

AN EXPLORATORY STUDY OF THE INDIAN STOCK MARKET ON THREE MAJOR UNICORNS: BYJUS, NYKAA AND ZERODHA SINCE 2019

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ABSTRACT

On analyzing the trends of the three companies there is a clear indication that innovation and invention are the way forward. Overleveraging on existing market conditions is not something that can be taken for granted as these conditions are continuously changing. Using your own funds is the best way to achieve higher sales, revenue, and profits.

Keywords: unicorn, IPO, over leveraging, volatility, Nykaa, Byjus, Zerodha, sales, revenue, profit, BSE, NSE

Research Question: The Indian stock market has been volatile definitely since the pandemic. How has this affected the number of unicorns that India has thrown up? How many of these have culminated in an IPO? Is there any relationship in the funding pattern that the above three unicorns have followed? Is there any set pattern concerning the movement of the stock market and the number of unicorns? All these questions and more will be attempted in the course of this research paper.

1 Introduction:

India has two primary stock markets the NSE (the National Stock Exchange) and the BSE (the Bombay Stock Exchange). With India's massive population and bustling economy, the Indian stock exchanges are a reflection to some extent of the growth of the economy. Most of the trading takes place in the above two stock exchanges. The BSE has been in existence since 1875 while the NSE was founded in 1992 and trading started in 1994. Both exchanges follow the same trading mechanism, trading hours and settlement process. They compete with each other to reduce costs and increase market efficiency and innovation. Both these are driven by 'market orders' this means that market orders placed by investors are automatically matched with the best

limit orders, where buyers and sellers remain anonymous. The advantage of such a market is that it brings transparency by displaying all buy and sell orders in the trading system. All these orders are placed by brokers which have both offline and online trading facilities available to retain customers. It is only institutional investors who have direct market access options.

Figure 1: depiction of the Indian stock market



Source: <https://economictimes.indiatimes.com/markets/stocks>

The securities market is a component of the wider financial market where securities can be bought and sold between parties based on demand and supply. This market encompasses equity markets, bond markets and derivative markets where prices can be determined according to demand and supply. This particular forum brings together professional and non-professional participants.

The two prominent indexes are the Sensex and the Nifty. The Sensex is the oldest market index for equity, and it includes shares of 30 firms listed on the BSE. It provides time series data from April 1979 onwards. The nifty is a derivation of two words that is the national stock exchange and '50'. It is a collection of top-performing 50 equity stocks that are actively trading in the index. Currently, 51 stocks are trading that can be considered as part of the nifty.

Figure 2: NSE and BSE Index



Source: <https://stocksaim.com/what-is-nse-and-bse/>

A stock index is a measurement of the changes that take place in the stock market which measures price movement and market performance. For an Index, it is necessary to group stocks with similar characteristics. These could be:

- Type of industry
- Total market capitalization
- Size of the company

To calculate the value of the stock market index one can use the valuation of the underlying group of stocks. Any change in the value of the underlying stock can lead to a change in the stock index value. If the price of most of the stocks increases the index will rise and vice versa. The index is thus an indicative change in the market reflecting market investment sentiment and price movement.

A security market encompasses:

- Equity markets
- Bond markets
- Derivative market

This market can also be divided into two levels:

- Primary markets: this is where new securities are issued. The initial public offering (IPO) is a part of this market.
- Secondary market: this can be split into organized exchanges such as the BSE and the NSE Index and Over the Counter (OTC) where individual parties come together and buy or sell securities directly.
- Classification based on the tenure of the securities: this classification has two markets (a) capital market: this market is the market for long-term securities and funds. (b) money market: this is for short-term funds and securities.

2. Background and features of the stock market:

The securities market which primarily consists of the NSE and the BSE is considered to be the barometer of the economy of that market. This market has three categories of participants:

- The issuer of securities: they are the actual borrowers or deficit savers who raise funds by issuing securities in the market.
- The investors in the securities: these are the surplus savers who deploy their savings by subscribing to the issued securities.
- The intermediaries: they are agents who match the needs of savers and borrowers and in return, they get a commission.

