DCF Analysis for Intrinsic Value

HDFC Bank Limited (HDFCBANK.NS)

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Indian Economy:

India's nominal gross domestic product (GDP) at current prices is estimated to be at Rs. 232.15 trillion (US$ 3.12 trillion) in FY22. With more than 100 unicorns valued at US$ 332.7 billion, India has the third-largest unicorn base in the world.

Gross Value Added (GVA) estimates at basic prices in FY22 are as follows:

- **Agriculture, forestry & fishing:** Rs. 2040079 crore
- **Mining & Quarrying:** Rs. 294644 crore
- **Manufacturing:** Rs. 2107068 crore
- **Electricity, gas, water supply & other utility services:** Rs. 306254 crore
- **Construction:** Rs. 946396 crore
- **Trade, hotels, transport, communications & services related to broadcasting:** Rs. 2208388 crore
- **Financial, real estate & professional services:** Rs. 2872815 crore
- **Public administration, defence & other services:** Rs. 1677786 crore
- **Forex Reserves:** 272322.99 USD Million from 1998 until 2023.
- **Currency (code):** Indian rupee (Rs).

Exchange Rates: Indian rupee per US$: US$ 1 = Rs. 82.63 as of 13 Feb, 2023.

Social Indicators:

According to the Human Development Report 2021-22 HDI rank of India is 132nd, among 191 countries. A significant factor in the recent dip in the Human Development Index is a decrease in life expectancy over the world, which went from 72.8 years in 2019 to 71.4 years in 2021.

When disasters like COVID-19 and the Ukraine war coincided with enormous social and economic changes and perilous planetary changes, it had a terrible effect on billions of people globally.

About the Banking Sector:

As per the Reserve Bank of India (RBI), India’s banking sector is sufficiently capitalised and well-regulated. The financial and economic conditions in the country are far superior to any other country in the world. Credit, market and liquidity risk studies suggest that Indian banks are generally resilient and have withstood the global downturn well.

The Indian banking industry has recently witnessed the rollout of innovative banking models like payments and small finance banks. In recent years India has also focused on increasing its banking sector reach, through various schemes like the Pradhan Mantri Jan Dhan Yojana and Post payment banks. Schemes like these coupled with major banking sector reforms like digital payments, neo-banking, a rise of Indian NBFCs and fintech have significantly enhanced India’s financial inclusion and helped fuel the credit cycle in the country.

The digital payments system in India has evolved the most among 25 countries with India’s Immediate Payment Service (IMPS) being the only system at level five in the Faster Payments Innovation Index (FPII).* India’s Unified Payments Interface (UPI) has also revolutionized real-time payments and strived to increase its global reach in recent years.

About the Company:

HDFC Bank Limited (also known as HDB) is an Indian banking and financial services company headquartered in Mumbai. It is India's largest private sector bank by assets and world's 10th largest bank by market capitalisation as of April 2021. It is the third largest company by market capitalisation of $127.16 billion on the Indian stock exchanges. It is also the fifteenth largest employer in India with nearly 150,000 employees.

HDFC Bank was incorporated in 1994 as a subsidiary of the Housing Development Finance Corporation, with its registered office in Mumbai, Maharashtra, India. Its first corporate office and a full-service branch at Sandoz House, Worli were inaugurated by the then Union Finance Minister, Manmohan Singh.

As of 30 June 2022, the bank's distribution network was at 6,378 branches across 3,203 cities. It has installed 430,000 POS terminals and issued 23,570,000 debit cards and 12 million credit cards in FY 2017. It has a base of 1,52,511 permanent employees as of 30 June 2022.

HDFC Bank provides a number of products and services including wholesale banking, retail banking, treasury, auto loans, two-wheeler loans, personal loans, loans against property, consumer durable loan, lifestyle loan and credit cards. Along with this various digital product are Payzapp and SmartBUY.

Porter's Five Forces for Indian Banking Industry:

Threats of New Entrants

New entrants in Foreign Regional Banks brings innovation, new ways of doing things and put pressure on HDFC Bank Limited through lower pricing strategy, reducing costs, and providing new value propositions to the customers. HDFC Bank Limited has to manage all these challenges and build effective barriers to safeguard its competitive edge.

