach.

According to Table 2, the depreciation for FY2022 can be higher if the depreciation rate in FY21/20 is applied to FY2022, and Pfizer's net income (NI) would be lower, indicating managers' intention to increase profits. The depreciation charge changed over these years, but within a relatively narrow range.

**Table 2.** Depreciation rate over FY19-22.

(US\$million)	FY 2022	FY 2021	FY 2020	FY 2019
Cost of PPE	31,448	29,955	28,406	30,756
Average cost of PPE: (calculated by year t + year t-1)/2	30,702	29,181	29,581	
Depreciation charge	1,455	1,491	1,333	1,326
Depreciation charge (in % of avg cost)	4.74%	5.11%	4.51%	

#### 4.4 Identifiable intangible assets and amortization

Pfizer's intangible assets include developed technology rights, brands, licensing agreements and in-process research and development (IPR&D). As IPR&D is subject to substantial failure risk, it can be impaired and/or be written off when related R&D is abandoned. IPR&D would not be amortized until the related R&D has been

approved and its useful life has been defined. Consequently, the uncertainties associated with IPR&D can potentially lead to accounting bias and inefficiency since the approval process can be time-consuming and risky.

Similarly, Table 3 illustrates that the amortization rate of the identifiable assets decreased in FY2022, possibly benefiting the NI. A low amortization rate can also maintain the value of the underlying patents and brands, potentially increasing Pfizer's competitive advantage.

**Table 3.** Amortization rate of identifiable intangible assets over FY19-22.

(US\$million)	FY 2022	FY 2021	FY 2020	FY 2019
Cost of Identifiable Intangible Assets	101,919	80,984	81,334	82,877
Average cost of Identifiable Intangible Assets: (calculated by year t + year t-1)/2	91,452	81,159	82,106	
Amortization charge	3,609	3,700	3,348	4,429
Amortization charge (in % of avg cost)	3.95%	4.56%	4.08%	

#### 4.5 Goodwill

Apart from internal R&D strategy, Pfizer has engaged in investments in external R&D through various M&A, making goodwill relevant.

Pfizer conducts an impairment test on its goodwill at least once annually. Whenever necessary, the company records impairment charges based on the amount by which the fair value of the goodwill exceeds its carrying value. The income approach is used to determine fair value, relying on the company’s internal forecasts, leading to potential accounting ambiguity. The firm has not disclosed any goodwill impairment disclosed during FY19-22.

Innovation and advanced technology can greatly contribute to Pfizer’s operating efficiency and profitability. However, the success of a product developed internally with high utility would be time-consuming and require a considerable investment in R&D expenditures. The acquisition will increase the efficiency of revenue generation and save potential R&D expenses and research time.

#### 4.6 Other accounting policies

R&D expenses comprise the majority of the company expenses, which are expensed as incurred. From FY22, the acquired in-process research and development (IPR&D) expense has been recorded separately from R&D costs (recorded as part of R&D expenses before). The separation can increase accuracy when the future capitalisation of internal R&D expenses takes place.

Overall, Pfizer has conducted some aggressive accounting policies when determining its receivables policies, but their accounting policies generally reflect and disclose the company's strategy and economic realities.