In recent years there has been a large pool of intermediaries who have been providing services to various types of savers in the Indian security market. These intermediaries since inception have changed. Suppose there were physical ones in the 20th century, in the 21st century with the widespread knowledge, perception and penetration of the internet and the use of data. In that case, this section of intermediaries has largely moved to the online mode.

If the percentage of commission was high in the earlier years with increasing competition this has now become negligible or non-existent. With the recent spread in penetration of data and internet facilities, the reach of brokers to different sections of society has increased phenomenally. As a result, the brokerage has become almost negligible. This has resulted in the savings being channeled by different sections of society such that they can be used effectively in increasing the investment potential of the economy.

Some of the important functions of the stock exchange are:

- Role of an economic barometer. This means that the stock exchange is indicative of the state of the economy. It records all the major and minor changes in the share prices. Some researchers say that it is the pulse which reflects the state of the economy.
- Valuation of securities. Valuation is based on supply and demand indicating that those securities which have a high value are of those companies that are profitable and growth-oriented. This valuation helps creditors, investors, and the government in performing their respective functions.
- Transactional safety. The fact that these securities are traded in a stock exchange and are listed indicates the safety of the share, as only those securities are listed by the exchange after stringent verification.
- Contributor to economic growth. The process of trading involves continuous investment and reinvestment which offers opportunity for capital formation and subsequently growth of the economy.
- Awareness of the public towards equity investment. Stock exchange provides information about investing in equity markets. They are continuously rolling out new issues and new types of investment opportunities trying to make it attractive for the investor.
- Scope for speculation. Securities that are traded on the exchange could also be done so for speculation which equates demand and supply and ensures liquidity.
- Trading on the stock exchange ensures confidence amongst the investors that the securities and shares that they hold are completely liquid.
- Better capital allocation. Those companies that have their shares traded actively can raise fresh capital from the equity market, ensuring that the stock market helps in better allocation of capital so that maximum profit can be earned.

- This is one of the most important platforms for channelling savings to earn a better return than gold and silver.

Figure 3: Advantages of the Stock Market



Source: <https://blog.shoonya.com/basics-of-stock-market/>

2.1 Volatility:

Volatility is an investment term that describes when a market or security experiences periods of unpredictable and at times sharp price movement. Volatility not only indicates a fall in price it also refers to a sudden price rise. The more dramatic the swings the higher the level of volatility and potential risk. The main reason for the price of shares moving up and down is due to the discrepancy between the demand and supply of shares. The four types of volatility are:

- Historical volatility (HV); is a statistical measure of the dispersion of returns of a given security or market index over a given period. HV looks at past price movement and IV is the options market expectation of future movement.
- Implied volatility (IV); this is the option markets (these are a type of derivative product that allows investors to speculate or hedge against the volatility risk) of an underlying

stock expectation of future movement. It is expressed as an annualized percentage of the stock price and represents a one-standard-deviation move.

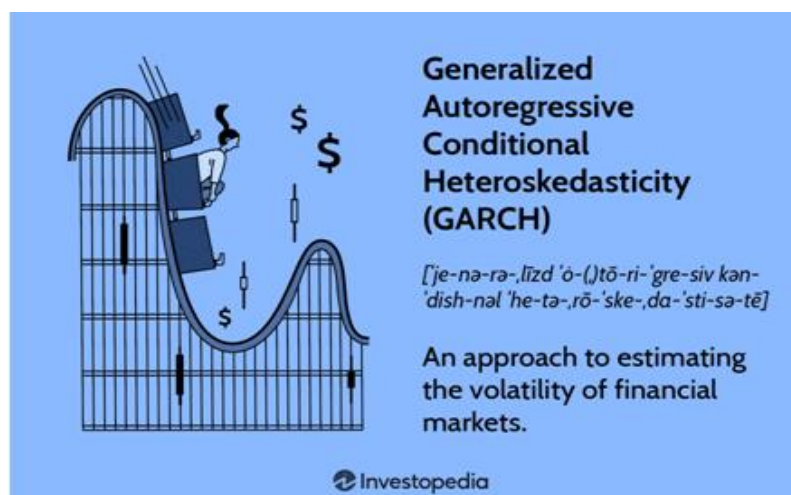
- The volatility index; refers to the statistical measure of the dispersion of return for the market index.
- Intraday volatility; refers to a measure of the annualized standard deviation of statistical variation from the average of the daily percentage price changes of a security or commodity. It is a degree of uncertainty based on historical moves over a set period.

