Business Valuation Analysis: Taking Lululemon as an Example

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Abstract. Lululemon's unique and innovative brand culture and concept, combined with the pursuit of healthy living and the globalization of sport, has led to the company's global growth. Lululemon's creative fabric technology and design also enhanced its competitive edge. From the perspective of politics, economy, society and technology, due to the rapid expansion and emerging yoga culture and heathy life concepts, it might be overvalued according to its leading and fast-growing status in the athletic clothing market. In this paper, P/E ratio, forward P/E ratio, EV/EBITDA ratio and discounted cash flow model are adopted to value the company. The results of valuation ratios of Lululemon are higher than other competitors, and the data generated from the discounted cash flow model is lower than its current market value, indicating that the price of Lululemon is indeed overestimated. This paper would provide the investors an overview of Lululemon's brand history, market position and basic valuation statistics.

Keywords: Lululemon; Corporate valuation; PEST; Competition analysis; Athletic Apparel.

1. Introduction

With Nike, Adidas and Under Armour growing fast, a small shop specializing in yoga trousers opened up in Vancouver in 1998. It started when its founder Chip Wilson saw that the women in his yoga classes did not have the right yoga clothes. At the time, many trainees came to class in clothing that was unsuitable for workouts and stretching. Chip Wilson, who started out as a sports equipment manufacturer, immediately saw a new business opportunity and started to try out the niche market of yoga as an entry point and improved on the functional shortcomings of yoga clothing on the market by adding technological elements and entering the market of tailor-made clothing for women's low intensity exercise at 2 to 3 times the price. To test his first product, Wilson targeted yoga teachers and students and developed them as his first customers, using their feedback to improve the product. Because the material was comfortable and suitable for movement, Lululemon soon became a hit with women. In the shortest possible time, Lululemon dominated the athleisure market in Canada and the United States and was even recognized as a synonym for the athleisure trend. Despite fierce competition from other retailers, Lululemon has seen explosive growth over the past 20 years or so, growing from $41 million to $3.3 billion in revenue between 2004 and 2018. Even in the midst of an epidemic where Nike, Adidas, etc. are not doing well in terms of revenue, Lululemon was able to expand at an unparalleled rate. Lululemon outperformed experts' predictions for the FY2020 with sales that increased 11% to a historical $4.4 billion, a gross margin of 56%, and a net profit that decreased 8.6% to $589 million.

The real market worth of Lululemon in the athletic apparel sector will be thoroughly evaluated in this article. The assessments are made in light of the outcomes of various valuation techniques, opinions from the Politics, Economic, Society, and Technology (PEST) standpoint, an analysis of Lululemon's main areas, and a discussion of Lululemon's position in the market rivalry. The analysis's findings could assist stock investors and traders develop their investment strategies for trading Lululemon stock by serving as effective valuation benchmarks.

2. Literature Review

This literature review investigates the importance of corporate valuation by differentiating between distinct valuation methods in the public markets. Also, the accuracy and efficiency of different valuation models would be explored by reviewing the arguments and evidence from existing research based on both theoretical discussion and listed corporations in the market.

2.1 The materiality and methods of corporate valuation

Giving owners, future purchasers, and other relevant parties an approximation of a business's value is the objective of corporate valuation. There is little literature describing its impact on firms in the industry in terms of industry valuation. Foucault and Fresard argue that market valuations of peers can provide additional information to company management. They point out that peer valuation implies growth opportunities for companies and that peer valuation provides additional information to company management. They suggest that peer group valuations imply growth opportunities for companies and that an increase in peer group valuations will encourage companies to expand their investments [1]. According to Fernández et al., the corporate valuation methods could be generally divided into four dimensions: balance sheet-based methods, income statement-based methods, good-will based methods and cash flow discounting-based methods [2-6].

