Proceedings of the 2023 International Conference on Management Research and Economic Development
DOI: 10.54254/2754-1169/25/20230514

The Valuation Analysis of NEXT.PLC Based on the DCF Model

Xinyi Wang[1,a,*]

[1]*University of Manchester, Manchester, United Kingdom, M13 9PL*
a. njwangxinyi@163.com
**corresponding author*

Abstract: The discounted cash flow model (DCF) is also widely used to estimate the value of a company, and despite the simplicity of the DCF model, this valuation has certain drawbacks as the uncertainty of the estimate and the assumptions made when forecasting are not negligible. In this paper, financial information from NEXT.plc is used to carry out a business valuation and compare it with the current market capitalisation. The calculations lead to the conclusion that the original valuation performed by the DCF model is higher than the current market capitalisation of the company. The assumptions used in the valuation are subject to change with the actual economic environment, and therefore the results obtained are somewhat different from the actual. It is recommended that more understanding of the social and economic context be required when applying the DCF model to valuations.

Keywords: DCF model, NEXT.plc, valuation model, WACC

1. Introduction

With the introduction of the NEXT directory in 1988, an online presence in 1999, next-day delivery in 2000, and advancements in mobile and tablet technology today, NEXT has been at the forefront of retail development.

Most of the literature clearly illustrate the strategies of NEXT.plc change to improve the company commercial value. Few relevant studies using DCF model to show NEXT business valuation. The research methodology and empirical model we used to anticipate and analyse NXT.L's value is presented in the following section. The data sources are displayed in the third section along with a descriptive analysis of the major variables. The fourth portion contains our estimation results and a commentary. The entire paper is wrapped up in the last section.

2. Literature Review

Wigley's paper examines how diversity improves a successful U.K. clothing store. The NEXT business model and corporate development suggest that clothing retailers can maintain a competitive advantage by varying brand, product, channel, format, foreign market, and business support variables around their brand management competence. The paper presents a potential model for diversifying a modern clothes business [1].

Imam and Clubb analyse the use of valuation models by UK investment analysts through interviews with 35 sell-side analysts and 7 buy-side analysts, as well as a content analysis of 98 equity

DOI: 10.54254/2754-1169/25/20230514

research reports. The results show that analysts increasingly value the discounted cash flow (DCF) model, although they still rely on simpler valuation methods such as the price/earnings ratio. Limitations in the technical applicability of the DCF lead to reliance on valuation multiples and subjective judgement. Analysts prioritize credibility with buy-side clients, leading to a downplaying of unsophisticated valuation methods. Despite rarely being used to determine target prices and investment recommendations, the DCF model is commonly used to convey the analyst's research due to its flexibility and credibility. The study concludes that understanding social and economic context and motivations is crucial for understanding analysts' usage of valuation models, in addition to technical considerations [2].

Valuation is the process of estimating the price of a property by modelling market thought processes and historic data. The discounted cash flow (DCF) model is commonly used for valuation, but uncertainties can affect the accuracy of the model, including uncertainty in comparable data, market conditions, and specific inputs. Demirakos and Walker explore how uncertainty can be incorporated into the DCF model through the use of a probability-based valuation model, such as the Crystal Ball. This approach produces a range of possible outcomes, allowing for a better understanding of the upside and downside risks of the estimated price. This study provides valuable insights into the practical application of probability-based models for valuation and helps clients better understand the context of provided valuation figures [3].

Petersen, C., & Plenborg, T had a study which focuses on the methodological errors that when company valuated in practice. They find some methodological errors may cause estimated vaule have a difference with actual value. The results may influences the company future. Also wrong results may cause the company strength is overrated or underestimated. In order to avoid these errors, they use other difference valuation method. Some may have the same value. Due to research, different valuation may have different value most because of the methodological errors [4].

Florian Steiger argues that the DCF method is reliable approach for valuing companies, but it has some limitations that should be taken into consideration. First, discussing the theoretical foundation of the DCF model and how to utilized to estimate the present value of future cash flows. He based on the method to make some assumptions can be subject to bias and uncertainty, which may affect the accuracy of the company valuation estimates. Steiger still believe that DCF model is still a valuable method for company valuation even it has some limitations. More detailed analysis of a company's cash flow and it is useful for some company. He also suggest it is much better to use DCF model with other valuation methods can provide a more complete and accurate of company's value [5].

