Module 15. Sector Analysis

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1. Sector analysis overview

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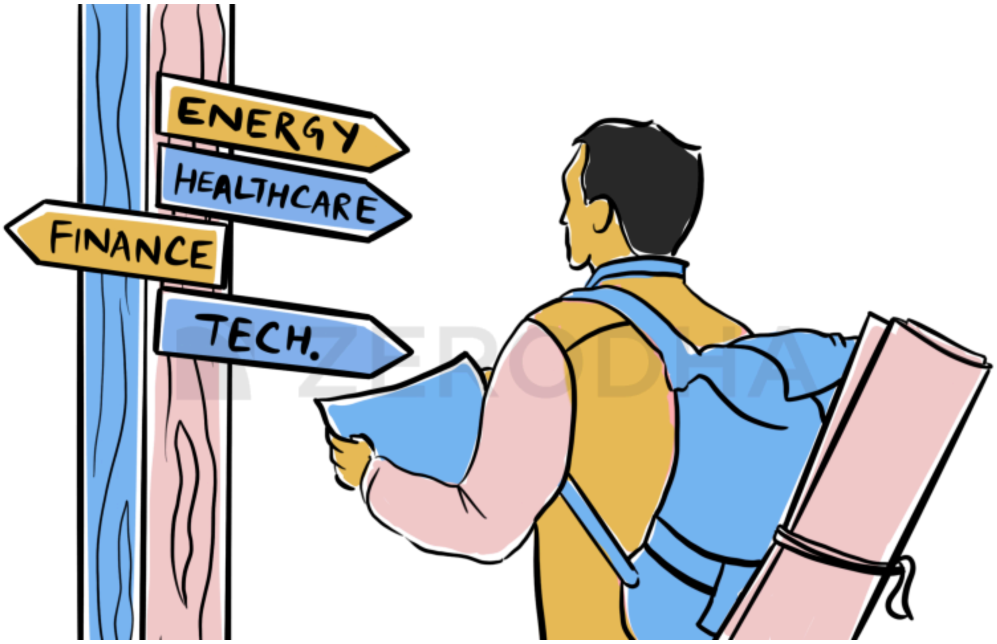
1.1 – Introduction

Welcome to another Varsity Module!

This module on Varsity explores sectors as an investment avenue. We all know that a well-diversified portfolio is the key to building a successful stock portfolio. The diversification should be across sectors and market capitalizations.

If we are looking at picking stocks from different sectors, we need to understand sectors from a stock-picking perspective. The objective of this module is just that, i.e., to help you understand what to look for in each sector as a stock picker or an equity investor.

Each chapter will focus on one sector. So after reading this chapter, you can jump across to any sector you are curious to learn about without worrying about losing the chain of thought.



By the way, my name is Vineet Rajani; I hold a CFA charter and have four years of experience in researching equities. I recently joined the Zerodha Varsity team to help Karthik develop content, and the sector analysis module is the first module I'll be working on. I hope you all will like this module as much as you've liked all the previous modules 🙂

1.2 – What is a sector, and what is an industry?

A sector is a set of companies engaged in similar business activities. For example, Infosys, TCS, and HCL are similar businesses, forming the Information Technology sector. HDFC Bank, ICIC Bank, and SBI are banks, and these companies belong to the banking sector. Sun Pharmaceuticals, Apollo Hospitals, and Dr. Lal Path Labs are all companies belonging to the healthcare sector.

Sectors can have sub-sectors or industries. Sectors and industries are often used interchangeably. Each industry has a distinct business at a granular level, but at a broader level, many industries can make one sector. While banking, insurance, and mutual funds are all distinct industries, collectively, they are financial services and make up the financial services sector. Similarly, the healthcare sector comprises sub-sectors such as hospitals, diagnostics, pharmaceuticals, pharmacies, preventive healthcare, and wellness.

The following table classifies various industries in a limited set of sectors. There are about 3-4 globally accepted standards for industry classification. This table shows how Refinitiv classifies the sectors and industries.

Sector	Industry
Technology	Software, Cloud Computing, IT Enabled Services
Healthcare	Hospitals, Diagnostics, Pharmaceuticals, Pharmacies, Preventive Healthcare, Medical Research
Financials	Banking, Insurance, Payments, Mutual Funds
Consumer Discretionary	Household Appliances, Consumer Electronics, Automobiles, Apparel, Recreation, Hospitality
Industrials	Wires, Automation, Machinery, Logistics, Defense Goods, Logistics
Communication Services	Telecommunication, Internet Service Providers, OTT, Social Media
Consumer Staples	Packaged foods, FMCG, Personal Care, Dairy
Energy	Power Generation, Power Transmission, Coal, Fuels
Utilities	Electricity Distribution, Water Supply, Waste Water Handling, Gas Distribution
Materials	Cement, Chemicals, Paints, Fertilizers, Agricultural Goods, Metals
Real Estate	Residential Real Estate, REITs

An investor would want to analyze a particular sector when they see a factor or phenomenon influencing it. For instance, an investor investing in the fertilizer or packaged foods sector would want to take note of the monsoon season's data as it tends to impact those sectors as a whole. Or an investor in the IT sector may want to keep an eye on the USD-INR exchange rate as the sector makes a significant part of revenues in USD.

Investors also take an interest in the sector of their occupation – a doctor might want to invest in healthcare stocks, or a software engineer might be confident about their understanding of the technology sector. Investor frenzy in a particular sector also stimulates the interest of other investors in that sector.

1.3 – What is sector analysis?

Sector analysis involves looking for factors, features, events, and metrics that impact the businesses in a given sector. A factor might positively impact one sector while a negative impact on another. The idea of sector analysis hinges on the fact that certain aspects or events are specific to sectors and do not impact the overall market.

Sector analysis is a part of fundamental analysis. While our module on fundamental analysis explains the approach to researching a particular company, sector analysis focuses on the features and operational or performance metrics unique to a sector. The exercise becomes meaningful when several companies within a sector are compared based on these metrics.

1.4 -Different Approaches for Different Sectors

No two sectors are the same; therefore, no two sectors can be analyzed the same way. Banks, for instance, are analyzed using key performance indicators such as NPAs, capital adequacy ratios, and interest margins. Insurance companies are analyzed for solvency ratio, claims settlement ratio, expense ratio, persistence ratio, etc. Airlines look at revenue per seat kilometer, cost per seat kilometer, fuel costs, and occupancy rates to understand performance. These metrics depict the operational efficiency of the players in an industry and how those players stack against each other.

For industries in the heavy manufacturing space – cement, steel, aluminum, and the like – production capacity, production volume, and sales volume are important comparables. Volume metrics are significant for automobiles and electronics too. Companies in FMCG, or Fast Moving Consumer Goods, focus significantly on distribution, brand awareness, packaging, etc.

When an investor begins studying a sector, understanding the value chain could be a good starting point (I will explain the concept of "value chain" soon). A study of the value chain provides more insights into a particular sector's unique dynamics. The exercise could also unearth certain industry players' competitive advantages or disadvantages.

1.5 – What is a value chain?

Simply put, a value chain begins with the sourcing of raw materials and goes up to the point of end consumption. For example, the textile industry's value chain would include fiber production, spinning yarn, fabric production, dying and printing, garment manufacturing, packaging, distribution, and retail. Cement's value chain starts with limestone mining, followed by clinkerization, blending, grinding, packaging, and distribution. This value chain might be extended if the cement manufacturer processes it further into ready-mix concrete (RMC) before selling it in the market.

Dissecting the value chain in this manner enables an investor to identify which steps drive costs or improve or hamper productivity. A value chain typically has many steps. Here, the investor must put on a business owner's hat to understand what steps along the value chain add value to the business and what do not. Cement companies generally own the limestone mines and all the processes up to distribution. The cement industry is predominantly vertically integrated. Let me introduce three new concepts: Vertical Integration, Backward Integration, and Forward Integration.

- **Vertical Integration**: A company is considered vertically integrated if it owns several operations across the value chain. As mentioned above, cement companies carry out all the processes, from limestone mining to cement production and distributing it to customers. Cement makers might go further and even convert it to concrete before delivering it to the customers.
- **Backward Vertical Integration**: Acquiring supply-side processes in the value chain is called backward integration. Steel companies such as Tata Steel and JSW Steel can be called backward integrated as they own iron ore mines. This helps them control inventory supply and costs.
- **Forward Vertical Integration**: Acquiring distribution side processes is called forward integration. A cosmetics company selling products through owned stores is forward-integrated. Indian Oil and Bharat Petroleum could also be considered forward integrated because they operate some fuel stations apart from franchising out most.
- **Lean Organizations**: A fourth concept, lean organizations specialize in only one or very few steps in the value chain. Many FMCG companies neither manufacture their product nor sell it to end consumers. They focus mainly only on distribution and marketing. They are very low on vertical integration.