Volatility or risk can be calculated in the following manner:

1. Calculate the average.
2. Calculate the deviation- subtract the average from the actual observation.
3. Square and add up all deviations, this is called variance.
4. Calculate the square root of variance. This is called standard deviation.

How the volatility of a stock market is measured is through the GARCH model (Generalized Auto-Regressive Conditional Heteroskedasticity). It is a statistical model used in analyzing time series data where the variants error is believed to be serially autocorrelated. This model assumes that the variants of the error term follow an auto-regressive moving average process.

Figure 4: GARCH model



Source: Investopedia

The formula of the GARCH model is indicated below:

$$\sigma_t^2 = \omega + \alpha \varepsilon_{t-1}^2 + \beta \sigma_{t-1}^2 \quad (1)$$

Where σ_t^2 is the conditional volatility, and ε_{t-1}^2 are squared unexpected returns for the previous period. ω would be positive always; and α and β would be non-negative (≥ 0). ε_{t-1}^2 are derived from a conditional mean equation that could be simple random walk model ($r_t = c + \varepsilon_t$), or AR (1) model ($r_t = c + \gamma * r_{t-1} + \varepsilon_t$), or any other ARMA model. But generally conditional mean equations are kept simple as it can cause convergence problems in GARCH estimation (Alexander, 2001). Where r_t is the returns from a financial series.

With only three parameters in the conditional variance equation, it is adequate to obtain a good model fit for daily asset returns.

GARCH accounts for stochastic volatility in a time series of returns. Still, the returns may have components other than that which can be explained by a stochastic value like trends or moving averages. This model may be appropriate when an asymmetric effect is observed as a different instability.

2.2 Unicorns:

in financial terminology, a unicorn is a privately held startup company valued at over US\$ 1 billion. The term was first coined by venture capitalist Aileen Lee in 2013 who chose the mythical animal unicorn to represent the statistical rarity of such successful ventures.

Figure 5: Unicorn



Source: Yourstory.com

Unicorns in India are seen as game changers in their respective industries and have the potential to reshape markets or create new ones. Some of the well-known ones are Byjus, Nykaa, Zerodha and Swiggy. As of 31st May 2023, India was home to 108 unicorns with a total valuation of \$340.80 billion. The years 2019, 2020, 2021, 2022 and the first half of 2023 saw an upsurge of

unicorns in India resulting in the country emerging as the third largest ecosystem for start-ups globally. The innovation in India is not just limited to certain sectors but is present in diversified ones across the country. They not only develop innovative solutions and technology but are generating large-scale employment. It was the work from home during the pandemic that fuelled the growth of digital businesses in India and resulted in the growth of unicorns. The three important factors are:

- Thriving digital payment ecosystem
- Large smartphone user base
- Digital-first business models

While every start-up has its unique journey in becoming a unicorn the minimum time is 6 months and the maximum time is 26 years. A large number of them have angel and venture capitalists investing in them but some of them have followed the IPO route for example: Nykaa, Zomato and Paytm.

3. Growth path since 2019 of three companies (a) Byjus (b) Nykaa (c) Zerodha

The three companies have been chosen as they represent three different aspects of the Indian economy namely the education sector, the cosmetic area and the third is related to the stock market. The year 2019 is important as it is just before the covid-19 hit the world. The period 2020 and 2021 was an extremely difficult year for the world in every aspect whether it was in restructuring business enterprises or citizens adapting to new conditions. After the pandemic was controlled the economies of the world faced another crisis that of the war between Russia and Ukraine. All these factors affected every country adversely and they had to juggle their economic aggregates like inflation, GDP (Gross Domestic Product), as well as political equations.