Also, this paper based on the annual report of NEXT.plc and use their data, information about their income resources and future strategies to analysis and make the valuation. There is a reason for the success of NEXT enterprises, based on the evidence presented above. DCF Model-related studies illustrate the credibility and uncertainty of the DCF model which comes from both theoretical and empirical study. However, practically all of these researches have been on business strategies, while there have been very few studies relating to company valuation. This is likely the case since company valuation demands an excessive amount of data and is difficult to manage. In addition, the majority of the material that is now available depicts the profitability of enterprises through the coping methods that firms employ in reaction to unstable economic conditions and market irregularities. To the best of our knowledge, there are few studies that investigate the value of NEXT and determine whether or not this valuation is affected by the aspects that are relevant. As a result, conducting research on the valuation of a firm is really necessary.

DOI: 10.54254/2754-1169/25/20230514

3. Data & Methodology

3.1. Data Source

The data in this paper is from NEXT.plc(NXT.L), a leading British clothing brand founded in 1982, offering a wide range of men's and women's casual wear, formal wear, shoes, accessories, fragrances, and skincare products, as well as children's and baby wear and related products. The data samples from 2015 to 2021 have covered 7 years of annual reports with target sizes of corporate income, operating expense, company assets, and liabilities.

The following information sources were used to prepare the evaluation: following process, compiled and reviewed regional, national, and local economic data. Among the sources utilised are from the internet. Comparative statistics on corporate sales transactions have been analysed. This comprised data gathering from the annual report and sale databases for publicly traded companies. We analysed NEXT's financial statements and tax returns from prior years to assess the company's current performance and make predictions for future income generation. Included in the financial statements is the company's historical income. Statements and balance sheets have been reconstructed to determine the profitability of the business and to offer inputs for the chosen business appraisal techniques.

To determine the business value accurately, the author used the company’s historical financial statements, such as its income statements and balance sheets. All financial values incorporated in this report are in millions of pounds.

Other assumptions used in this paper are in several parts. For example, rates part of the assumptions, some of which are derived from data from the company's annual reports, avoiding data from the epidemic period and calculating the average of stable data from previous years to be used to predict future data. Another part of the data is derived from some internet searches.

3.2. Theoretical Framework

Discounted cash flow (DCF) refers to a method of valuation that calculates an investment's value based on its anticipated future cash flows, analysing attempts to determine the value of an investment today, based on projections of how much money that investment will generate in the future [6]. Discounted cash flow analysis can also assist business owners and managers in making capital budgeting or operating expenditures decisions. Therefore we use the data to estimate future values of NXT.L, customer and other receivable days, trade payables and other liabilities days, future evaluation of clothing sales growth, the inflation rate from 2022 to 2025; DSO, DPO, D/E ratio, EBITDA, net income, NOPLAT, WACC.

4. Application of the DCF Model in the Valuation of NEXT

4.1. INPUTS

In this part, the author finds the main data we need to use in the article, such as the main income and the expense resources from the annual report form the NEXT.plc website [7]. Also we need assume some rate in further calculation.

DOI: 10.54254/2754-1169/25/20230514

Table 1: Input 1. [7].

Total Revenue		
Retail	£m/y	1,475.10
Online	£m/y	2,874.40
Other Income		
Other business activity	£m/y	276.40
Cost/Expense		
Operating Expense	£m/y	3,727.80
Cost of Sales		2,625.30
distribution cost		693.70
Administration		380.20
Impairment losses on customer and other receivables		28.60
Fixed Assets		
Value of FA EoY 2021	£m/y	1,574.60
PP&E (EOY)	£m/y	601.10
Depreciation	£m/y	111.00
Depreciation rate	%	7.05%
CAPEX		184.00
CAPEX Investment rate	%	3.80%
Tax		
Tax Rate		4.5%
Profit Tax	%	3.70%
Financing and BS items		
Debt	£m	2,106.00
Inerest rate	%	5.33%
Equity	£m	1,010.00
Cash	£m	199.90
Non-distributed Profit	£m	515.80

DOI: 10.54254/2754-1169/25/20230514

UK Risk Free Rate used in this valuation, which is searched from internet. The inventory increase rate is based on the inventory of NEXT from 2015 to 2020. The growth rate we assume is the same as the UK GDP growth rate [8].

Table 2: Inputs. [8].