Although a rare phenomenon, a fully vertically integrated company owns all the processes from raw material production to end consumer retail sales. Samsung, a global leader in consumer electronics, is essentially a vertically integrated business. It produces semiconductors, memory chips, and screens that go into making mobile phones, then assembles mobile phones at its plants and even sells them through its own retail stores. While Samsung also sells through other retailers and e-commerce channels, its retail stores symbolize some level of vertical integration.

Most companies within an industry exhibit similar business structures across the value chain. FMCG companies in India can hardly be backward integrated. Palm oil, a key ingredient in many food products, personal care, and cosmetic goods, is primarily sourced from Malaysia and Indonesia. Packaging for these products uses petroleum derivatives which have their source in oil-producing countries. It does not make business sense for an FMCG company to own supply-side processes.

The case of the FMCG sector suggests that the geography of the value chain also influences a business' vertical integration, costs, and material availability. Automobile companies are mostly assembly companies. The thousands of parts that go into making a car are all sourced from vendors that may be geographically located far apart.

The significance of packaging in a value chain depends on the nature of a product, its application, size, shape, and perishability. It also depends on where the end consumer is located and what modes of transport will be used to deliver the product. Regulatory requirements must also be met concerning packaging material, dimensions, eco-friendliness, etc.

1.6 – Framework

These concepts above can be put into a framework for an investor researching a particular sector. This framework can act as a checklist for the investor to ensure that adequate efforts have been dedicated to comprehensively understanding a sector.

Political Factors: The political will of the ruling government can influence the overall business sentiment in an economy as a whole. Businesses engaged in sin goods such as liquor and tobacco and necessities such as grains and oil often carry large political overhangs.

Economic Factors: The strength of an economy and the stage of economic development can present different opportunities for different sectors. High-interest rates could limit corporate growth, while low-interest rates could enable easy borrowing and faster growth. However, low-interest rates could encourage excessive retail borrowing and spur inflation. The ability of the economic authorities to balance growth and control inflation is of the essence here. Economic factors such as inflation, exchange rates, FDI, and money supply play along with interest rates to influence the business environment.

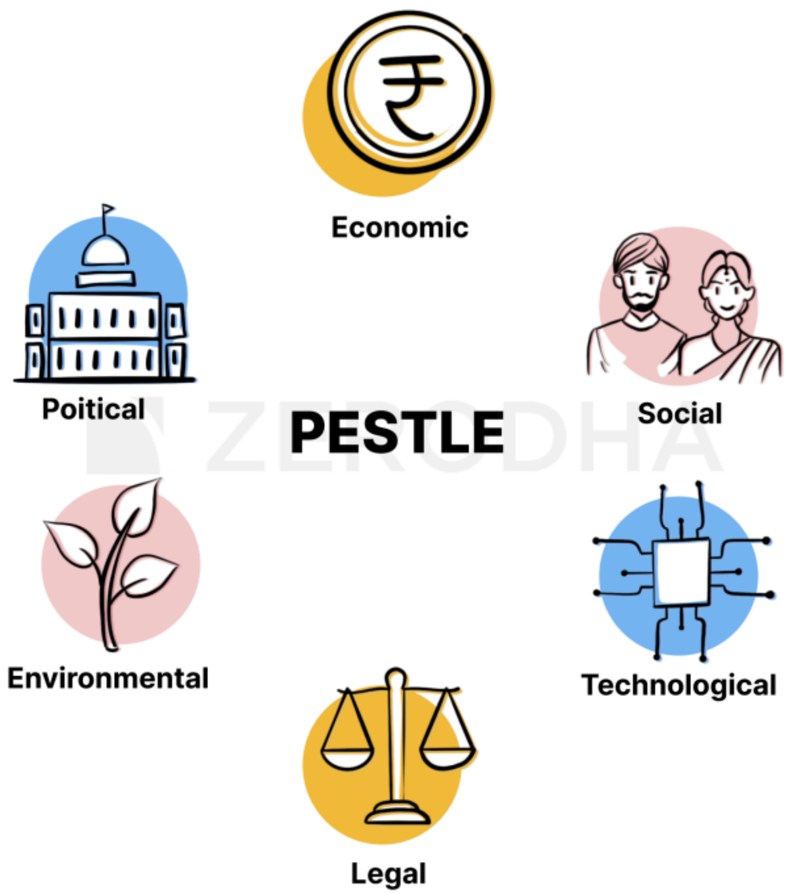
Socio-cultural Factors: Festivals can stimulate seasonal buying for specific sectors. Socio-cultural shifts can create long-term trend growth for certain products while a decline in others. The gradual move from coal-fired stoves to gas stoves results from economic development and social acceptance of a new cooking method.

Demographic features and changes are a major influence on demand creation. The vast size of India's youth population, in both absolute and percentage terms, has led to the creation of various products and brands meant to attract the young crowd. A decline in the average fertility rate suggests a decline in population growth. The aging of today's young population could boost the demand for old-age products after three-four decades.

Technological Factors: The stories of Nokia and Blackberry losing market share to Apple and Samsung have been discussed every time the impact of technological change has to be depicted. Innovations in technology can create new sectors and even wipe out some. All industries related to e-commerce were built upon the Internet. The Internet was a technological breakthrough. On the other hand, typewriters and Telegram are technologies that died as better ones replaced them.

Legal Factors: The duties, tariffs, quotas, and other restrictions have an impact on the import-export trade of a country. Legal factors often create entry barriers for new players to enter a particular industry. For example, the heavy licensing requirements and different state-wise laws make liquor manufacturing a capital-intensive and difficult industry to get into. Pollution control, labor laws, and regulators like SEBI, RBI, and IRDAI constitute an economy's legal machinery.

Environmental Factors: The natural environment of a country can present opportunities for some sectors while discouraging others. Mining businesses are possible only if a country has minerals under its earth.



Pollution and environmental deterioration result in imposing restrictions and requirements on industries. Water and effluent treatment plants have become a regulatory mandate for various chemical and industrial goods companies. Natural calamities could purge industries while displacing civilizations. Insurance companies carry a huge risk on account of natural disasters.

These factors also influence each other. Economic development could lead to social development and shifts in culture. Issues related to society and the environment could be behind the development of certain legal barriers. Some legal factors can also be politically influenced.

These factors make the PESTLE Analysis (Political-Economic-Social-Technological- Legal-Environmental), a framework commonly taught in colleges and business schools.

1.7 – How companies within a sector can differ?

Beyond the PESTLE framework, as an investor, you must also study how a particular company competes with its peers. By the way, competition is much more than just outselling each other. A company also competes during the sourcing of raw materials. Two dairy companies, for example, will compete with each other to source milk from farmers.

Companies also compete with new players in the industry. New players can disrupt the industry. A large influx of new players can change the industry's competitive landscape. Industries also have to worry about being replaced by substitutes.

A company's ability to outrun its competition and negotiate with external factors depends on what differentiates it from its peers. Let us look at a few differentiating factors.

Size: Size is essentially about the capital of the company. Being big or small comes with its advantages and disadvantages.

Larger companies managed to stay afloat through the Covid-related lockdowns while many smaller companies shut down. Why did this happen? Business activity was mostly dull through the lockdowns. So regular operations were not yielding profit. Larger companies survived by using capital reserves. Remember how large retailers survived while many smaller retailers closed shops?

Huge capital reserves also open opportunities that are otherwise out of reach. For example, the huge capital and licensing requirements to set up a telecom business are a barrier. Smaller businesses or individuals with small capital do not even consider starting a telecom business. But the deep pockets of Reliance Industries enabled it to pump in loads of capital to set up Jio. Its war chest was huge enough to wipe out some existing players (remember Aircel, Uninor) while others were forced to merge (Vodafone and Idea).

Larger companies also enjoy **economies of scale**. Ever wonder why a readymade shirt generally costs lower than a tailor-made one? Makers of readymade shirts source everything in bulk to get deep discounts. These discounts can be passed down to customers in the form of lower prices. Conversely, a tailor cannot compete with the quick turnaround of automated sewing machines. A tailor charges a higher price to make up for the hours dedicated to a single shirt.

Being small also has its advantages and disadvantages. A newly set-up business generally has limited funds, workers, and resources. But the ability to disrupt is high mostly because larger companies do not consider smaller companies a threat, and smaller companies do not have legacy issues.