3.1 Byjus

Figure 6: Byjus EdTech

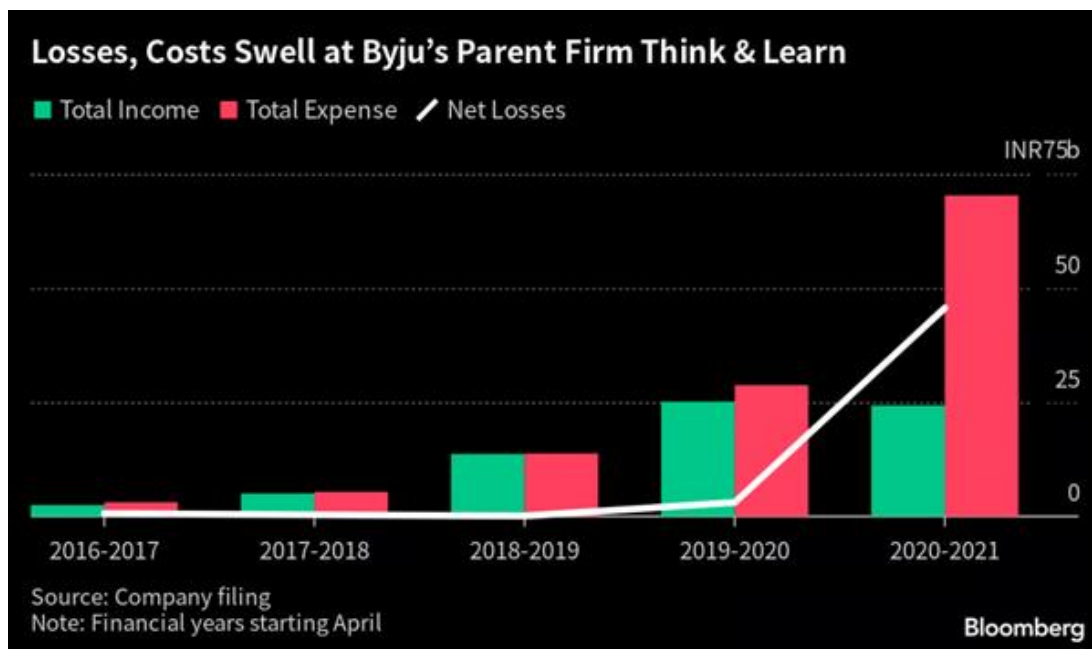


Source: <https://inc42.com/buzz/byju-backs-byjus-edtech-unicorn-founder-invests-400-mn-ups-stake-to-25/>

This is an Indian multinational educational technology company headquartered in Bangalore. It was founded in 2011 by Byjus Ravindran and Divya Gokulnath. During the initial days, the company focused on offering online video-based learning programs for the K-12 SEGMENT and competitive exams. In August 2015 the firm launched Byjus: the learning app. In 2017 they launched the Byjus math app for kids and Byjus parent connect app. By 2019 60% of Byjus students were from non-metros and rural cities. In January 2022 the company bought Simplilearn, Unacademy, Upgrad, Prepinsta Prime and Vedantu. In March 2022 it signed a contract with Qatar investment authority to establish a new Edtech company and an R&D (Research and Development) in Doha.