The balance sheet-based methods, by evaluating the company's assets, they strive to ascertain the company's worth. These are conventional approaches that presume a firm's worth is mostly determined by its balance sheet. They appraise the valuation from a stationary point of view, failing to consider the firm's potential future transformation or the temporary value of money. The most popular methodologies that are widely used by investors are income statement-based and cash flow discounting-based methods. The former approaches aim to quantify the firm's worth based on the magnitude of its sales, revenues, or other characteristics. Cement firms are sometimes promptly evaluated by multiplying their yearly metric tonnage output capacity by a ratio (multiple). Multiples are a topic that obtains a significant amount of emphasis in valuation textbooks [7-9]. Since, the multiples selected among comparable firms, the use of multiples is often referred to as relative value. Many corporate indicators could be used in the construction of multiples such as historical earnings, EBITDA, EBIT, cash flows and sales etc. Liu et al. investigated the valuation efficiency of a large list of value drivers [10]. Opposite to the widely held notion that each industry utilizes its own set of "optimal" multiples, the aggregate rankings are seen across nearly all of the industries studied. According to experimental observations, forward-looking multiples are superior value forecasters. For instance, Jing Liu, Doron Nissim, and Jacob Thomas analyzed historical and forward industry multiples for a collection of enterprises listed on the New York Stock Exchange, the American Stock Exchange, and the Nasdaq [10]. They contrasted the features and performance of these multiples. The variance of historical PE ratios was approximately double that of one year forward PE rates when they contrasted specific businesses to their sector mean.

Rappaport proposed a discounted cash flow model (DCF) based on free cash flow (FCF) for enterprise valuation [11]. According to Jensen, free cash flow is the cash flow generated by a business that is left over after reinvestment needs have been met [12]. Corporate managers will hold more of this free cash than is required by the firm to satisfy personal interests, including allowances, on-the-job spending, private gains, or to seek overinvestment. In situations where there are agency problems and governance deficits, firms will hold more cash. Ample cash holdings allow firms to engage in more investment acquisitions [13]. With abundant cash holdings, corporate managers are able to fund projects without external financing, thus avoiding market regulation. For the cash flow discounting-based methods, the DCF evaluation is a potent technique that is applied to price initial public offerings (IPOs), other assets, and corporate valuations. It is regarded to as "the core of most corporate capital-budgeting systems" given that it is such an effective financial instrument that specialists in finance companies, consultancies, and administrators employ it frequently for a variety of purposes [14]. The basic formula of DCF model is:

$$Value = \sum_{t=0}^{n} \frac{FCF_t}{(1+r)^t} + TV \tag{1}$$

where: FCF_t is the future free cash flows of a company for a scenario of the next five to ten years; r is the discount rate often using weighted average cost of capital (WACC); TV (terminal value) is the net present value which covers all the future cash flows after the scenario. Another two widely used methods are weighted average cost of capital (WACC) and capital asset pricing model (CAPM). The WACC is established by dividing the funding sources by their charges after weighting them based on the economic organizational structure. The CAPM indicates the yield that traders need to absorb the risk of owning a share of a firm. This desired return, which is equal to the firm's cost of equity, is the return on equity (ROE) that traders would like in exchange for taking on the risk of owning the securities [15].

2.2 The valuation accuracy

For example, P/E and P/B are two popular multiples. The accuracy and usefulness are significantly dependent on the relevance or comparability of its comparable firms. Therefore, many factors could influence the performance of the benchmark including risk, size, ROE and strategy. Alford evaluated a range of factors for the comparable companies. According to his observations, the P/E ratio and size cross-sectional variations are mostly captured by industry involvement, while ROE has little incremental predictive power than industry involvement [16]. Bernard claims that future rates of profitability should account for the variation in P/B ratios, but he finds that when existing profitability is taken into account, the relationship between the two is only weakly correlated [17]. Kaplan and Ruback believe that the results provided by DCF and P/E methods are efficient [18]. Based on a sample of 45 New Zealand public firms, Berkman et al. compared the market prices with the data generated from DCF and P/E models, concluding that these two methods have similar accuracy after appropriate adjustments [19]. Demirakos et al. suggests that researchers have distinct preference under distinct situation. For instance, DCF model is suggested to be used much more frequently in the evaluation of small firms, high risk firms and firms with less industry peers. Also, P/E model is found to be more frequently used in bear market [20]. When researchers are using multiples, some of them may select some specific firms as the comparable firms, while others may select the whole industry. Cooper and Cordeiro argue that there are two main characteristics of employing a whole industry as the comparable group [21]. It utilizes all the data from the multiples of the businesses in the industry and does not rely for the selection of a method to choose a smaller sample. The application of more information is not always preferable. Extending the number of comparable businesses may impair accuracy if multiples with little additional information about a valuation are given more weight at the penalty of those with more information.