Let me break this down. For example, the Brushless DC (BLDC) technology has been used for 50 years in electricals to save electricity. However, it was first used in ceiling fans in the US only in 2009. And a few years later, smaller players like Versa Drives and Atomberg adopted the technology and made it big. The incumbent players had been improving upon the existing technology but did not consider an alternative technology as an energy-saving solution. Once the smaller players disrupted the space, all larger players introduced the BLDC range of fans under their brand names.

Why didn't the larger players act first? Introducing a new technology could mean re-training the production staff and introducing new machinery. Existing skills and systems make the management averse to changes. These are known as **legacy issues**. Decision-making often slows down in larger organizations. So even if they were aware of better technology, its adoption took time. Small companies are not considered a threat because even if they have a superior product, their ability to sell it and scale it up is limited. A few that do manage to scale up become the disruptors.

Age: With age comes experience. It is a commonly known concept. It is applicable to businesses too. Sometimes experience helps businesses avoid the same mistakes. Sometimes, experience makes them averse to trying new methods, techniques and technologies.

Just by the virtue of being around for years, businesses have a network of suppliers, distributors, and allies that a new business will take some time to build. However, new businesses with huge capital can overcome this obstacle.

Ola and Uber disrupted other cab services mainly due to the large venture capital that they spent on technology, networking, and marketing.

Long-standing relationships with vendors are useful when the supply of inputs is limited. They could also allow easier payment terms. A long-standing distribution network can be used to launch new products. For example, Polycab used its wide network of wire distributors and retailers to launch its electrical goods. Tata Consumer Products has been launching several new products that it can distribute using the existing Tata Tea and Tata Salt network.

These long-standing relationships can also become a hurdle in making objective business decisions. For example, HUL and Colgate-Palmolive had to face disputes with their long term distributors for offering differential pricing to B2B e-commerce platforms. HUL also faced boycott threats in Madhya Pradesh when it was looking for distributors in addition to the existing ones.

Newer consumer brands established their online channels before exploring physical retailing. They do not have long-standing relationships with any distributor. Therefore, they are unlikely to face protests like HUL and Colgate-Palmolive did.

Focus: Focus can be related to products, target market, costs, or pricing.

The product focus sounds very basic. Every business is focused on its product. However, some businesses have multiple products. Some organizations have multiple businesses. Reliance Industries has three large businesses – oil, retail, and telecom. Its next bet is going to be on financial services. Similarly, ITC is a large FMCG company with a presence in hospitality, technology, packaging, and agri-exports.

So when you study conglomerates like these as part of a sector, you must consider what drives the business and profitability. You might even want to consider each business as a separate organization to draw proper comparisons with relevant peers.

A company operating in a single sector might be better equipped to innovate and scale up than a peer conglomerate with other business interests. The difference is mainly about focus. A conglomerate has diluted focus across divisions. This is also why some analysts assign a **conglomerate discount** when valuing a conglomerate business.

The **target market** is the target customers. Both Maruti Suzuki and Mercedes are automobile companies but are incomparable because they focus on different markets. Maruti will not be able to charge as high for its cars as Mercedes does. Similarly, Mercedes will not be able to sell as many cars as Maruti does. Their different market focus is also visible in their marketing tools. Maruti uses TV commercials to spread the word about its car. It wants the maximum population to buy its cars. Mercedes understands that millions may watch TV commercials, but only some can afford their cars. Therefore, it does not spend on TV commercials.

Some businesses focus on attaining **cost leadership**. Indigo Airlines has managed to stay afloat while so many airlines are struggling or have perished. Indigo’s flight tickets may be priced similarly to its competitors, but its focus on cost controls has led to profitability.

Other businesses focus on **pricing**. FMCG companies often price their products competitively, meaning they keep the prices low to maintain and increase the customer base. Ever wondered why many biscuits and chocolates still sell in ₹5-packs despite all the inflation after so many decades? It is because a consumer with limited means finds the ₹5 price point psychologically comforting. Round figures such as ₹5 or ₹10 sell more than odd figures such ₹6 or ₹7. Also, they might not be willing to spend ₹10 or higher when their budget is ₹5.

Price leadership is not always about the lowest prices. Apple has become the world's most valuable smartphone brand by always pricing its phones at a premium. Such pricing power is achieved with a heavy focus on the product and branding.

Regulations also impact a company or sector's pricing power. One can argue that the healthcare sector has strong pricing power. But because of its essential nature, the government regulates medicine prices.

Substitutes: Substitutes come in various forms. Tea and coffee are each other's substitutes. Mobile phones have substituted personal cameras, computers, diaries, and watches. In the case of luxury goods, a vacation, watch, car, handbag, and chandelier are all substitutes for each other. So when I pointed out earlier that Mercedes and Maruti may not be comparable, Mercedes could compare with other luxury goods.

Substitutes are a challenge because they can come from a different sector or even create a new one altogether. There can also be regulatory support for substitutes in certain industries – solar and wind energy getting favorable policies over coal. Electric vehicles are also getting incentives over combustion engine (conventional) vehicles.

Certain businesses, mostly large ones, can identify substitutes and even own them. For example, petrol and diesel pumps are now setting up EV charging and gas stations. Since substitutes can render an industry obsolete, an analyst must try to ascertain the magnitude of the threat from substitutes.

Competition from substitutes pushes businesses to expand into the substitute business as well. New entrants in a sector often increase the competitive intensity in the market. This causes businesses to sell at lower prices. The advent of e-commerce has forced physical stores to give comparable discounts. Competition from Jio forced telecom operators to offer 1 GB of data per day for a price point they would otherwise charge for a monthly limit of 1 GB.

1.8 – Conclusion

Sector analysis could help you as an investor understand whether a sector appears attractive or not. Accordingly, you may bet on the whole sector or a few selected stocks. Either way, valuations must be justified. A good business at a high price is likely a bad investment. Therefore, you must combine sector analysis with a proper valuation analysis to improve the likelihood of investment returns. A comprehensive study would also include fundamental analysis.

I shall delve into understanding each sector in depth in the subsequent chapters of this module.

The first sector I will cover is Cement. Stay tuned!

Key Takeaways:

- A sector is made up of similar businesses. Sectors may be further divided into sub-sectors or industries.
- To understand specific sectors, one needs to understand their value chain
- Several regulated sectors like stock broking, banking, and insurance are understood with the help of key performance indicators
- You could also study sectors with the help of frameworks such as PESTLE. *You could also build your own framework.*
- Companies within a sector could differ in size, age, focus, and substitutes. Each of these features comes with its advantages and disadvantages.
- Valuations are critical. An attractive industry or business must also have favorable valuations to be investible.

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2. Cement

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2.1 – Cement – An Introduction

We laid down a basic foundation for sector analysis in the previous chapter. In this chapter, we will discuss the Cement industry. I have picked cement as the first sector because cement is an inherent part of modern civilization. The concrete jungle, as we call our cities, is made of cement.

India is the world's second-largest cement producer, with a 7% global market share. Surprisingly, the largest producer, China, accounts for over half of the total global cement production. China produced 2.1 billion tonnes in 2022, while India produced ~370 million tonnes.

The vast difference between China's and India's share in cement production perhaps shows the long runway ahead that India's infrastructure has to cover and the opportunity for the cement sector. India has an installed capacity of over 570 million tonnes per annum (mtpa). Another ~150 mtpa in capacity is expected to be added by 2027.

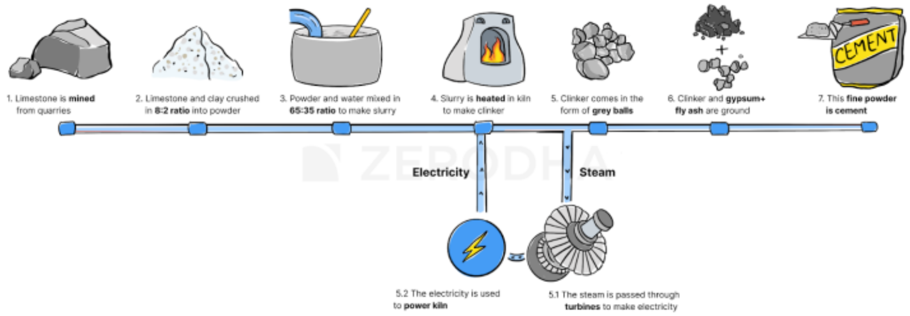
Owing to the housing and infrastructure boom in Eastern India, the region is expected to get a third of the total capacity additions. It also accounts for 80% of houses constructed under the PMAY-G scheme. Pradhan Mantri Awas Yojana (Gramin), or PMAY-G, is the central government's scheme to subsidize the construction of pucca houses with basic amenities in villages.