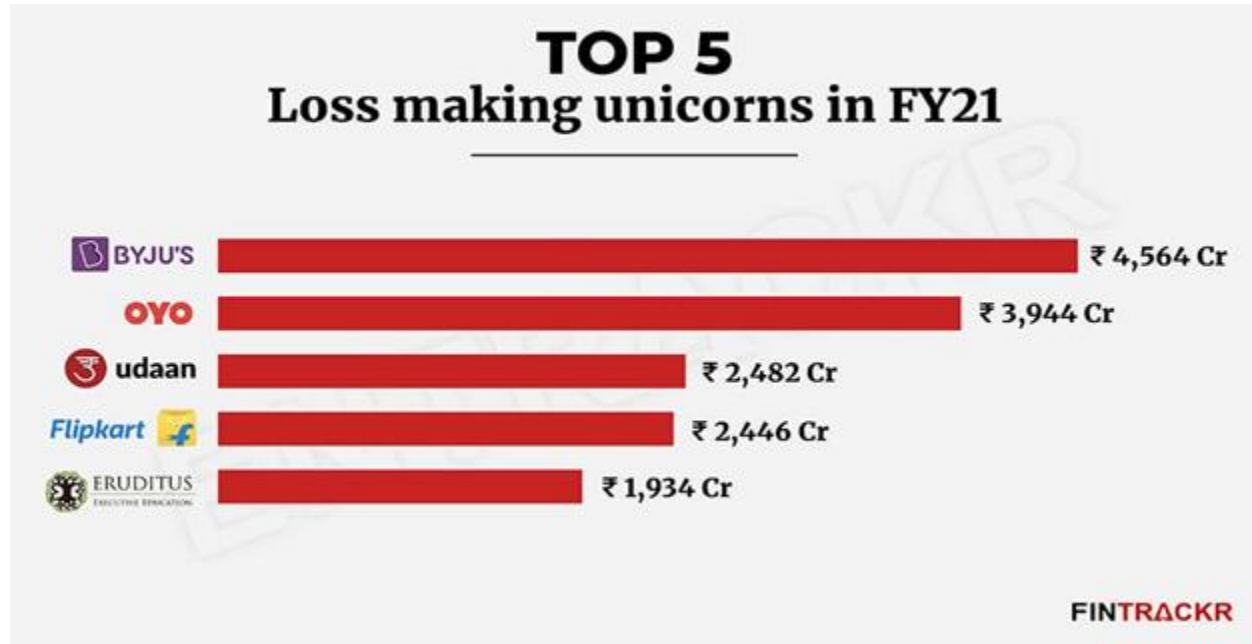
The fact that the world entered the online system during the pandemic led to the Byjus system of self-learning using online platforms replacing physical classes and traditional rote learning. It was during this time that Byjus used a blend of content, media, and technology to make learning more interactive and interesting among the students. These apps facilitated and improved the teaching-learning experience for a student. In this system, the teacher is a facilitator, a mentor, and a guide. The emphasis is on constructiveness. As all work during the pandemic shifted to an online platform it led to a surge of revenue for Byjus.

Figure 7a: images indicating the growth of the company from 2016-2021



source: <https://www.bqprime.com/business/star-founder-broke-down-in-tears-as-crises-engulfed-byju-s>

figure 7b: loss making unicorns in 2021



Source: <https://entrackr.com/2022/10/decoding-byjus-fy21-numbers-past-imperfect-future-tense/>

The above figures are indicative of the surge in profit that occurred during the pandemic and the dip that has been seen after situations started moving towards normalcy. Byjus has been making a loss from 2022 onwards. The reasons for this are:

- As conditions returned to normal; education shifted from the unpreferred online mode to the preferred offline mode of imparting knowledge. All educationists were clearly of the opinion that for the overall growth of the child offline is most important where interaction with the teacher and peers leads to wholesome growth.
- The company was in a hurry to acquire a large number of related education companies and a large amount of their profits were spent on acquisitions.
- These huge mammoth investments eventually turned to be an albatross around its neck.

Over extending its financial commitments has led the company to face several issues concerning adhering to various rules and regulations that are required by the Indian government. The company has been in the news as they have not submitted audited balance sheets for a couple of years, and they have not followed their commitment to pay lenders leading to many educational brands being taken over by foreign institutional lenders. Recently they have been asked to

explain their foreign funding to Indian government agencies. The company seems to be facing several issues basically since they thought that the demand for their product would continuously increase exponentially.