3 PEST Analysis

3.1 Politics

Together with the emergence of diverse office policies, the internationalization of sport, driven by the popularity of "healthy lifestyles" and the need to take care of the human body, is driving the growing demand and the development of the sector. The sportswear and sportswear sector has profited recently from shifting customer preferences. A rise in physical activity participation can be attributed to a greater interest in health and wellbeing. Men and women with busier schedules than ever before are also demanding more garments that are both fashionable and practical. The sudden outbreak of the epidemic has led many companies around the world to actively look for new ways of working, with many opting for home working or hybrid working for the sake of the health status of their employees and the government's epidemic prevention measures. This has allowed employees to spend more time at home and take more care of their health. Fitness at home has also made the sports market a new growth point in terms of purchasing power during the epidemic. Recently, participation in sports, anaerobic, ball games and aerobics has become more diverse. Squash, baseball, table tennis, aerobics and yoga have seen a significant increase in the share of spending by the workforce.

3.2 Economy

Lululemon strengthens its position in the sportswear market through production, marketing and branding concepts, and accelerates its growth in markets including developing countries such as

China. By the end of 2021, they possessed 574 locations spread over 17 different nations. In terms of the number of the company-operated stores, China is the second largest market of Lululemon. Ken Lee, General Manager of Lululemon Asia, said the brand already has a number of showrooms in Singapore and Shanghai and Hong Kong, where it has a number of showrooms not only to sell a small range of products but also to communicate with customers, run events and offer yoga classes, a usual strategy for Lululemon to test the market. According to global market research firm Mintel Group Ltd, around 10 million people in China are currently involved in the practice of yoga, which is growing at three times the rate of the US. "Members in their 40s don't care about fashion, they just want to dress comfortably, while those 26 to 35-year-old yogis are very fashionable." Lee believes that yoga is becoming the cathartic method that the Chinese middle class is looking for to satisfy their spiritual life, slow down and balance their focus outside of their material life. According to iiMedia Research, in 2020 the global sportswear market will reach US$188.2 billion in revenue in 2020 and show a continuous growth. The global sportswear market is expected to reach US$207.79 billion by 2025, up 10.41% from 2020. Lululemon provided 29000 employments including 17% of outside of North America.

3.3 Society

In just a few short years, Lululemon has emerged as the sportswear brand of choice for young women in North America, thanks to its "women's" yoga apparel niche. The surprise is that Lululemon has been rewarded with venture capital. The menswear business and international markets were catalyst for its growth, compared to yoga apparel's traditional the male segment is more loyal once they identify with the brand than the traditional consumer segment of young women The men's line is a key investment area. With the men's line as a key investment area, Lululemon aims to doubling sales of men's products by 2023. This translates into annual revenues of more than $1 billion in this area. Men's clothing earnings in fy2018 made up 21% of all sales, or more than $600 million. With the plentiful supply of the market mechanism and the growth of the middle class, individuals have begun to charge customers for design, advertising, social characteristics, psychological elements, and other things outside the basic functions of products. This has led to greater upgrades in concept development and aesthetics and mildly increased costs that are completely acceptable to the average middle class. The high-end reputation of Lululemon is in large part due to its design.