Bargaining Power of Suppliers

All most all the companies in the Foreign Regional Banks industry buy their raw material from numerous suppliers. Suppliers in dominant position can decrease the margins HDFC Bank Limited can earn in the market. Powerful suppliers in Financial sector use their negotiating power to extract higher prices from the firms in Foreign Regional Banks field. The overall impact of higher supplier bargaining power is that it lowers the overall profitability of Foreign Regional Banks.

Bargaining Power of Buyers

Buyers are often a demanding lot. They want to buy the best offerings available by paying the minimum price as possible. This put pressure on HDFC Bank Limited profitability in the long run. The smaller and more powerful the customer base is of HDFC Bank Limited the higher the bargaining power of the customers and higher their ability to seek increasing discounts and offers.

Threats of Substitute Products or Services

When a new product or service meets a similar customer needs in different ways, industry profitability suffers. For example services like Dropbox and Google Drive are substitute to storage hardware drives. The threat of a substitute product or service is high if it offers a value proposition that is uniquely different from present offerings of the industry.

Rivalry among the Existing Competitors

If the rivalry among the existing players in an industry is intense then it will drive down prices and decrease the overall profitability of the industry. HDFC Bank Limited operates in a very competitive Foreign Regional Banks industry. This competition does take toll on the overall long term profitability of the organization.

HDFC BANK SWOT Analysis:

Strengths in the SWOT analysis of HDFC Bank – HDFC Bank SWOT Analysis

- HDFC bank has 5326 branches and 14996 ATMs and is the second largest private bank in India.
- HDFC bank operates in 2825 Indian cities and has more than 800 telephone banking locations to service customers.
- The bank's ATM is available in Plus/cirus, Visa Electron/ Maestro, Visa/Master, and American Express domestic and international cards. That's also another reason why the most famous card for shopping and online purchases is HDFC cards.
- In contrast to other private banks, HDFC Bank has a high degree of customer loyalty.
- HDFC has a low turnover rate and is one of the best places to work in the private banking industry.
- HDFC has many recognition and awards by various financial ranking institutions such as Dun and Bradstreet, Financial Express, Euromoney awards for innovation, Finance Asia country awards, etc., it has won 'Best Bank' awards.

Weaknesses in the SWOT analysis of HDFC Bank – HDFC Bank SWOT Analysis

- HDFC bank has no good presence in rural markets, where its direct competitor is expanding in the rural market as ICICI bank.
- In rural areas, HDFC does not enjoy first-mover privileges. With respect to banking institutions, rural residents are hard-core loyalists.
- HDFC lacks methods for effective marketing, such as ICICI.
- The bank mainly works on high end consumers.
- Any of the commodity groups in the bank lack performance and have very little market presence.
- HDFC's share prices frequently fluctuate, causing investors to feel confused.

Opportunities in the SWOT analysis of HDFC Bank – HDFC Bank SWOT Analysis

- HDFC banks have stronger criteria of asset quality than government banks, so it is possible that earnings growth will accelerate.
- Big enterprises and SMEs are rising at a very rapid rate. In terms of managing corporate salary accounts, HDFC has a strong record.
- HDFC Bank has increased its portfolio of bad debts and, relative to government banks, the recovery of bad debts is high.
- HDFC has really good overseas opportunities.
- Greater scope due to a good financial role for investments and strategic partnerships.

Threats in the SWOT analysis of HDFC Bank – HDFC Bank SWOT Analysis

- The non-performing assets (NPA) of HDFC rose from 0.18% to 0.20%. While it is a small improvement, it is not a positive indication for the bank's financial health.
- Non-banking financial firms and banks of the modern era are rising in India.
- The HDFC is unlikely to increase its market share when a significant challenge is levied by ICICI.
- In order to deal with private banks , government banks are seeking to restructure.
- RBI has opened up to 74% to invest in the Indian market for overseas banks.

Fundament analysis

- Investors generally like to be rational and scientific in their investment selection.
- Thus, they would want to collect and analyze a lot of information about the past performance of companies, industries and the economy as a whole.
- So that the future expected performance can be estimated.
- Such an evaluation of company, industry and economy is known as fundamental analysis.
- Fundament analysis is a logical and systematic approach of estimating future price and dividends.
- It is based on the premise that a share price of a company depends upon fundamental factors relating to the company, industry and economy.