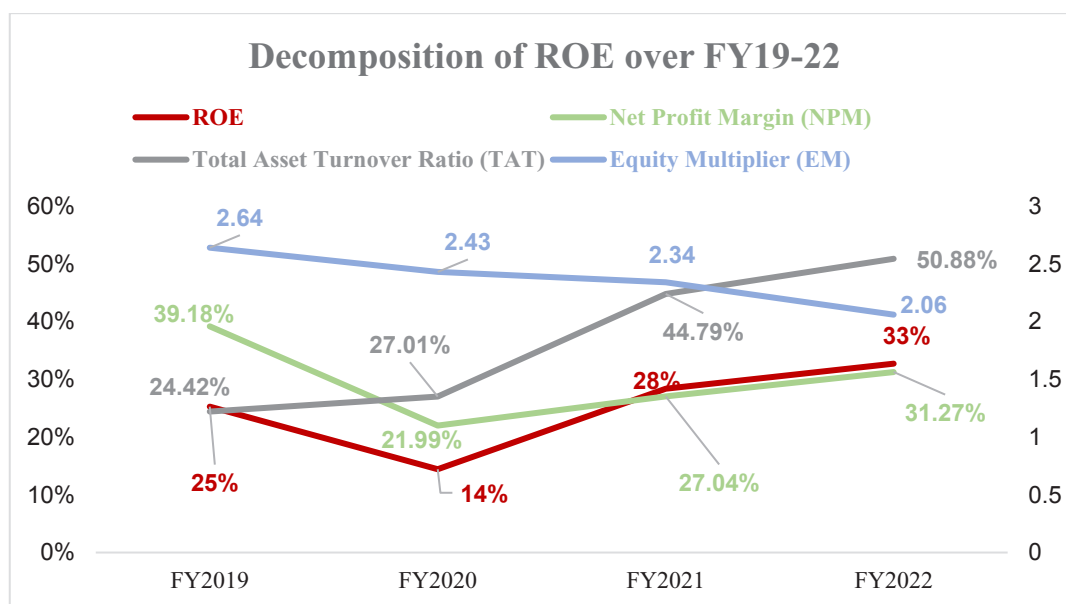
### 5. Financial analysis

#### 5.1 Ratio analysis

##### 5.1.1 Du-point analysis

Dupont equation is a comprehensive measure for analyzing company performance and profitability by breaking down ROE and showing how efficiently managers are using funds invested by the shareholders to generate returns. Figure 1 indicates ROE increased from FY21-22 after the decrease in FY20, showing an improved return on each dollar invested in equity. The average ROE of Pfizer (25.19%) during these years was slightly higher than that of the U.S. pharmaceutical industry (24.54%) [29]. The decrease in net profit margin (NPM) in FY22 greatly contributed to the decrease in ROE. During FY21-22, ROE improved mainly due to an increase in NPM and total asset turnover ratio (TAT).

The rise of NPM contributed significantly to increased ROE, which was reflected in an improved profitability ratio (29.87%) that outperformed that of the U.S. industry average (18.35%) [30]. Pfizer also increased its TAT, showing the ability of its assets to generate higher revenues through improved operational efficiencies. Because of the good asset management and sales growth, Pfizer (50.88% in FY22) had an advantage over the biotechnology & pharmaceuticals industry TAT in Q4 2022 (43%) [31]. The equity multiplier (EM) decreased during these years, reflecting a higher portion of equity financing and a lower portion of debt financing. Also, the decrease in leverage can be attributed to an increase in RE, decreasing the financial risk of repaying long-term debt. Pfizer’s average EM (2.37) was higher than that of the biopharma industry (1.7), showing a relatively low use of leverage [32].



**Fig. 1.** Decomposition of ROE over FY19-22.

### 5.1.2 Cash Conversion Cycle (CCC) analysis

Cash Conversion Cycle analysis helps to examine the efficiency of Pfizer's cash flow management and operational procedures (shown in Table 4).

The decrease in days accounts receivable (A/R Days) demonstrates that Pfizer has been more efficient in collecting payments from Pfizer's customers on time, resulting in a quicker conversion of sales into cash, benefits to cash flow and lower risks of bad debts. Credit management may be benefited from the change in collection policies change as a result of the company's restructuring.

The decrease in days accounts payable (A/P Days) can be attributed to Pfizer's lower bargaining power compared

with its suppliers. Increasing demand for certain raw materials puts Pfizer at a disadvantage when negotiating payment terms with its suppliers [26]. Due to supply delays, disruptions and shortages, Pfizer has been unable to negotiate longer payment terms [26].

The decrease in inventory days indicates improved efficiency in managing inventories, meaning quicker conversion of inventory into sales. Pfizer has improved its inventory management to respond to market demand, including the inventory write-off of COVID-related products in FY22 [26].

Overall, the decrease in CCC was mainly driven by the decrease in A/R Days and inventory days, showing Pfizer has improved its working capital management and generated cash from its operations more efficiently.

**Table 4.** Cash conversion cycle over FY19-22.

Cash Conversion Cycle = A/R Days + Inventory Days - A/P Days	FY2022	FY2021	FY2020	FY2019
Days Accounts Receivable Outstanding (A/R Days) = Account Receivables/Average Daily Sales = Account Receivables/(Sales/365)	40	52	69	78
Days Accounts Payables Outstanding (A/P Days) = Accounts Payables/Average Daily Cost of Goods Sold (COGS) = Accounts Payables/(COGS/365)	72	66	184	191
Inventory Days = Inventory/Average Daily COGS = Inventory/(COGS/365)	95	107	345	375
Cash Conversion Cycle	63	93	230	262

### 5.1.3 Liquidity analysis

According to Table 5, the current ratio (CA ratio) measures a company's ability to meet its current liabilities (CL). From FY19-21, Pfizer's CA increased, but declined

in FY21-22, showing a decline in short-term liquidity. Compared with the pharmaceuticals, biotechnology & life sciences sector (1.24), Pfizer had a lower CA ratio (1.22), suggesting it should pay more attention to managing its short-term assets [33]. The quick ratio experienced a similar pattern to the CA ratio, indicating a decreased

capability of a more liquid asset (cash, A/R and short-term investments) to meet the CL. The cash ratio also shows a decreased ability to repay CL exclusively with cash.