3.2 Nykaa

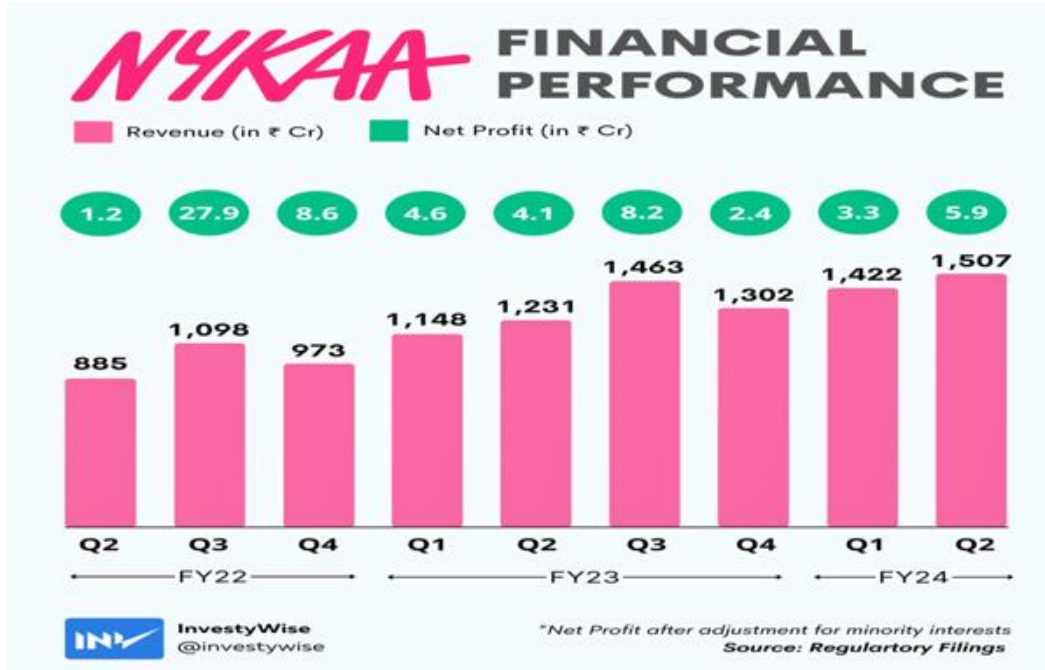
Figure 8: Nykaa and its founder Falguni Nayar



source:<https://www.businesstoday.in/latest/corporate/story/nykaa-fashions-strong-growth-mirrors-the-rise-of-online-fashion-in-india-351571-2022-11-02>

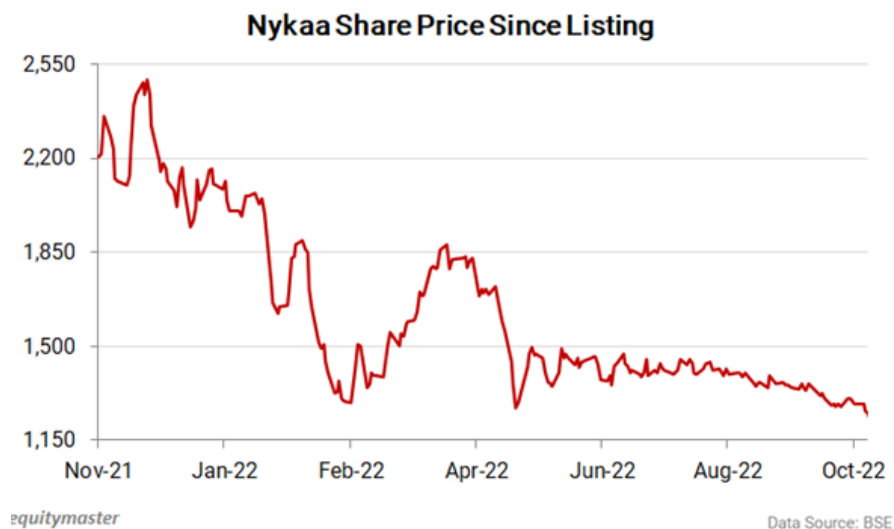
Nykaa replicated the physical buying experience in the e-commerce market. It recorded a bumper market debut with respect to its IPO in November 2021. The listing of this share has been a journey of many firsts from being the first beauty marketplace brand and the only profitable unicorn that is listed on the Indian exchange. This listing was a culmination of hard work with plans to balance growth with frugality. Endorsements for the brand by investors were based on the company's strategy and business plan. Their main aim was to convince the user to buy beauty products online but more than that it was to create a demand for beauty products amongst Indians. By coming out with an IPO they would continue to work frugally and with the correct capital efficiency by continuing their acquisitions. As their company was a covid year product they would aim to continue the growth projectile even in normal circumstances. Their USP is that they are a multi-brand retailer and they built a 'house of brand strategies simultaneously'. They have claimed that they will add brands where they feel the need.