Generally speaking, there are two types of cement – Portland Cement and Non-Portland Cement. All cement we generally see being used around is Portland Cement and its various blended forms. Non-Portland cement is not commonly used due to its corrosive nature. Although a value-added product in itself, cement is essentially a commodity. Its all-pervasive use has made the cement an industry of its own, and its peculiarities warrant an analysis unique to the sector.

2.2 – How is cement manufactured?

Let us have a glimpse of the Portland cement manufacturing process to identify the various sources or steps that could impact the cost of production, its selling price, and profitability.

- The first step is mining limestone from quarries, the key ingredient in cement production. Most cement makers own limestone quarries.
- Limestone and clay are mixed in an 80:20 ratio and ground into fine powder. Limestone content could be lesser, depending on the desired cement properties.
- This fine powder is mixed with water in a 65:35 ratio to form a slurry
- The resultant slurry is fed into a kiln to be heated at 1400-1500 degree Celsius to make clinker
- Clinker comes out of the kiln in the form of grey balls
- The clinker is then cooled. About 3-4% content gypsum is added to it. It is blended with fly ash, GGBS, or other such materials depending on the type of cement required. (Fly ash is a waste residue from thermal power plants, and GGBS or Ground Granulated Blast Furnace Slag is waste residue from iron production.) Most cement sold in India is in blended variants.
- The mixture is ground into fine powder. This powder is cement.



You can also understand cement production in this video by Vox. It is interesting for two reasons: One, it graphically explains the cement manufacturing process, and two, it discusses the possible solutions to the environmental concerns around cement manufacturing. But more on the environmental concerns later.

As you can see, the process of manufacturing cement remains the same across companies. As an investor in the sector, you should analyze which steps in the manufacturing process consume more cash and where a company can save costs. Also, remember, although belonging to the same sector, no two companies are the same. You need to analyze if a factor impacts the whole sector or is specific to a company. In fact, this is the end objective of a typical sector analysis, i.e. to understand a sector and its nuances and eventually zero in on companies that thrive within the sector so that you can make wise investment decisions. It may sound complex at this stage, but eventually, you will realize this is a common sense approach without rocket science.

2.3 – The Three Major Cost Centres

1. Input Cost

This is basically the Cost of Goods Sold, a concept we learned in the Fundamental Analysis module.

Limestone is the most important ingredient in cement. Cement companies own limestone quarries to control costs. They mine limestone from their quarries and process it to make clinker at plants that are generally set up close to the quarries.

Water is another major input in the process. Consistent water supply is also a major challenge in many parts of our country. Therefore, many cement companies have water recycling, rainwater harvesting, and groundwater recharging systems in place. This ensures regular water availability and better visibility of costs.

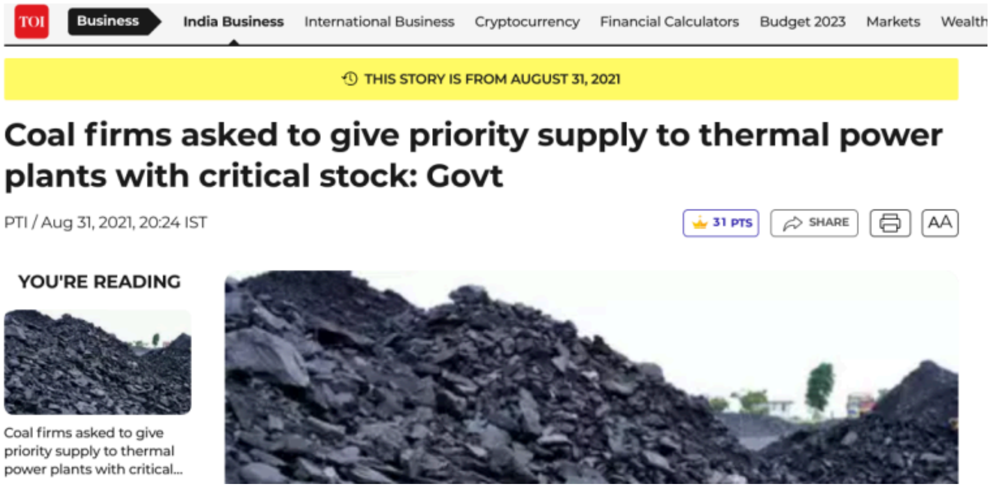
2. Power and Fuel Cost

Most cement manufacturers maintain captive power plants to bring down fuel costs. Let me introduce the concept of captive plants or units. If a manufacturing company can produce power for its own use, it is said to have a captive power plant.

Another example would be a pizza chain owning a small tomato farm to produce fresh organic tomatoes for its pizzas. In this case, the tomato farm is called a captive farm. A captive unit's product is not sold but used in-house for producing another product.

Larger players like Ultratech Cement, Ambuja Cement, and ACC have captive thermal, wind, and solar power plants. Despite captive power plants, fuel costs for these major players can be as high as 25% of the revenues. Some cement makers even own coal mines to insulate from the impact of coal price fluctuations. Ultratech and Ambuja both have captive coal mines to support their requirements partially.

Sourcing coal can often be a challenge. For instance, whenever there is a coal shortage, the government could ask domestic coal producers to sell coal only to power generation companies. Cement producers that own coal mines or other forms of captive power plants are at an advantage here. Others will have to import coal from international markets. Steel and aluminium industries are also heavy coal users and compete with cement in the international market to import coal, pushing prices up.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This is not to say that coal mine owners are always better off. During a down cycle when the demand for cement is low, owned coal mines are a fixed cost that the manufacturer must bear amid slow production and sales. Or if there came a time when coal prices were abysmally low, buying coal from the market would become cheaper than mining at owned quarries.

Given that coal is a dirty fuel, the possibility of a regulatory ban on its industrial use will only increase. Owned mines would become a dead cost if that were to happen.

“Controlling wastage and climate change

All cement producers have waste heat recovery system (WHRS) plants in place. WHRS is good for two reasons – fuel cost savings and reducing carbon footprint. The tremendous heat generated in clinker production is channelled to generate steam. This steam is passed through turbines to generate electricity. This electricity can cater to 25-30% of the cement plant’s power requirements.

The increasing focus on reducing fuel costs and carbon footprint has given rise to an interesting metric known as the Clinker factor. It represents the proportion of clinker in a cement recipe. The lower the clinker factor, the better. This may seem paradoxical – how can having less of the primary component be better? It is because clinker is also the most fuel-consuming step in the process of cement production.

But wouldn’t that hurt the quality of cement? Manufacturers have been innovating recipes that augment the features of cement while retaining its strength. Fly ash, gypsum, silica fume, volcano ash, and other industrial by-products are common ingredients of blended cement. The Vox video after the manufacturing process above explains this well.

3. Freight Costs

Cement is a perishable product. It typically has a shelf-life of just 90 days. Therefore, the distribution of cement has to be fast and efficient. It is also perhaps why cement producers own the entire value chain beginning with limestone quarries. It enables them to be in control of the inventory and costs.

Since perishability is a concern, cement companies might also own warehouses and trucks to monitor costs, time, and wastage.

Another industry hack is to have grinding facilities closer to the market. According to Ultratech Cement's Annual Report for 2021-22, it has 23 integrated plants, 27 grinding plants, and over 175 Ready-mix Concrete Plants.

Let me break this down. An integrated plant crushes limestone, makes clinker, and grinds it into cement. Such plants are mostly close to the raw material source – the limestone quarries, in cement's case.

To solve the perishability problem, grinding units are set up closer to the market. The grinding unit will cater to a market which is more likely a state or comparable region. These facilities receive clinkers from the clinker plants that are set up near the quarries. Other components to be blended into the cement are procured directly at this grinding facility. The clinker with other components is ground to make the final cement. The grinding unit's proximity to the market means a shorter time spent transporting the cement to the market.

Further closer to the market are RMC plants. RMC, or ready-mix concrete, is a mixture of cement, sand, gravel, water, and other ingredients that make a paste used to bond the bricks in a wall. RMC has a very short shelf-life of a few hours. Therefore, RMC plants are smaller than grinding units and cater to small clusters of markets or just cities.

Not all cement is sold in the form of RMC, but it is growing in popularity. As a business, cement companies would love to sell RMC; it is a value-added product and hence can improve margins. But it also adds capital expenditure. For construction companies, RMC is convenient because of the limited spaces available in cities and because it is one less job to do.