3.4 Technology

Via the use of fabric technology and innovative design, Lululemon has conquered the barrier of functional design in sportswear. Thanks to the anorexia of the fabric stretch, it resolves the issue of concealment when stretching and prevents the display of flesh tones during various yoga positions. The issue of stitching the cloth is resolved by an equipment that was brought from Japan, keeping the seam lines visible on the exterior so that they do not scrape against the skin when moving. In addition, the seam lines are visible on the exterior to emphasize the body's shape in a linear pattern, giving the legs and hips a better appearance. In 1998 Chip Wilson attended a yoga class in 1998. However, he found that most of the participants were wearing cotton-polyester blends, which did not fit well, did not wick well and even had an embarrassingly see-through appearance. Wilson then invented a black, form-fitting yoga training pant for women using a textile material that was both breathable and comfortable. Wilson's approach was groundbreaking. Before Lululemon, retailers made men's workout clothes in smaller sizes and matched them with women's colors to make women's workout clothes. Wilson believed that women did not want to work out in ill-fitting t-shirts. Wilson was directly in charge of creating the apparel and making adjustments based on suggestions from yoga practitioners at Lululemon's classrooms. The design takes into account the shape of the body: for example, a looser tank top reveals a very sexy band, while a tighter tank top is longer so that it can be worn with yoga trousers to cover some of the hips and is more suitable for outside the gym. The most well-known are the Groove pants and the Y-tank, which are unique and good looking, and the Lululemon "Reversible" and "Reflective", which are very common in their products and immediately beat the monotonous cotton yoga and leisure products in terms of technology, practicality and appearance. The diversity of the products prevents people from defining lululemon as a product for rich, thin, rich people. Many celebrities wear lululemon because of its design and materials, comfort and shape. The celebrities are also trendsetters, making the brand even more popular. Moreover, the company is currently considering big data technology in order to provide personalized services.

4. Core Industry Secotions

4.1 Athletic apparel

This brand started with yoga wear and focuses on the women's sports market initially. Women in their 20s and 30s are increasingly looking for the 'athleisure' look, buying bottoms to wear to the gym, to run errands and to brunch. Yoga clothing brand Lulu Lemon has stood out from the rest of the sportswear brands in just a few years. Wilson had accumulated some fortune from his prior businesses, but the assets were not endlessly available. Purchasing high-quality supplies and equipment from Japan was quite costly; hence lululemon initially pressed its resources into yoga trousers, in black only, in 5 models, in 4-5 sizes each. Products including the sports coat CitySweat were launched, as well as the take the moment capsule collection with designer Robert Geller. In August 2017, lululemon began rolling out a trainer collaboration with Los Angeles-based sneaker manufacturer Athletic Propulsion Labs in some of its U.S. shops. Lululemon provides a broad selection of clothing and accessories. The clothing selection comprises products like pants, shorts, shirts, and jackets made for healthy lifestyles, including athletic pursuits like yoga, jogging, training, and the majority of other sweating hobbies.

4.2 Fitness Related Products

In addition, Lululemon sells a variety of footwear and accessories for athletes. Along with women's yoga clothing, the brand also sells sports equipment and accessories including backpacks, caps, gloves, towels, yoga mats, and sports water bottles. Lululemon anticipates that through expanding across various product categories, the retail selection will continue to grow. Lululemon acquired Curiouser Products Inc., dba MIRROR, in the second quarter of 2020. A firm called MIRROR provides in-home fitness services with an interactive exercise environment that offers both live and recorded lessons. With the addition of MIRROR, the digital sweatlife services are strengthened. Both new and returning Lululemon customers can now access immersive, tailored in-home sweat and relaxation training.

5. Competition analysis

Athletic apparel market competition is primarily driven by brand awareness and image, as well as quality, innovation, design, distribution, and pricing. In terms of competition, the athletic apparel is a highly aggressive market. It involves escalating rivalry from well-known businesses that are growing the manufacturing and marketing of performance items, as well as from often appearing new players in the market. Lululemon compete directly with athletic apparel wholesalers and direct sellers like Nike, Inc., adidas AG, Under Armour, Inc., and Columbia Sportswear Company. Lululemon also face competition from merchants who have emerged to sell women's sports clothing, such as The Gap, Inc. (which includes the Athleta brand), Victoria's Secret with its sport and lounge selection, and Urban Outfitters, Inc. Lululemon's stock has raised more than three times the S&P 500. Its share price has also headed to beat the industry index in 2018, jumping 54.7%. Currently, the company is ranked third in the athletic footwear sector in terms of market capitalization, behind giants Nike and Adidas. Lululemon currently has more than 460 shops worldwide, including 28 shops in the Chinese market. According to market research firm ThinkEquity Partners, A pair of sweatpants from Lululemon charges approximately US$92, which is at the high end of the sports clothing market. Sweatpants from Nike cost about US$60, while those from Under Armour only cost US$70. The upper end of the apparel industry has suffered immensely during the economic slump, but Lululemon, despite its expensive price, is a trendy brand, closely associated with the prominence of sports like yoga, and many people buy Lululemon as a daily wear, revealing that they are in a class of their own, but at an affordable price point compared to high-end clothing, thus the selling prices is a great advantage. To persuade male customers to reject the "male DNA" of sporting goods companies like Nike, in order to produce technologically advanced items, Lululemon started to step up its research and development actions. It now combines cutting-edge technologies including mechanics, neurology, and behavioral psychology. The US shoe market is fiercely competitive, governed by industry heavyweights like Nike, Adidas, and Under Armour that have mastered a huge spectrum of production technologies. Consumers have not yet experienced any shocks in the lululemon shoe industry thus far. Now Nike and Adidas are also looking at the yoga apparel sector and have launched interactive projects such as teaching classes. German sportswear brand Puma has even entered the race with its Puma Studio collection, hip-hop yoga classes at Keep and hip-hop yoga parties offline.