Figure 9: financial profit performance and their projections for 2023 and 2024



Source: InvestyWise

Figure 10: Share price of Nykaa from November 2021 to October 2022



Source: equitymaster

Despite having a phenomenal listing in November 2021, in the subsequent years both the profit as well as the share price has been on the decline. Some of the reasons may be:

- Poor recall
- Inability to cross-sell its fashion products to the core beauty and personal care consumer base.
- Poor waste management
- Inability to integrate sustainability in its business operations.
- Low spending on research and development activities which may have weakened the company's performance due to lack of local/international market knowledge.
- The company generated lower advertisement revenue.
- Competition with similar business models.

All of the above resulted in a plummeting of the revenue and the share price of one of the most successful unicorns of its time. Till the company manages to address the above issues it would be difficult for it to get back to its earlier glory.

3.3 Zerodha

Figure 11: promoters of Zerodha



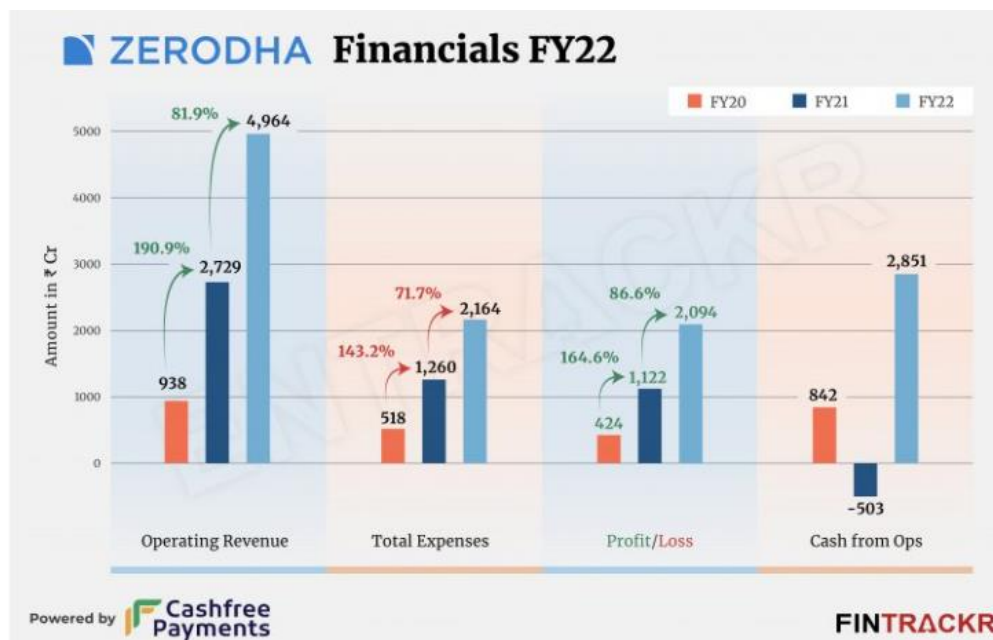
Source: <https://inc42.com>

The name Zerodha is an English Sanskrit word consisting of 'Zero' in English and 'Rodha' in Sanskrit (barriers or obstruction) and together the word means no obstruction which signifies the