2.4 – Distribution of Cement

Distribution of cement, or bringing it to the market, requires its own study. Cement is a "low value, high volume" product. As of this writing in May 2023, a 50 kg bag of cement costs roughly ₹400. Compare that with a bag of grains or cloth or cosmetics or gold. Transporting a unit of any of these items from one point to another will surely bring higher revenues than transporting the same unit of cement. Perishability, as discussed earlier, is a challenge too. An efficient distribution system is key to maintaining profitability in the cement business.

At a time when urbanization has picked up pace, cement has become a necessity. If the market had only a small number of manufacturers, they could dictate prices, effectively impacting infrastructure growth and real estate prices. But the industry has several large players; over 25 are listed. However, the top five players account for almost half the national capacity. Huge capacity additions have been driving competition. Competition is also pushing the players to innovate and develop more ways of cutting costs and improving margins. Some are spending on branding and marketing to boost sales.

2.5 – Demand Drivers for Cement

The next step is to understand the uses or users of cement. In other words, let us understand what drives the demand for cement.

Cement is used in building houses, roads, dams, and other infrastructure. The cement users could be classified into three broad categories – housing, infrastructure, and industrial.

- Keeping aside unconventional building techniques, every residential building uses cement. Therefore, growth in the real estate sector is usually perceived as a positive sign for the cement sector. When tracking the growth of the cement sector, be careful not to mistake growth in house registrations as growth in the real estate sector. Resale is a big part of registrations. There is also a strong likelihood of urban housing behaving differently than rural housing.
- Infrastructure encompasses roads, bridges, railways, airports, dams, and irrigation facilities, among other public facilities, mostly built by the government. The more the government spends on infrastructure, the higher the demand for cement from this sector.
- The industrial application of cement is in building factories, processing plants, kilns, and other industrial structures. Large corporations generally do these kinds of capital expenditures. Corporations spend when they see potential demand for their products and have the ability to make such expenditures. One must, therefore, check if the demand is growing and if corporations are willing to cater to that demand.

Seasonality also impacts the demand for cement. All forms of construction activities usually slow down during the monsoon season, thereby impacting the demand for cement.

Studying manufactured bulk commodities like cement requires a deeper focus on the entire value chain, from production to distribution and sales. The asset-heavy nature of the value chain also makes cement manufacturers prone to take on more debt. An investor studying the sector must also look at the debt levels of the companies and the sector at large. A structure to the above discussions to simplify studying the sector could be very useful. Let me suggest a checklist that you could use when studying the cement industry.

2.6 – The Checklist

You can find these metrics in cement companies' quarterly presentations and annual reports.

	Ultratech Cement	Ambuja Cement	ACC Cement	Shree Cement	Deccan Cement	The Ramco Cement	Heidelberg Cement
Regional Presence	Pan India	Pan India	Pan India	Pan India	South and Central India	South and East India	North and South India
Market Share (Volume)	24.92%	7.83%	7.99%	8.44%	0.50%	3.92%	1.25%
Production Capacity (mtpa)	82.6	31.5	34.5	46.4	2.3	11.1	6.3
Sales Volume	88.0	28.9	28.9	27.7	1.8	11.1	4.8
Capacity Utilization	77%	86%	78%	64%	78%	57%	76%
Realization ₹/MT	5263.4	5351.0	5496.9	5065.0	4408.0	5652.7	4933.0
Input Cost Ratio	22.54%	23.77%	26.34%	18.07%	44.90%	42.53%	24.83%
Power and Fuel Cost Ratio	23.07%	23.43%	20.83%	24.12%	28.14%	23.13%	27.97%
Freight Cost Ratio	22.27%	24.63%	23.67%	21.98%	21.04%	20.23%	12.87%

Data for FY2022

Now why do metrics matter? These metrics are specific to the cement sector. If you are interested in investing in cement, combining these metrics with the regular company-based fundamental analysis can ensure complete sector research. Let us have a look at each metric one by one.

Regional Presence: Diversification helps reduce risk. A company with its operations and market spread out across the country is more likely to continue operating despite any challenges. If one plant cannot operate for any reason, the others can fill in.

Market Share: A larger market share usually results from a strong distribution network. Customers might want to buy a specific cement brand but will usually buy one easily available near their location.

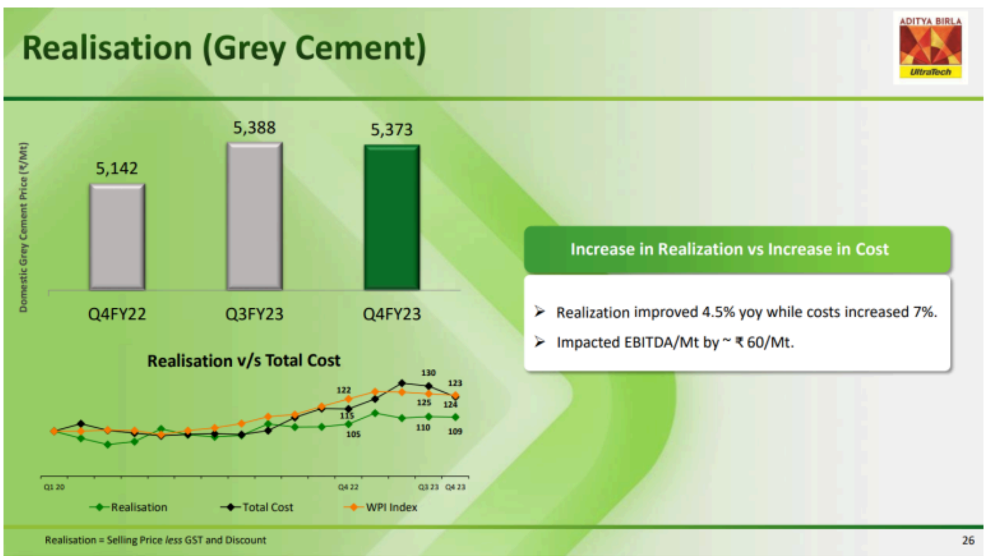
Production Capacity: The larger the production capacity, the larger orders the cement maker can serve. Cement makers want to add capacity if the economy is seeing a boom in infrastructure and real estate sectors. However, the cost of adding capacity must also be justified with the expected projected income from that capacity.

Capacity Utilization: Let's say a cement maker has an annual capacity of producing 100 mtpa worth of cement, but they produce only 70 mtpa. Effectively, they operate at a 70% capacity, or capacity utilization was 70%.

As an investor, you must determine why the full capacity was not utilized. External factors such as natural calamities, pollution controls, and regulations could limit full utilization. For example, if heavy rains were to shut down production for three months, operating at 100% capacity for the remaining nine months would also mean only 75% utilization. Internal factors such as the unavailability of raw materials or labour could also hamper production.

Sales Volume: Not all that is produced is sold. In fact, some cement makers sell more than what they produce. They may buy volumes from other cement makers to fulfil their commitments to customers.

Realization ₹/MT: Realization is the average selling price per unit. Higher prices lead to higher revenues. Comparison of the realization numbers of cement players can lead to various insights. The one with the highest number could be commanding a solid premium in the market or must be servicing locations others have not been able to service. The highest number could also suggest a larger share of value-added products in the total sales volume.
This snapshot from Ultratech Cement's Q4 presentation for FY23 shows that grey cement realizations have slightly moderated compared to the previous quarter.



Input / Power and Fuel / Freight Cost Ratios: You can compute these ratios by dividing the cost item by revenues.

	Ultratech Cement	Ambuja Cement	ACC Cement	Shree Cement	Deccan Cement	The Ramco Cement	Heidelberg Cement
Revenues ₹ Cr	52,598.8	28,965.5	16,151.7	15,009.6	791.8	6,003.7	2,297.0
Input Cost	11,854.8	6,885.0	4,254.5	2,712.5	355.5	2,553.3	570.3
Power and Fuel Costs	12,134.3	6,787.5	3,364.8	3,620.2	222.8	1,388.8	642.4
Freight cost	11,712.3	7,132.9	3,823.0	3,299.0	166.6	1,214.3	295.7
Input Cost Ratio	22.5%	23.8%	26.3%	18.1%	44.9%	42.5%	24.8%
Power and Fuel Cost Ratio	23.1%	23.4%	20.8%	24.1%	28.1%	23.1%	28.0%
Freight Cost Ratio	22.3%	24.6%	23.7%	22.0%	21.0%	20.2%	12.9%

Data for FY2022

The smaller these ratios, the better. Looking for each of these ratios separately can help identify what part of the business is driving costs and which one is improving margins. Cement companies typically try to control all these costs by having these activities in-house – captive quarries, power plants, and fleets.