Fundamental analysis is done in three steps:

- Economy analysis
- Industry analysis
- Company analysis

Here, we took Banking industry for analysis.

Economy analysis

A booming economy is good for the stock market as there are higher chances for companies earning more profits & hence giving more returns. Similarly, an economic slowdown can dampen profits hence returns go down.

Thus, a study of certain economic variables is important to ascertain whether the economy is doing

well or otherwise. In the case of banking industry, Strong GDP growth will facilitate banking sector expansion.

Rising per capita income will lead to increase in the fraction of the Indian population that uses banking services. Growth of banking sector of India is 6.3 per cent per capita growth (annually).

Industry analysis

The Indian banking system consists of 12 public sector banks, 22 private sector banks, 44 foreign banks, 43 regional rural banks, 1,484 urban cooperative banks and 96,000 rural cooperative banks in addition to cooperative credit institutions. As of September 2022, the total number of ATMs in India reached 217,308 out of which 49.81% are in rural and semi urban areas.

As of November 4, 2022 bank credit stood at Rs. 129.26 lakh crore (US$ 1,585.09 billion). As of November 4, 2022 credit to non-food industries stood at Rs. 128.87 lakh crore (US$ 1.58 trillion).

In 2020-2022, bank assets across sectors increased. Total assets across the banking sector (including public and private sector banks) increased to US$ 2.67 trillion in 2022.

In 2022, total assets in the public and private banking sectors were US$ 1,594.51 billion and US$ 925.05 billion, respectively.

RBI has decided to set up Public Credit Registry (PCR), an extensive database of credit information, accessible to all stakeholders. The Insolvency and Bankruptcy Code (Amendment) Ordinance, 2017 Bill has been passed and is expected to strengthen the banking sector. Microfinance industry's gross loan portfolio (GLP) by 10% in FY22 to Rs. 2.85 trillion (US$ 36.42 billion).

As of June 01, 2022, the number of bank accounts—opened under the government's flagship financial inclusion drive 'Pradhan Mantri Jan Dhan Yojana (PMJDY)'—reached 45.60 crore and deposits in the Jan Dhan bank accounts totalled Rs. 1.68 trillion (US$ 21.56 billion).

Rising income is expected to enhance the need for banking services in rural areas, and therefore, drive the growth of the sector.

India is the world's largest market for Android-based mobile lending apps, accounting for ~82% of all online lenders worldwide. India currently has 887 active lending apps.

The digital payments revolution will trigger massive changes in the way credit is disbursed in India. Debit cards have radically replaced credit cards as the preferred payment mode in India after demonetisation. In November 2022, Unified Payments Interface (UPI) recorded 7.30 billion transactions worth Rs. 12.11 trillion (US$ 148.63 billion).

Company analysis

HDFC Bank was incorporated in August 1994, and, currently has an nationwide network consisting of 1725 Branches and 4232 ATM's in 779 Indian towns and cities.

HDFC Bank in India operates on the following basic segments:

Personal Banking: Includes all financial deals between a commercial bank and

an individual.

Wholesale Banking: Includes all sorts of financial dealings within Corporates, medium

and small Enterprises, Financial Institutions and Trusts as well as the Government Sector.

NRI Banking – Includes personal banking relations with the Non Resident Indians.

HDFC Bank has been recognized, felicitated and awarded by a number of organisations.

Methodology:

The discounted cash flow (DCF) technique of valuation determines the value of an investment by extrapolating past cash flows. With the help of future cash flow estimates, DCF analysis seeks to determine an investment's current value.

Making judgements about the purchase of securities or the acquisition of a company can be eased by it. Decisions on capital budgeting or operating expenses can also be made with the use of discounted cash flow analysis by business owners and management.

If the DCF is more than the investment's current cost, the opportunity may yield profits and be worthwhile. The fact that DCF relies on potentially erroneous future cash flow projections is a drawback. In this report weighted average cost of capital (WACC) was used as discount rate since it takes shareholders' projected rate of return into account.