6. Valuation

6.1 P/E, forward P/E and EV/ EBITDA ratios

One of the primary tools for establishing the relationship between a company's stock price and earnings per share is the price-to-earnings (P/E) ratio. Forward-looking multiples are stronger value predictors, as was already noted. A P/E ratio that uses predicted earnings to determine the P/E ratio is known as a forward P/E ratio. However, the forward P/E ratio employs predicted EPS, therefore if actual profits turn out to be different, it might generate inaccurate or biased findings. Therefore, in order to make better judgements, analysts will often combine forward and historical P/E forecasts. In this study, the forward P/E ratios use the expected EPS which selects the newest quarterly report and multiplying the EPS by four. The P/E ratio of a company often reflects how much investors are capable of paying for each dollar of profits they have invested. P/E ratio often provides excellent information and expertise into the growth potential of a firm. The EV/EBITDA ratio is another valuation parameter. It represents the relationship between the market value of the capital invested and the expected earnings for the coming year. As a result, both P/E and EV/EBITDA show a proportionate link between market value and profit indicators overall, with P/E considering issues from the standpoint of shareholders and EV/EBITDA from the perspective of all investors.

Currently, the Lululemon Athletica inc. (NASDA: LULU) has much higher valuation ratio (P/E, forward P/E and EV/ EBITDA) than other comparable firms in the athletic clothing sector, although the sales of other firms are much higher than Lululemon. In addition, the industry benchmark P/E ratio is 11.72, whereas Lululemon's mean P/E ratio is 39.89 [22]. Investors may therefore be motivated to profit from the increasing stock price in order to enhance their profit margin as intended. As shown in table 1, the P/E ratio of Lululemon is almost 30% to 50% higher than Nike and Adidas, and is almost four times than that of Under Armour inc. In terms of forward P/E ratio, Lululemon is almost twice as much as that of Adidas. Also, the EV/ EBITDA ratio of Lululemon is three to four times than that of Under Armour inc. and 50% higher than that of Adidas.

Table 1. Valuation ratios in August 2022

Valuation ratios	P/E	Forward P/E	EV/ EBITDA
Nike inc.	28.0	29.0	22.5
Adidas AG	22.2	21.5	14.5
UnderArmour inc.	10.2	11.2	6.1
Lululemon	39.9	32.9	23.6

As shown in figure 1, other competitors such as Nike, Adidas and Under Armour are selling much more than Lululemon, however, Lululemon's price is still maintaining at a high level. Therefore, Lululemon's stock has been overvalued.