That is about it. This checklist should equip you well to comprehensively understand the cement industry and the companies operating in it.

In the next chapter, we will discuss the highly regulated and frequently disrupted insurance industry.

Key Takeaways

- Understanding the cement sector requires understanding its value chain and cost centres.
- The three costs – input, power and fuel, and freight costs – make up the largest portion of expenses
- While cement companies try to improve margins by selling value-added products and improving branding, they focus mostly on costs.
- The cement sector does not have direct regulations. However, its heavy carbon footprint makes it a likely target of strict regulations. Complying with regulations could be an additional cost. Investors need to monitor the space constantly.
- Be on the lookout for startups disrupting the cement industry with environmentally friendly solutions.

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62 comments

1. *Tushar Singla* says:
   September 22, 2025 at 10:40 pm

   Zerodha Varsity never disappoints. Even as a B.com (H) student from SRCC and doing CFA, this sectoral analysis is very helpful, for beginners and finance enthusiasts alike.

   Reply

   - *Karthik Rangappa* says:
     September 23, 2025 at 10:16 am

     Thanks for letting us know, Tushar 🙂

     Reply
   - *A* says:
     October 2, 2025 at 9:41 am

     Absolutely a gold mine learning resource for anyone who wants to learn the basics of sectoral analysis framework.

     Reply

     - *Karthik Rangappa* says:
       October 3, 2025 at 10:06 am

       Glad you found it useful. Happy learning 🙂

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3. Insurance (Part 1)

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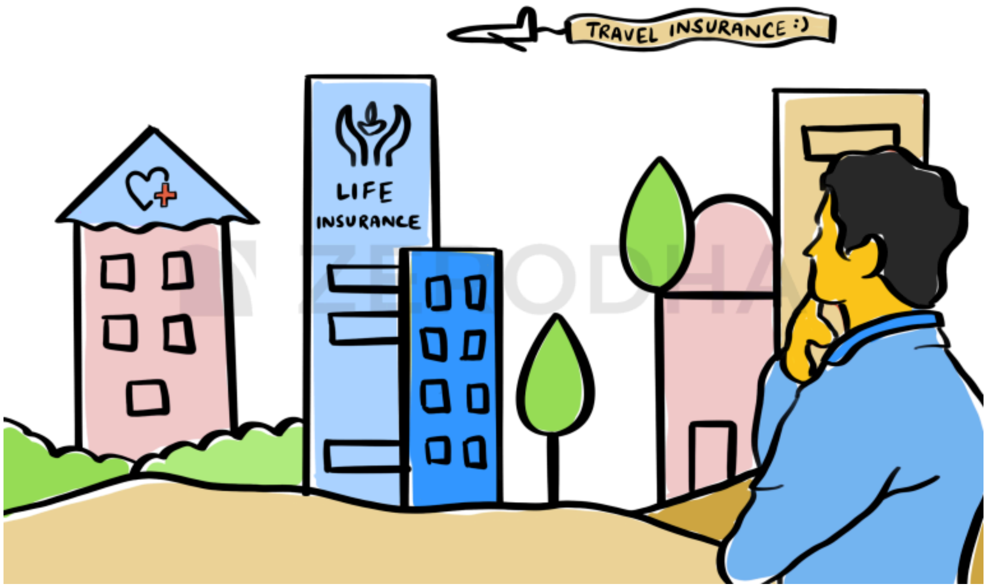
3.1 – Insurance – An Introduction

In a broad sense, businesses can be into either manufacturing or services. The previous chapter was about cement, a manufacturing business. In this chapter, we will study how to analyze the insurance sector, a service business.

This chapter will mainly cover the following:

- The insurance landscape in India
- Types of insurance companies
- The sales channels used to sell insurance
- Risk management by insurers and Reinsurance

Insurance, in the simplest terms, is protection against risk. If your family depends on your regular income, you would prefer to insure your life. Vehicle insurance could pay for damages in case of an accident. Health insurance could cover your medical expenses if you have a health-related issue. Any unforeseen event that could cost you dearly becomes easier to deal with if you had insured it.



If insurance can make life so easy, why don't all of us have insurance? Lack of awareness and inability to afford premium payments are common reasons. Those who can afford to pay premiums mostly use insurance only to save taxes. Even those who understand that insurance is essential may not see it as an urgent need. So they keep delaying the purchase of insurance. For many people, it is a psychological barrier – how can I put value into my life? Why should I think about what will happen if I meet with an accident or die? And how to discuss my death with my family? An easy way out is not having any insurance at all.

To think that psychological barriers might be more visible among the older, conservative Indians may be a fallacy. About 83% of millennials do not have life insurance. Millennials are now of working age and likely have dependents. If education and awareness, or any other solutions, do manage to bring about wider acceptance of insurance, there is tremendous potential for insurance companies to grow their business. If 83% of millennials do not have life insurance, only 17% do. It also means there is a five-fold market waiting to be tapped.

If you are an investor, the insurance sector indeed seems a hot and ripe investible opportunity. However, insurance is a tricky business. And it is regulated by IRDAI or the Insurance Regulatory and Development Authority of India. IRDAI attempts to safeguard customer interests, along with regulating selling practices, risks, and financial strength of insurance companies.

As an investor in the insurance sector, you must realize that insurance companies are in the business of acquiring risks. The risk that a policyholder is insuring is the risk that an insurance company is acquiring. So the question is, how does an insurance company make money from these risks?

The answer is twofold. Insurance companies make money from underwriting profits and investment gains. Underwriting profits occur when the premiums earned by the insurer exceed the total amount paid out in claims. The insurance company may not immediately need the funds from premiums to service claims. Until then, it can invest these funds to make investment gains, the second money-making stream for insurers.

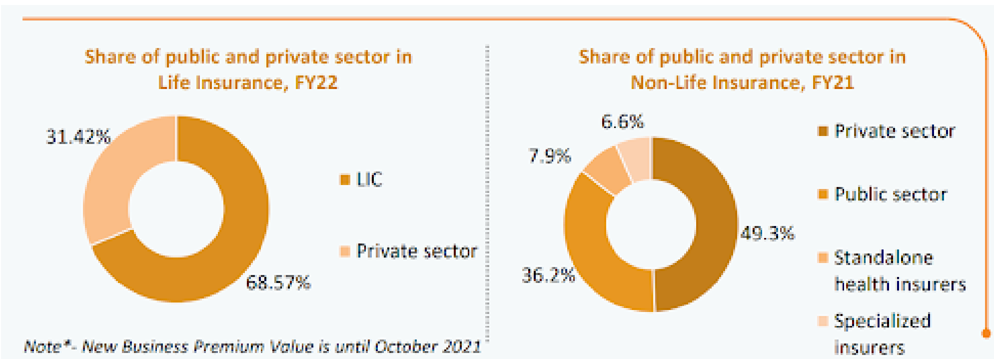
While money-making happens primarily from just two sources, insurance companies differ in the type of insurance they offer. This also impacts the insurer's approach to managing risks. Let us delve deeper.

3.2 – Types of Insurance Companies

At the top, insurance companies are classified into two categories: life and general insurance.

- Life insurers offer insurance on life and related products. Term plans, endowment plans, ULIPs, and annuities are all products from a life insurance company.
- General insurers offer medical insurance, vehicle insurance, and property insurance. A particular general insurance company might offer some or all types of general insurance.

The industry comprises both private and public players. LIC alone commands two-thirds of the life insurance market in India. It is also the only government-owned life insurer. The general insurance segment is crowded with private players. The government also promotes six general insurance companies. These are the General Insurance Corporation of India, The New India Assurance Company, the United India Insurance Company, The Oriental Insurance Company, the National Insurance Company, and Agriculture Insurance Company of India.



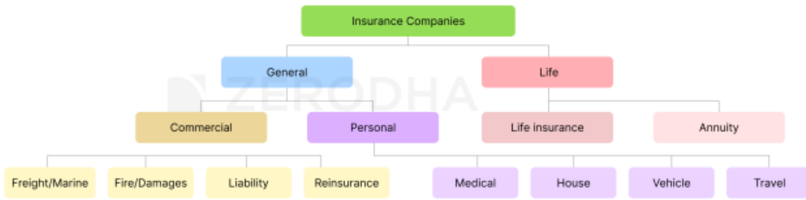
When studying the insurance sector, it is essential to understand why and how the two types of insurance companies (life and general) are different.