Valuation Inputs		
UK Risk Free Rate	%	3.25%
Market Premium	%	6.10%
Compny Beta		1.37
Company D/E		2.09
Growth Rate	%	3.20%
Inventory Increase Rate	%	5.38%
Size Premium	%	4.80%

$$\text{DSO} = \frac{\text{Accounts Recievables} \times \text{Number of Days in a year}}{\text{Total Credit Sales}} \quad (1)$$

DSO, days sales outstanding, is measure of the average number of days that it takes a company to collect payment for a sale. A high DSO number suggests that a company is delaying in payments, which can result in a cash flow problem. Company who working with NEXT needs major change of 94 days to pay cash. The average DSO for apparel and footwear in recent years has been 98 days. Thus, the DSO for NEXT is a "good" number [9].

$$\text{DPO} = \frac{\text{Accounts Payable} \times \text{Number of Days in a year}}{\text{COGS}} \quad (2)$$

DPO, day payable outstanding, is a financial ratio that indicates the average number of days that a company takes to pay its bills and invoices to its trade creditors. This ratio is usually computed annually. A higher value of DPO means the company need a long time to pay its bills to realize profit maximum. For NEXT, it just needs 38 days around to pay the bill, which illustrates the high liquidity [10].

Table 3: Working.

Working		
Customer and Other Receivable	£m/y	1,280.90
Customer and Other Receivable Days	days	94.25
Trade Payables and Other Liabilities	£m/y	350.00
Trade Payables and Other Liabilities days	days	33.00

Using the distinction between receivables and payables to calculate the net working capital, let the investor know the money available for the NEXT current and short-term liabilities.

And in the next part of inputs, there are all the growth rates in revenues, and due to the inflation rate, the price may change. Based on the above assumption, it can calculate the operation of this company.

DOI: 10.54254/2754-1169/25/20230514

Table 4: Inputs.

Clothes sales growth	units	2021(base year)	2022	2023	2024	2025
Retail	%	-48.00%	4.00%	2.00%	0.50%	0.25%
Online	%	10.00%	3.00%	1.00%	0.30%	0.15%
Inflation rate						
Inflation	%	2.50%	6.40%	5.70%	2.90%	1.30%
Wage	%	3.30%	4.75%	3.25%	2.75%	1.20%
Price indices						
Inflation		100.00%	106.40%	112.46%	115.73%	117.23%
Wage		100.00%	104.75%	108.15%	111.13%	112.46%
Debt						
Debt rate	%		2.08%	4.19%	6.43%	8.88%
Debt	£m	2,106.00	2,149.71	2,194.29	2,241.33	2,293.11

4.2. Balance Sheet

Based on our assumption, the author revealed the firm's assets, liabilities, and owners' equity to build the whole sheet. We can use financial ratios to analyse the balance sheet, such as the D/E rate.

$$Debit\ to\ Equity\ = \frac{Total\ Debt}{Total\ Equity} \tag{3}$$

The D/E ratio is a measure of the extent to which a company can cover its debt. The higher the D/E, the riskier the business. A high D/E ratio suggests that a business may not be in a good financial position to cover its debts. However, industries with a high D/E ratio are typical, because they spend more money on property and equipment [11].

We first calculate the total assets, use the current assets add the non-current asset, then calculate the total equity and liability and check whether they are balanced or not. The debt assumes it is constant in future five years.

Table 5: Balance Sheet.

Balance Sheet						
Assets	£m	2021	2022	2023	2024	2025
Current Assets		2,407.20	2,927.21	3,705.17	4,763.11	6,225.05
Right of Return Assets		24.80	25.05	25.30	25.55	25.81
Other Financial Assets		35.50	35.86	36.21	36.58	36.94
Receivable		1,280.90	1,310.85	1,412.01	1,522.71	1,648.18
Cash		433.00	888.40	1,528.71	2,437.51	3,733.51

DOI: 10.54254/2754-1169/25/20230514

Table 5: (continued).

Inventory		633.00	667.06	702.94	740.76	780.61
Fixed Assets		1,574.60	1,655.82	1,734.95	1,813.18	1,892.32
Total Assets		3,981.80	4,583.03	5,440.12	6,576.28	8,117.37
Equity and Liability	£m	2021	2022	2023	2024	2025
Trade Payables and Other Liabilities		350.00	252.55	266.94	274.68	278.25
Debt		2,106.00	2,149.71	2,194.29	2,241.33	2,293.11
Total liability		2456.00	2402.26	2461.23	2516.02	2571.37
Non- Distribution Profit		515.80	1,170.77	1,968.89	3,050.27	4,536.00
Shareholder Equity		1,010.00	1,010.00	1,010.00	1,010.00	1,010.00
Total Equity& Liabilities		3981.80	4583.03	5440.12	6576.28	8117.37
D/E Ratio		2.43	2.38	2.44	2.49	2.55

In this sheet, we also calculate the D/E ratio, which uses the total debt to divide the shareholder equity. Then the solution will be calculated, and the rate is 2.43 in 2021. The D/E for NEXT is around 2.5. It is a little bit high, because of their significant capital investment programme, including a highly automatic warehouse and modernising their website software.