The Following Steps are followed to Generate the intrinsic value of HDFC Bank.

1. Determining the revenue growth rates
2. Forecasting the financial statements
3. Deriving the Unlevered Future Cash flows
4. Calculating the Discount rate (WACC)
5. Calculating the Terminal Value
6. Discounting the cashflows
7. Arriving at the intrinsic value of the shares

Step 1: Determining the revenue growth rates

Revenue growth rates are assumed considering the average previous fiscal year revenue growths, future investments by HDFC Bank.

Assumptions								
Fiscal Year	2020A	2021A	2022A	2023E	2024E	2025E	2026E	2027E
Revenue Growth	18.6%	18.3%	8.8%	15.2%	10.0%	18.0%	15.0%	8.0%
SG&A % of Revenue	33.3%	31.3%	31.4%	32.0%	32.0%	32.0%	32.0%	32.0%
Other OE % of Revenue	42.1%	42.9%	0.0%	28.3%	28.3%	28.3%	28.3%	28.3%
Tax % of EBIT	58.0%	49.9%	19.4%	42.4%	42.4%	42.4%	42.4%	42.4%

Step 2: Forecasting the Financial Statements

With the help of last three years data of financial statements available to us and assumed growth rate we have forecasted the Revenue, COGS and operating Expenses for next 5 years and calculated future cash flows.

Unlevered Free Cash Flow (mm)								
Fiscal Year	2020A	2021A	2022A	2023E	2024E	2025E	2026E	2027E
Total Income	79,17,46,400	93,66,62,200	1,01,94,13,700	1174802996	1292283296	1524894289	1753628433	1893918707
Gross Profit	**79,17,46,400.00**	**93,66,62,200.00**	**1,01,94,13,700.00**	**1,17,48,02,996.45**	**1,29,22,83,296.10**	**1,52,48,94,289.40**	**1,75,36,28,432.81**	**1,89,39,18,707.43**
Operating Expenses								
Selling, General, Administrative	26,39,46,300	29,29,78,900	32,02,19,100	376047970.5	413652767.6	488110265.8	561326805.6	606232950.1
Other Operating Expenses	33,31,42,400	40,16,48,800	-	332695463.1	365965009.5	431838711.2	496614517.8	536343679.3
Total Operating Expenses	59,70,88,700.00	69,46,27,700.00	32,02,19,100.00	708743433.7	779617777.1	919948976.9	1057941323	1142576629
EBITDA	19,46,57,700.00	24,20,34,500.00	69,91,94,600.00	46,60,59,562.77	51,26,65,519.04	60,49,45,312.47	69,56,87,109.34	75,13,42,078.09
Depreciation & Amortization	1,28,00,300	1,38,60,200	1,68,16,900	25940602.08	25940602.27	25940602.46	25940602.65	25940602.84
Operating Profit (EBIT)	18,18,57,400.00	22,81,74,300.00	68,23,77,700.00	44,01,18,960.68	48,67,24,916.77	57,90,04,710.01	66,97,46,506.69	72,54,01,475.25
Operating Taxes	10,54,80,000	11,38,20,100	13,25,59,200	186772587.7	206550683.6	245711313.6	284219266.4	307837477.4

Step 3: Deriving the Unlevered Future Cash flows

Future Cash Flows are calculated as:

Net Operating Profit after Taxes (NOPAT)+ Depreciation & Amortization – CapEx – Change in Net working Capital.