birth of a challenge-free online stock broking platform. The company which was founded in 2010 by brothers Nithin and Nikhil Kamath is an online discount broking company that aims to lower the cost for their clients which is crucial in deciding the long-term profitability of the trader trading in the stock market of the country. They work on the idea of discount broking which means a reduced commission or low brokerage on the transactions. They have the first-mover advantage. They offer retail stock brokerage facilities at discounted rates along with other opportunities for currencies and commodities trading, mutual funds, and bonds. It has a user base of more than nine million making it the largest stockbroker in terms of clients. Over time Zerodha used technology to differentiate itself from the rest in the market. Its trading platform Kite on the web and mobile today accounts for more than ten percent of all retailing trading turnover in the country. It then launched Coin which is an online platform to buy mutual funds directly.

The business model of Zerodha works on a ‘low margin and high-volume model’. It charges a very minimal amount to the traders for transactions due to which the trading volume is high. Their operational costs are also low due to its online structure.

Figure 12: the growth of profit of Zerodha



Source: <https://entrackr.com/2023/01/zerodha-posts-rs-4964-cr-revenue-and-rs-2094-cr-profit-in-fy22/>

The company became a unicorn (a company that reaches a valuation of 1 billion dollars) in June 2020 without raising funds from any investors, purely relying on bootstrapping (a company that grows without external help or capital). This makes the company a completely self-made one without being answerable to any of its investors. The reason is that they do not have anybody investing in their company. They are reluctant to enter into the IPO space as it would require a dilution of their stake or attracting more capital for investment. Does this company require this additional capital? They seem to be doing extremely well and there is no indication of lack of capital for their future endeavors.

4. Present analysis of the three above-stated companies with respect to sales, revenue, and profit:

Byjus currently seems to be cash-strapped as he has pledged his homes to raise funds to pay his staff. There have been complaints by BCCI (the Board of Control for Cricket in India) that have initiated an insolvency plea against *Byjus* for not clearing their dues. Thus, it seems that the company has not been able to break even forget making profits and has also not paid all its interest obligations. The reason is that it over-leveraged itself.

Nykaa on November 6th2023 reported a consolidated net profit of ₹7.8 crores in the second quarter of the fiscal year 2023-24. Net profit jumps to 50% while revenue is up by 20% (Mint 6th November 2023). This company seems to be showing fairly robust results, but the share price is still languishing at ₹169.20 (8th December 2023). This is a far cry from the listing price. The results may be because they need to reduce costs in the face of competition from similar types of business models.

Zerodha a bootstrapped company on the other hand has been increasing its profits year after year and quarter after quarter. The main reason for this may be that it is continuously innovating and inventing its business model with the changing environment leading to a continuous growth in the increase in profits.

Amongst the three it is *Nykaa* and *Zerodha* which have shown an increase in sales, revenue, and profit. In the case of *Nykaa*, it has not resulted in a higher share price while *Zerodha* is not a listed company.

5. Conclusions and lessons to be learnt:

The examination of the three different companies indicates that overleveraging when the economy is doing well for that particular product does lead to major issues at a later date once there are signs of reduction of the impetus. This is apparent in the case of *Byjus* where it attracted a lot of funding that was used on acquisitions of educational products at a very high

valuation. These were done during the time of COVID-19 when online education was the norm. The moment worldwide conditions started moving towards normalcy the demand for online education declined and so did the demand for products that were being provided by the EduTech leading to the company being cash strapped.

Nykaa on the other hand is the only one amongst the three that came up with a resounding successful IPO as it was a new concept, primarily online that got a boost during the pandemic. The moment the situation turned normal it faced competition from other similar portals leading to a drastic drop in their share price, but they are still making profits.

Zerodha on the other hand followed a completely different model and is doing the best among the three as it is not being funded. It is continuously innovating and inventing itself.

The lessons that one learns is to be prudent about world conditions and investment simultaneously innovating and inventing.

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