4.3. Income Statement

$$\text{EBITDA} = \text{Net Income} + \text{Interest} + \text{Taxs} + \text{Depreciation} + \text{Amortization} \quad (4)$$

EBITDA is earnings before interest, taxes, depreciation, and amortization, and this formula is used to evaluate a company's operating performance. The intention of removing elements from consideration is left up to the discretion of business owners. The owners can modify the loan financing, depreciation methods, and taxation to some extent. EBITDA can give analysts a quick estimate of the value of a company [12].

Table 6: Income Statement.

Income Statement	£m	2021	2022	2023	2024	2025
Revenues		4625.90	5076.49	5468.23	5896.94	6382.84
Costs/Expense		3,978.83	4,231.78	4,472.19	4,605.94	4,672.94
Operating Expense		3,727.80	3,966.38	4,192.46	4,314.04	4,370.13
EBITDA		898.10	1,110.11	1,275.76	1,582.90	2,012.72

DOI: 10.54254/2754-1169/25/20230514

Table 6: (continued).

D&A		176.00	188.41	201.69	215.91	231.13
Interest		112.25	114.58	116.96	119.46	122.22
EBT		609.85	807.12	957.12	1,247.53	1,659.37
Tax expense		145.60	152.15	159.00	166.15	173.63
Net Income		464.25	654.97	798.12	1,081.38	1,485.74
Net Profit Margin		10%	13%	15%	18%	23%

4.4. Cash Flow Statement

A cash flow statement tells owners how much cash is entering and leaving the business in each period and making sure the company has enough cash to keep operating. Also, helping owners know the company's liquidity; and showing managers the ability to pay off debts as they come due; helping the company to fund its operating expenses and pay down its debts [13]. The cash flow is equal to the net income minuses the sum of depreciation and administration, CAPEX and the change in working capital.

As such, investors can use this statement to determine the value of a company' stock and help them make a decision about their investments. Positive cash flow indicates that a company's liquid assets are increasing. At the same time, companies with strong financial flexibility can take advantage of profitable investments.

Table 7: Working Capital.

Working Capital	£m	2021	2022	2023	2024	2025
Customer and Other Receivable		1280.90	1310.85	1412.01	1522.71	1648.18
Trade Payables and Other Liabilities		350.00	252.55	266.94	274.68	278.25
Working Capital		930.90	1058.30	1145.06	1248.03	1369.92
Changes in WC			127.40	86.76	102.96	121.90

Table 8: Cash Flow.

Cash Flow	£m	2021	2022	2023	2024	2025
Net Income		464.25	654.97	798.12	1,081.38	1,485.74
D&A		111.00	118.82	127.20	136.17	145.77
CAPEX		184.00	190.99	198.25	205.78	213.60
Change in WC		-	127.40	86.76	102.96	121.90
Cash Flow		391.25	455.40	640.31	908.80	1,296.00

4.5. Valuation

Turn to the valuation, this sheet includes the EFCF, WACC, and valuation.

We use the operating profit multiples the profit rate we assume in the inputsT1 to calculate the NOPLA.

DOI: 10.54254/2754-1169/25/20230514

Then add the Depreciation and amortization(D&A) and CAPEX calculated in the PP&E Sheet(see in the Appendix) after that, minus the change in working capital. Finally, the FCF was calculated.

$$\text{NOPLAT} = \text{Operating Income} \times (1 - \text{Tax Rate}) \quad (5)$$

Net operating profit less adjusted taxes (NOPLAT) is a financial metric that can calculate a company's operating profits after adjusting for taxes. This was used to measure the profit. NOPLAT may help investors know a firm's core operations [14].

Table 9: EFCF.

EFCF	£m	2021	2022	2023	2024	2025
Operating Profit		905.40	1,117.41	1,283.06	1,590.20	2,020.02
NOPLAT		871.90	1076.07	1235.59	1531.36	1945.27
D&A		111.00	118.82	127.20	136.17	145.77
CAPEX		184.00	190.99	198.25	205.78	213.60
Change in WC		0	127.40	86.76	102.96	121.90
FCF		798.90	876.49	1077.78	1358.78	1755.54

About WACC, first calculate the cost of equity and the cost of debt. Then use the rates from Inputs T1 to calculate the WACC. Finally, there is the valuation part, which uses the formula to calculate the discount factor for each year.

$$\text{WACC} = \left(\frac{\text{E}}{\text{V}} \times \text{Re}\right) + \left(\frac{\text{D}}{\text{V}} \times \text{Rd} \times (1 - \text{Tc})\right) \quad (6)$$

The weighted average cost of capital (WACC) represents a firm's average after-tax cost of capital from all sources, including common stock, preferred stock bonds, and other forms of debt. WACC could measure a company's cost of borrowing money because the formula uses both debt and equity. A lower WACC shows a healthy business may attract investors at a lower cost. In the contrast, a higher WACC means that companies are riskier and need to compensate investors with higher returns [15]. The WACC (12.21%) is a little bit higher than it true WACC. The beta of the company illustrates the current stock price volatility, and this figure is fluctuated with the market. Also, the beta here is used as a risk, which it actually is not.