However, the increased interest coverage ratio indicates a strong ability to repay long-term debt and maintain financial stability.

**Table 5.** Liquidity and solvency ratio over FY19-22.

Short-term Liquidity Ratios	FY2022	FY2021	FY2020	FY2019
Current Ratio = Current Assets (CA)/Current Liabilities (CL)	1.22	1.4	1.35	0.91
Quick Ratio = (CA-Inventory)/CL	1.00	1.19	1.04	0.68
Cash to CL	0.01	0.05	0.07	0.04
Long-term Solvency Ratio:				
Interest Coverage Ratio = EBIT/Interest Expenses	30.11	15.67	6.05	8.85

Overall, Pfizer improved its ROE during FY21-22 mainly as a result of an increase in profit margin due to the huge demand in the market and the improved TAT. In FY19-22, working capital management was improved through receivables management and inventory management. Pfizer also improved its solvency but should focus more on improving its short-term liquidity.

## 6 Prospective analysis

Prospective analysis will of Pfizer will use discounted abnormal earnings (AE) valuation model to estimate its intrinsic value (IV), which is the sum of the beginning book equity value (BVE<sub>0</sub>) (the latest book value of equity) and the present value (PV) of the expected AE (difference between NI and the product of expected return and BVEs) [17].

### 6.1 Condensed balance sheet and income statement

The condensed balance sheet in Table 6 provides the beginning information for predictions, aggregately showing Pfizer's financial position by operating working capital (OWC), net long-term assets (NLTA), net debt (ND) and shareholder's equity [17]. The condensed income statement focuses on the key inputs to the NI, including sales, net operating profits after tax (NOPAT) and net interest expenses after tax (NIEAT) [17]. The condensed financial statements require fewer assumptions to forecast IV for Pfizer, thus resulting in a relatively more comprehensive prediction with fewer biases and estimation errors.

**Table 6.** Condensed balance sheet and income statement in FY22.

Condensed Balance Sheet of Pfizer in FY2022				NOTE	
Operating working capital (OWC):		(\$US million)			
Current assets		51,259			
less: cash and marketable securities		22,732		Cash and cash equivalents+Other investments	
		28,527			
Current liabilities		42,138			
Less: interest bearing current liabilities		2,945		Short-term borrowings	
		39,193			
OWC		-10,666		(CA–Cash and marketable securities)–(CL–Short-term debt)	
Net non-current assets :					
Total non-current assets		145,944			
Less: non interest bearing non-current liabilities		27,224		Total non-current liabilities-long term borrowings	
Net non-current assets		118,720		Total non-current assets-non interest bearing non-current liabilities	
Net operating assets		108,054		OWC + NLTA	
Shareholders' equity		95,916			
Net debt (ND)		12,138		Long term debt+short term borrowings-cash and marketable securities	
Net capital		108,054		Net debt+shareholders' equity	
Condensed Income Statement	FY2019 (\$US million)	FY2020 (\$US million)	FY2021(\$US million)	FY2022 (\$US million)	NOTE
Sales	40,905	41,651	81,288	100,330	
NOPAT (Net operating profit after taxes)	17,222	10,242	22,919	32,264	NI+NIEAT

Interest Expenses	1,574	1,449	1,291	1,238	
Interest Incomes	225	73	36	251	
Effective Tax Rates for GAAP Reported income	5.20%	5.30%	7.60%	9.60%	
Net interest expense after tax (NIEAT)	1,196	1,083	940	892	(Interest Expense-Interest Income)*(1-Tax Rate)
Net Income	16,026	9,159	21,979	31,372	

## 6.2 Forecast assumptions

The prediction of sales and NOPAT is imperative since it depicts the potential for revenue generation in the future.

Pfizer benefited from the COVID-19 pandemic due to the sales of COVID-related products through government contracts (Comirnaty vaccines and Paxlovid treatment products), which accounted for about half of the total revenues during FY21-22 [17, 25, 26].

Pfizer's revenues are expected to be adversely affected by the gradual recovery from the pandemic.