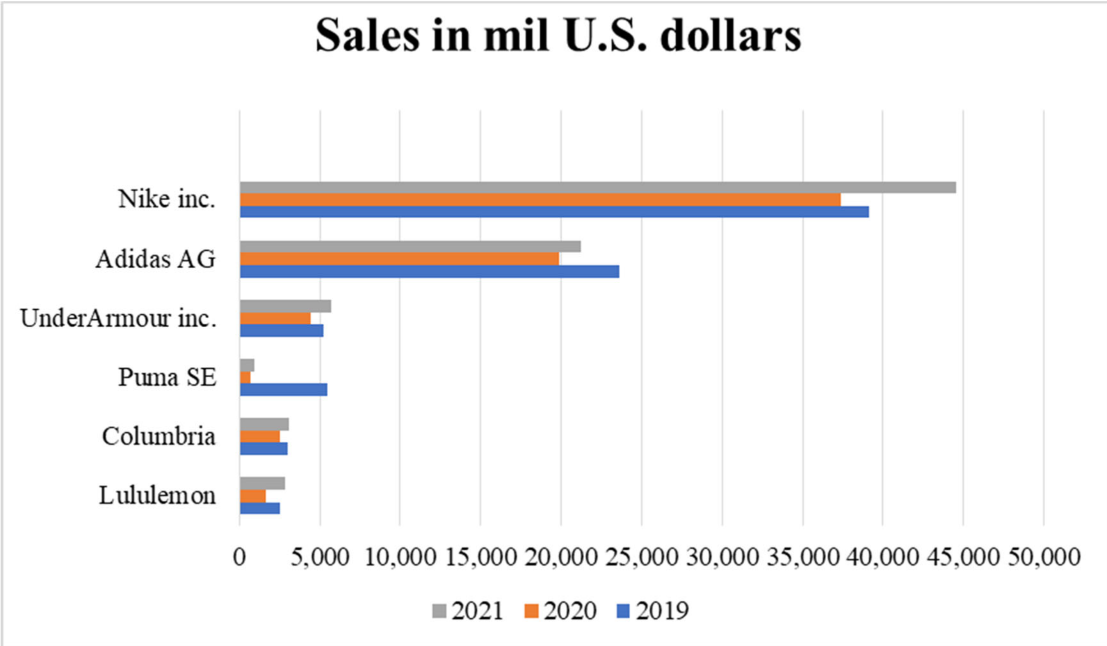

Fig. 1 Sales in mil U.S. dollars

6.2 DCF model

Since levered free cash flow (LFCF) is a reliable indicator of a company's long-term financial success, it will be utilized as the primary cash flow metric to determine Lululemon's discounted cash flow. It is defined as cash from operations minus Capital Expenditures. It is essential since it is the amount of cash that a firm can use to pay dividends and make investments in the business. The annual growth rate of the LFCF will be estimated by the average change in Lululemon's historical LFCF over the past five years, which is 12.3%. The WACC of Lululemon is 10.86%, which will be adopted as the discount rate of the DCF model. Lululemon's 2022 LFCF, which will serve as the DCF model's initial point, is 1051 million dollars. By averaging the rate's minimum and maximum, the long-term growth rate is determined. The terminal value of Lululemon is 14,266 million when the company's long-term growth rate, predicted LFCF in the fifth year, and discount rate of 10.86% are added together. Adding the terminal value with the value of forecast period, based on the output of the DCF model, the firm is worth 19.8 billion USD. Considering the relatively low market sales of Lululemon, this result demonstrates the overly optimistic expectations of the market for Lululemon's growth prospects. Despite having the most comprehensive and economically advantageous consequences for business valuation, the DCF model has some weaknesses. For example, the terminal value estimated by the assumption of future growth might be affected by market competition, the popularity of the culture of yoga, people's aesthetic preferences and business operations.

7. Conclusion

In conclusion, from the perspective of PEST analysis, lululemon's unique and innovative brand culture and concept, combined with the pursuit of healthy living and the globalization of sport, has led to the company's global growth. Lululemon's creative fabric technology and design also enhanced its competitive edge. Due to the rapid expansion of lululemon and its comparison with the giants of the industry, and investors are probably going to have high expectations for Lululemon's foreseeable expansion as a consequence of these reasons, the actual market value of Lululemon will likely be inflated. This is also reaffirmed by the distinct valuation approaches used in this study, indicating that the price of Lululemon is overvalued. However, according to the limitations of these valuation approaches and valuation accuracy, further investigation with diverse dimensions for Lululemon's true value is suggested.

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[4] These include value of earnings and dividends and multiples.

[5] These include annual profit purchase method, risk-bearing and risk-free rate method.

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