Table 10: WACC.

WACC	£m	2021
UK Risk Free Rate		3.25%
Market Premium		6.10%
Company Beta		1.37
Company D/E		59.40%
Growth Rate		3.20%
Size Premium		4.80%
Inflation Rate		3.70%
Cost of Equity		16.407%
Cost of Debt		5.33%
WACC		12.21%

DOI: 10.54254/2754-1169/25/20230514

Adding all of them together using the discount factor for each year, they are the net present value projection period. At same time, the sheet figures out the discount cash flow per year, and then it could figure out the NPV continuation period. Add the two NPVS together to find the enterprise value. The value is 17370.043 million pounds, but it is much higher than the current value. The value of debt stays the same, and then subtract value of debt from enterprise value to get value of equity. Finally, valuating the company's future D/E ratio, it is 13.80%. The NPV estimated here is much larger than the current one.

Table 11: Valuation.

Valuation	£m	2022	2023	2024	2025
Discount Factor		0.944	0.841	0.750	0.668
Discount Cash Flow		827.45	906.79	1018.86	1173.16
NPV Forecast Period		3926.26			
NPV Continuation Period		13443.778			
Enterprise Value		17370.043			
Value of Debt		2,106.00			
Value of equity		15264.043			
D/E		13.80%			

5. Conclusion

Valuation is meaningful for a company, because this helps the managers to evaluate the company correctly and predict their future development. Also, this could help the company modify their strategy and attract more investment.

The article used the DCF model to value NXT.L, which turned out to be well above the company's market cap. Thus, this paper suffers from a deficiency caused by the lack of data, and the assumptions are overly idealized.

However, there are some caveats: first, the data form the annual reports of NEXT.plc may not be comprehensive and may be ignored in the valuation process. Second, some of the rate assumptions are too good. Part of the change trend of rate will be changed due to the economic situation of the environment. The change of rate cannot be predicted during the valuation, which will affect the accuracy of the valuation to some extent. Third, the methodological errors may occur in process. At same time different valuation method may cause different results. And only using DCF model have some limitation, it is better to combine with other methods. Fourth, during the valuation process, we cannot predict whether some future emergency, such as COVID-19, will occur. Sudden outbreaks of disease or social change can also affect a company's growth and valuation. Fourth, the methodological errors buy using different valuation may cause some difference

References

[1] *Wigley, s. M. (2011). A conceptual model of diversification in apparel retailing: the case of next plc. Journal of the textile institute, 102(11), 917-934.*

[2] *Imam, S., Barker, R., & Clubb, C. (2008). The use of valuation models by UK investment analysts. European accounting review, 17(3), 503-535.*

DOI: 10.54254/2754-1169/25/20230514

[3] Demirakos, E. G., Strong, N. C., & Walker, M. (2010). Does valuation model choice affect target price accuracy?. European Accounting Review, 19(1), 35-72.
[4] Petersen, C., & Plenborg, T. (2009). The Implementation And Application Of Firm Valuation Models. Journal of Applied Business Research (JABR), 25(1). https://doi.org/10.19030/jabr.v25i1.1044.
[5] Steiger, F. (2010). The validity of company valuation using Discounted Cash Flow methods. arXiv preprint arXiv:1003.4881.
[6] Data Source, Online: https://www.investopedia.com/terms/d/dcf.asp
[7] Data Source, Online: https://www.nextplc.co.uk
[8] Data Source, Online: https://www.kroll.com/-/media/cost-of-capital/uk-normalized-rf-update-30sep2022.pdf
[9] Data Source, Online: https://www.investopedia.com/terms/d/dso.asp
[10] Data Source, Online: https://www.investopedia.com/terms/d/dpo.asp
[11] Data Source, Online: https://www.investopedia.com/terms/d/debtequityratio.asp
[12] Data Source, Online: https://corporatefinanceinstitute.com/resources/valuation/what-is-ebitda/
[13] Data Source, Online: https://www.investopedia.com/terms/c/cashflowstatement.asp
[14] Data Source, Online:https://www.investopedia.com/terms/n/noplat.asp
[15] https://www.investopedia.com/terms/w/wacc.asp