NOPAT (Net Operating Profit After Taxes)	7,63,77,400.00	11,43,54,200.00	54,98,18,500.00	25,33,46,373.02	28,01,74,233.19	33,32,93,396.43	38,55,27,240.29	41,75,63,997.81
(+) Depreciation & Amortization	1,28,00,300	1,38,60,200	1,68,16,900	25940602.08	25940602.27	25940602.46	25940602.65	25940602.84
(-) Capital Expenditures	78697100	22418800	36572300	7,86,97,100.00	2,24,18,800.00	3,65,72,300.00	10,71,06,744.39	10,71,06,745.16
(-) Change in NWC	-18,74,90,800	-27,16,12,300	-34,77,800	2,39,52,733	-2,42,07,577	-4,79,31,002	-4,71,32,152	-2,89,07,720
NWC	90,61,600	-26,25,50,700	-26,60,28,500	-24,20,75,767	-26,62,83,344	-31,42,14,346	-36,13,46,498	-39,02,54,218
Current Assets	45,00,69,600	29,42,12,800	34,48,88,600	45,61,51,191	50,17,66,310	59,20,84,246	68,08,96,883	73,53,68,634
Current Liabilitites	44,10,08,000	55,67,63,500	61,09,17,100	69,82,26,959	76,80,49,655	90,62,98,592	1,04,22,43,381	1,12,56,22,852
Unlevered Free Cash Flow	19,79,71,400.00	37,74,07,900.00	53,35,40,900.00	17,66,37,142.54	30,79,03,612.20	37,05,92,700.84	35,14,93,250.47	36,53,05,575.33

Step 4: Calculating the Weighted Average Cost of Capital

WACC is calculated by multiplying the cost of each capital source (debt and equity) by its relevant weight by market value, then adding the products together to determine the total.

WACC = [(E/D+E) x Re] + [(D/D+E) x Rd x (1 - t)], where:

E = equity market value

Re = equity cost

D = debt market value

Rd = debt cost

t = the current tax rate for corporations

Weighted Average Cost of Capital (WACC)	
Equity (mm)	2,50,94,53,400
Debt (mm)	2,10,85,01,000
Cost of Debt	35.5%
Tax Rate	30.0%
D/(D+E)	45.7%
After Tax Cost of Debt	**24.9%**
Risk Free Rate (10-Yr Treasury Yield)	7.3%
Expected Market Return	9.2%
Market Risk Premium	1.9%
Levered Beta	0.74
E/(D+E)	54.3%
Cost of Equity	**8.7%**
WACC	**16.1%**

Step 5: Calculating the Terminal Value

Terminal value (TV) is the value of an asset, business, or project beyond the forecasted period when future cash flows can be estimated. In this report **perpetual growth method** was used for calculating the Terminal Value. It was calculated as:

Terminal Value = (FCFn x (1 + g))/(WACC – g)

Implied Share Price Calculation	
Sum of PV of FCF	98,47,54,013
Growth Rate	8.7%
WACC	16.1%
Terminal Value	5,38,70,38,671

Step 6: Discounting the cashflows

Unlevered FCFs were discounted against calculated WACC (12.5%) for 5 years as:

Present Value of Free Cash Flow= $FCF*(1+WACC)^{t}$

Unlevered Free Cash Flow (mm)									
Fiscal Year		2020A	2021A	2022A	2023E	2024E	2025E	2026E	2027E
Unlevered Free Cash Flow		19,79,71,400	37,74,07,900	53,35,40,900	17,66,37,143	30,79,03,612	37,05,92,701	35,14,93,250	36,53,05,575
Projection Year					1	2	3	4	5
Present Value of Free Cash Flow					**15,21,80,046**	**22,85,42,064**	**23,69,86,662**	**19,36,50,986**	**17,33,94,255**

Step 6: Arriving at the intrinsic value of the shares

For intrinsic value we first calculated equity value for HDFC Bank as:

Equity Value = Enterprise value + Cash - Debt – Minority Interest

Then we calculated intrinsic value as:

Intrinsic Value= Equity Value/ No. of Outstanding Shares

Implied Share Price Calculation	
Sum of PV of FCF	98,47,54,013
Growth Rate	8.7%
WACC	16.1%
Terminal Value	5,38,70,38,671
PV of Terminal Value	2,55,69,86,865
Enterprise Value	3,54,17,40,878
(+) Cash	1,59,92,20,700
(-) Debt	2,10,85,01,000
(-) Minority Interest	46,15,000
Equity Value	3,02,78,45,578
Diluted Shares Outstanding (mm	1854000.00
Implied Share Price	**1,633.14**
Curent Price	1,667.15
Upside	-2%
BUY/SELL	**HOLD**
	It is almost proper valued

Conclusion:

As we can see from DCF analysis the **current price of HDFC stock is 1667.15** and our **Intrinsic value is 1633.14** so our stock is properly valued so we should **HOLD** the stock of HDFC Bank.