Life insurers typically have obligations that are long-term in nature. Let me break this down. Life insurance policies span years or even decades. People keep paying premiums for several years. So there is a considerable gap between the time an average policy is bought and when its claim is settled. Hence, the long-term nature of obligations.

During this gap, the collected premiums are lying idle. These idle funds are called "float". The life insurance company can invest the float to make investment gains. It can also take on additional investment risk because the time horizon is long. Higher risk, as you know, is taken in search of higher returns.

General insurers mostly have short-term obligations. Whether medical, vehicle, or property insurance, most general insurance policies have a maximum duration of one year. For example, you paid a medical insurance premium today. This policy will be in force until one year from today. Let's say you did file a claim after six months. The insurer will have to pay you. For general insurance companies, any liability will arise in less than one year. Therefore, investments are also for a short duration and must carry minimal risk. Of course, if the insurance was not claimed, it is a gain for the insurer.

By the way, if you have read about Warren Buffett's success, you have likely heard of the advantage his investments get from float money. Buffett's holding company, Berkshire Hathaway (BH), is a large multinational corporation. Its main business is insurance. Insurance gives BH a large pool of float money. Float is free money – no borrowing cost or obligation to share investment gains with premium payers. A larger float gives more room to take investment risks. However, if there are losses on the Float, the insurer will have to pay for it out of its own capital.



Now let's stop and ponder a bit. The ability to invest comes only if the premiums earned are more than the payments made toward claims. As an investor trying to understand the insurance sector, you must analyze where the premiums are coming from, if they are growing, whether there is any surplus after settling claims, whether all investments yield positive returns, and how the balance sheet is holding up to sustain long-term growth.

Let us first see where the premiums can come from or what are the sales channels.

3.3 – How are insurance policies sold?

Insurance is heavily reliant on selling efforts. When there is a lack of awareness around a product, marketing and selling become a significant force for increasing awareness and adoption. And those who do not look at insurance as an urgent need may require a little bit of nudge from insurance sellers. Insurance companies use multiple channels to sell their policies.

The snapshot from HDFC Life's fourth-quarter investor presentation for FY23 shows the various channels HDFC Life uses to sell its life insurance products.

- The insurer might have a **direct sales** team to sell policies to the customers. This is naturally the most profitable channel. However, insurance companies do not have a far-reaching presence across cities, towns, and villages. Therefore, they rely on channel partners or agents.
- Many individuals become **agents** for insurance companies. LIC has the largest pool of agents spread across the length and breadth of the country. Many financial planners or distributors of financial services act as agents for insurance companies. Banks also act as insurance agents but are considered separate sales channels.
- Among all financial services businesses, banks have the broadest geographical coverage. Therefore, banks are the largest distributors of insurance products. The channel of selling

insurance through banks has a name for itself – **Bancassurance**. Despite the growing digital presence of insurance companies and emerging digital distributors such as Policybazaar.com and Acko, Bancassurance remains the largest channel.

In fact, insurance companies that are part of banking groups rely the most on bancassurance and have an advantage over other standalone insurers. HDFC Bank, SBI, ICICI Bank, and Kotak Mahindra Bank have affiliated life and general insurance companies. These banks are also the largest bancassurance partners for these affiliates.

- **Group insurance**, mainly in the case of health insurance by corporate employers, is a common channel. This route takes care of the issues related to lack of awareness or affordability. Employees get health coverage for themselves and their families as part of their salary package. While this type of health insurance is cheap for an average person, the insurance company also diversifies its risk by offering coverage to a large group of people. The cost of sales is also low for the insurer as most of the selling efforts have to be made only initial stage of signing up with an organization. Once signed up, all their employees become customers. And renewal is continuous too.
- The latest technique is to sell insurance policies through **plug-ins or add-ons**. When booking a flight or hotel on a travel site, have you seen the “Add a travel insurance of ₹50000 only for ₹25”? This option is usually on the final billing page. You might not even notice it. And often, it is auto-selected, so you have to uncheck the option if you don’t want travel insurance. I think it is an exciting and shrewd cash-generation technique. The amount is not significant enough to warrant everyone’s attention. Even if you don’t like it, you may not want to spend your energy protesting a ₹25 issue. The risk for the insurer is high. But the probability of the payout becoming due in the few hours or days of that insurance is very low.

The concept is similar to chocolates placed next to the cashier’s counter at a retail store. While billing, you impulsively pick a few chocolates while not worrying about the small expense.

3.4 – Taxation on Insurance Customers

Tax saving is a powerful motivation for people to buy insurance. Premiums up to ₹1.5 lakh paid towards life insurance are tax-exempt under Section 80(C). Endowment plans, which come with some level of savings along with providing insurance, have been trendy. Taxpayers choosing the old tax regime are using these exemptions. However, taxpayers do not need these exemptions if they choose the new tax regime. A more significant number of people choosing the new regime could hurt the demand for insurance.

Similarly, exemptions under Section 10(10D) have been scrapped for annual premium payments of over ₹5 lakhs. Section 10(10D) makes maturity benefits tax-free if they are at least ten times the annual premium payment. Budget 2023 amended this provision. If annual premium payments are over ₹5 lakhs, the benefits become void. Essentially, the amendment took away tax benefits from insurance that the wealthy could enjoy.

When you are an investor in the insurance sector, you want to know how a tax policy is impacting the insurance business. The scenario can change every year with the annual budget.

3.5 – Diversification of Insurance Business

As I mentioned earlier, the business of insurance is about taking on risks. So it makes business sense to diversify these risks. Diversification has to be across geographies, age groups, customer profiles, investment assets, and the timeline of committed payouts. Let us discuss why each of these is important.

Geographies: High mortality rate in one region could be compensated for by the low mortality rates in other areas. Violence or natural calamities tend to increase the number of claims being filed; if policyholders are situated far apart, not all will have suffered the calamity of filing claims.

Age groups: Certain age groups may be more vulnerable to diseases or pandemics. For example, most cases of swine flu were in children, while the coronavirus mainly affected adults. Insuring across age groups would help life and health insurers to earn premiums from the unaffected group while settling claims from the affected groups.

Investment assets: This point is about asset allocation. Given the nature of the business risk that an insurer carries, it must carefully allocate investment assets to make optimum returns. This point is similar to the asset allocation chapter we discussed in the Personal Finance module of Varsity. The insurer must spread investments across asset classes and issuers to minimize risk and maximize returns.

Liability schedule (or timeline of committed payouts): The annuities are a fixed cost for insurers. There may also be annuities or pensions that the insurer must start paying out on pre-set future dates. The investment decisions have to account for these future cash outflows. Insurers also borrow funds to run their business. Repayment of this also needs to be taken care of. Spreading these obligations over multiple years could make it easier to honour them.

This is not an exhaustive list. Your analysis could show more ways of diversifying premium inflows.

3.6 – What is Reinsurance?

Apart from diversification, insurance companies also cover their risks by reinsuring the policies they have sold. They might reinsure all or part of their obligations. It is a great tool to protect against unusually high-payout events. For example, if there were a major earthquake in a region, homeowners' claims could go up significantly. If the insurer had reinsured part of their obligations, the hit from the payout could have been mitigated.

Reinsurance is also used to comply with the regulator's capital requirements. Insurers are required to maintain a minimum solvency ratio of 150%. What if an insurer's liabilities are too high? Its solvency ratio could fall below the minimum limit. Here, reinsurance is of great use. The insurer could transfer part of its claim-related liabilities by reinsuring some policies.

General Insurance Corporation of India, promoted by the Government of India, is the largest reinsurer in the country.

In this chapter, we covered the business of insurance and its industry landscape. The next chapter is Part-2 of this one. We will use real examples to look at how to study a life insurance company and a non-life insurance company. We will look at metrics that show the effectiveness of selling efforts, cost management, and capital maintenance.

Key takeaways:

- Insurance penetration is very low in India, and hence, there is a huge untapped market potential
- IRDAI regulates the insurance sector
- There are two types of insurance companies – life and general
- Insurance companies make money from two sources – insurance premiums and investment gains
- Insurance is sold through various channels – direct sales, agents, banks, group insurance, plug-ins
- Investors in the insurance sector have to monitor tax policies on insurance
- Being in the business of acquiring risks, insurance companies diversify risks by selling policies across age groups and geographies. Investments are diversified across asset classes.
- Reinsurance is another tool for controlling risks.

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4. Insurance (Part 2)

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4.1 – Studying the Different Types of Insurance Companies

The previous chapter set the tone for the overall insurance industry. It spoke of the market structure, sales channels, and the risks involved. In this chapter, we will understand the industry with the help of two insurers – HDFC Life and ICICI Lombard.