As for Comirnaty, the sales in FY23 are projected to be 64% of those in FY22, as sales of Comirnaty will continue to be based on traditional commercial markets

with the expiration of contracts and the inability to compete against new variants [25]. Under the traditional commercial markets, the average revenue growth rate of non-COVID-related products during FY15-22 (excluding the extremely negative figure in FY19) was 2.12%. Accordingly, Comirnaty's growth rate is assumed to increase based on the averaged historical growth rate from FY24 to FY27 (shown in Table 7). Similarly, FY23 is also expected to act as a transition year for Paxlovid, with 58% lower revenues than FY22, followed by a gradual recovering growth in the following years (shown in Table 7) [25]. For the non-COVID-related products, Pfizer's CEO stated 7%-9% revenue growth would be achieved in FY23, thus implementing 7% growth in FY23, but gradually decreasing the growth rate as the industry competes more vigorously and as patents expire [34].

**Table 7.** Revenues forecast over FY23-27.

Revenues Forecast	Historical Period				Forecast Period				
	FY2019	FY2020	FY2021	FY2022	FY2023	FY2024	FY2025	FY2026	FY2027
Growth rate of Comirnaty				2.79%	-64.00%	2.00%	3.00%	4.00%	5.00%
Revenues of Comirnaty (\$US million)		154	36,781	37,806	13,610	13,882	14,299	14,871	15,614
Growth rate of Paxlovid					-58.00%	2.00%	3.00%	4.00%	5.00%
Revenues of Paxlovid (\$US million)				18,933	7,952	8,111	8,354	8,688	9,123
Growth rate of non COVID-related Products	-23.75%	1.45%	7.25%	-2.06%	7.00%	1.17%	1.65%	2.14%	2.62%
Revenues of non COVID-related products (\$US million)	40,905	41,497	44,507	43,591	46,642	47,186	47,965	48,991	50,276
Total Revenues (\$US million)	40,905	41,651	81,288	100,330	68,204	69,179	70,619	72,550	75,013

In Table 8, NOPAT margin is assumed to increase based on the average NOPAT margin (32%) for FY19-22, reaching 36% in FY27. The average effective interest rate after tax over FY23-27 is assumed to be the average rate

in FY20-22, which is approximately 3.5%. The ratio of OWC and sales (-0.16), net operating asset (NOA) to sales (1.58), and NOA to shareholder's equity (1.13) is assumed to remain constant at the FY23 level in the following 5 years.

**Table 8.** Other assumptions over FY23-27.

	Forecast Period				
	FY2023	FY2024	FY2025	FY2026	FY2027
Sales (\$US million)	68,204	69,179	70,619	72,550	75,013
NOPAT Margin	32%	33.00%	34.00%	35.00%	36.00%
Effective interest rate after tax	3.50%	3.50%	3.50%	3.50%	3.50%

## 6.3 Valuation

Table 9 presents the condensed financial statements for the forecasting period. All balance sheet items present

numbers at the beginning of the year. Particularly, positive ND indicates that liquid assets (i.e., cash and its equivalent) are lower than its borrowings, and as analyzed in part 5, Pfizer should improve its financial liquidity.



**Table 9.** Predicted condensed financial statements over FY23-27.

Forecast of Pfizer Condensed Financial Statements (\$US million)	Forecast Period				
	FY2023	FY2024	FY2025	FY2026	FY2027
Condensed Balance Sheet					
OWC	(10,666)	(10,818)	(11,044)	(11,346)	(11,731)
NLTA	118,720	120,417	122,922	126,284	130,572
NOA	108,054	109,599	111,879	114,939	118,841
ND	12,138	12,311	12,568	12,911	13,350
Shareholder's Equity	95,916	97,287	99,311	102,027	105,492
Net Capital (NCAP)	108,054	109,599	111,879	114,939	118,841
Condensed Income Statement					
Revenues	68,204	69,179	70,619	72,550	75,013
NOPAT	21,825	22,829	24,010	25,393	27,005
NIEAT	425	431	440	452	467
Net Incomes	21,401	22,398	23,570	24,941	26,538

To estimate the equity value of a firm, the cost of equity ( $r_e$ ) is used to discount the AE to equity holders, calculated by using the capital asset pricing model (CAPM) as the sum of return of risk-free asset and premium for market risk of the underlying asset ( $r_e = r_f + \beta[E(r_m) - r_f]$ ) [17].

Pfizer's beta coefficient is 0.55, showing that Pfizer's stock is less volatile relative to the market [35]. The 10-year U.S. Treasury bond yield of 3.88% in 2022 is used as a proxy for the risk-free rate ( $r_f$ ), whereas the average market risk premium of 5.6% is applied in the CAPM [36, 37]. Consequently,  $r_e$  is calculated as 7% through CAPM.

Moreover, the average annual GDP growth rate in the U.S. during 2013-2022 (except 2020) is used as the proxy for the terminal growth rate ( $g = 2.67%$ ) in the AE model [38].

The equity value of Pfizer can be calculated through the AE model through the equation:

$$\begin{aligned}
 & BVE_{FY22} + \frac{NI_{FY23} - r_e \times BVE_{FY22}}{(1+r_e)} + \\
 & \frac{NI_{FY24} - r_e \times BVE_{FY23}}{(1+r_e)^2} + \frac{NI_{FY25} - r_e \times BVE_{FY24}}{(1+r_e)^3} + \\
 & \frac{NI_{FY26} - r_e \times BVE_{FY25}}{(1+r_e)^4} + \frac{NI_{FY27} - r_e \times BVE_{FY26}}{(1+r_e)^5} + \\
 & \frac{(1+g) \times (NI_{FY27} - r_e \times BVE_{FY26})}{(r_e - g)} \times \frac{1}{(1+r_e)^5} \quad (1)
 \end{aligned}$$

Table 10 provides information regarding the BVE, PV of predicted AE and terminal value (TV) of Pfizer during FY23-27. The estimated share price (IV = \$43.71) is predicted to be lower than the market share price (MV = \$50.23) on December 30 2022, indicating that the IV of Pfizer was overvalued [39]. The investment suggestion should be to sell Pfizer's stocks at the end of 2022.

**Table 10.** Valuation of Pfizer.

Intrinsic Value Calculation of Pfizer	FY2023 (\$US million)	FY2024 (\$US million)	FY2025 (\$US million)	FY2026 (\$US million)	FY2027 (\$US million)
Beginning Equity	95,916	97,287	99,311	102,027	105,492
NI	21,401	22,398	23,570	24,941	26,538
Normal Earnings = $r_e$ * Beginning Equity	6,714	6,810	6,952	7,142	7,384
Abnormal Earnings (AE) = NI - Normal Earnings	14,686	15,588	16,619	17,799	19,153
Discounted Abnormal Earnings	13,726	14,568	15,531	16,634	17,900
Terminal Growth Rate (g)	2.67%				
Terminal Value (TV)	323,801	TV = $\{[AE_{2027} * (1+g)] / (r_e - g)\} / (1+r_e)^5$			
Equity Value	498,077	Equity value = BVE2023 + Sum of Discounted AE + TV			
Number of shares (million)	11,396	at Dec 30, 2022			
Estimated share price (IV) (\$)	43.71				
Actual share price (MV) (\$)	50.23	at Dec 30, 2022	IV < MV	Overvalued MV	

## 7 Conclusion

Pfizer Inc. is well-known because of the successful publishment of the COVID vaccines and has attracted lots

of investors as its stock price had dramatically increased. A financial statement analysis may enable investors to gain some "inside Information" about Pfizer and help to mitigate investment bias. The business strategy analysis reveals the potential competition among the major players in the industry, and it emphasizes the importance of

Pfizer's differentiation strategy to maintain its competitive advantage in the industry. The accounting analysis indicates Pfizer's accounting policies and estimates have generally been consistent with its operating reality and strategy these years, apart from some possible managerial discretions (e.g., the estimation of revenue deductions and the allowance rates for trade receivables). The financial analysis discloses that Pfizer's return on equity was positively affected by the substantial increase in revenues and enhanced asset management. Moreover, Pfizer reduced debt financing and increased equity financing due to the increase in retained earnings. The working capital management has basically improved due to the increased bargaining power with respect to its customers, while the A/P days decreased because of the pressure from the supply chain. And Pfizer should also improve its short-term liquidity. The prospective analysis indicates an overvaluation of the market value at the end of 2022.

There are some limitations of the FSA. The analysis is predominantly backward-looking and is based on the periodic disclosure of financial reporting, lacking real-time information and the future strategy of the company. Also, the financial reporting is disclosed by the company's managers, and while FSA can facilitate the closure of the information gap, some important "inside information" is still not available to the public, making FSA biased. And personal judgements in FSA may also contribute to some estimation biases. Therefore, it is reasonable to conduct a comparative FSA between Pfizer and its peers in the industry, thereby identifying the relative competitive advantages and weaknesses.

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