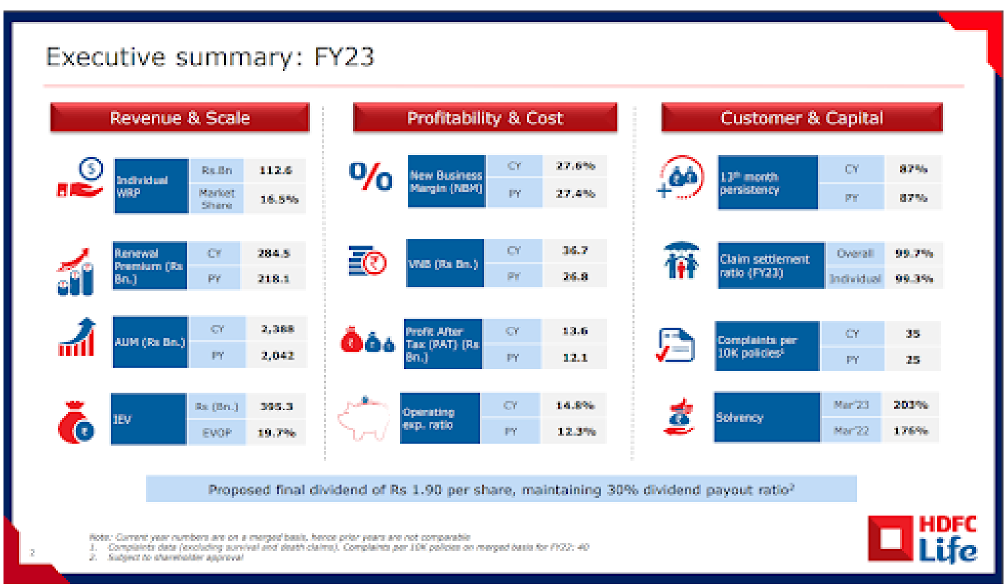
Just like stock broking or banking, insurance is a highly regulated sector; insurance companies have to disclose many data points and financial ratios on a regular basis. These data points and ratios are calculated using IRDAI-prescribed formulas. There are two advantages here –

1. The scope for data manipulation is low as the disclosure formats are fixed
2. You, as an investor analyzing the sector, don't have to crunch numbers 🙂

You only have to know how to interpret these numbers and ratios mean and figure out if they are good or bad. And that’s exactly what we will discuss in this chapter!

4.2 – How to Study a Life Insurance Company?

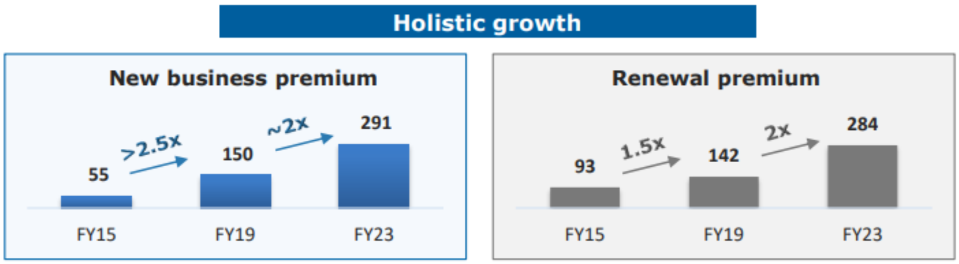
To help you understand the insurance sector better, I’ll work with the numbers of HDFC Life and explain the same. Note I’ve got the fourth quarter (FY 2023) numbers here. You can download the entire presentation from HDFC Life’s website; look for it in the investor relation section.



The executive summary gives a glimpse of the most critical parameters to be reviewed. The subsequent pages will show insights into some of these metrics. Let us dig.

Premium income: This one is straightforward. If you’ve ever bought insurance in your life, then you’d have paid a premium. The premium you pay becomes the ‘Premium Income’ for the insurance company. One might wonder if the premium income is the same as revenues because an insurance company’s business is primarily collecting premiums. The answer is no because the insurance company also earns other income which comes from investments.

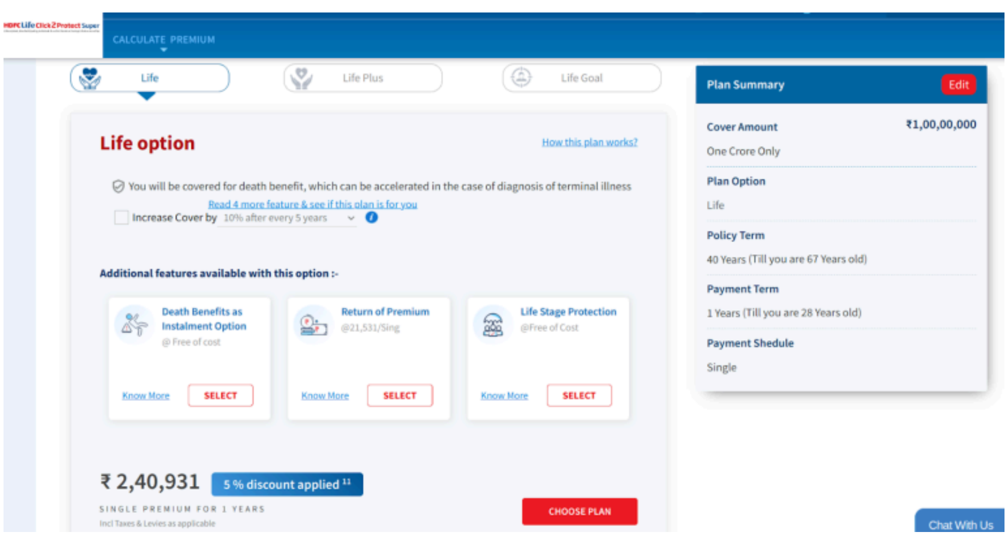
Do note that total premium income is of two types: gross premium and net premium. Gross premium is the premiums that policyholders pay. Net premium is the premium an insurance company is left with after reinsuring part of its issued policies. Further, premium income is of two types: New business premiums and Renewal Premiums.



- New business premium: It is the premium earned from issuing new policies. Continuous growth in new business premiums indicates the sales team's continuous ability to attract new business.
- Renewal Premium: It is premium earned when policies issued in the previous years were renewed. Why is this metric important? A higher share of renewal premiums in total premiums suggests that the company has been able to retain old customers. Retaining old customers is always cheaper than acquiring new customers. Effectively, if selling expenses go down, the insurer can get higher profits.

I've taken this snapshot from HDFC Life's presentation. It shows the trend in new business premiums and renewal premiums.

Annualized Premium Equivalent (APE): When you buy an insurance policy, you can pay premiums every month, quarter, or year. There is another option – you pay one lumpsum premium to get coverage on a multi-decade basis. For example, check the insurance plan by HDFC Life in this snapshot – here, I will have to pay ₹2.4 lakhs for ₹1 crore insurance for 40 years.



The lumpsum premium has to be annualized in order to make it comparable with the regular premium receipts, and also give a perspective on premium collection. Conventionally, APE is calculated by summing all the annualized first-year premiums with 10% of all single-premium policies.

In this snapshot, you can see how different the total premium and APE figures are.

Financial and operational snapshot (1/2)

Rs bn.

	FY23*	FY22	FY21	FY20
New Business Premium (Indl. + Group)	*290.9*	*241.5*	*201.1*	*172.4*
Renewal Premium (Indl. +Group)	*284.5*	*218.1*	*184.8*	*154.7*
Total Premium	575.3	459.6	385.8	327.1
Individual APE	114.0	81.7	71.2	61.4
Overall APE	133.4	97.6	83.7	74.1
Group Premium (NB)	142.4	125.1	100.3	87.8
Profit after Tax	13.6	12.1	13.6	13.0

Value of New Business (VNB): VNB measures the profitability from the new policies sold during the year. It is the present value of expected future profits from new policies issued during the year. You can learn how to calculate PV. But for studying insurance companies, you do not have to compute VNB, as they declare it with their quarterly results. Each insurer will have its own actuarial assumptions around expected policy life, future profits, and the discount rate applied to arrive at the present value. More conservative assumptions could lead to understatement of VNB, while loose assumptions could overstate the VNB. Therefore, comparing the VNB of two life insurers might not be helpful.

However, comparing with the previous year's performance could show how an insurer has been able to grow profitability. This snapshot from HDFC Life's presentation shows VNB has nearly doubled between FY20 and FY23.

Focus on profitable growth

Rs bn

Economic Profit	FY20	FY21	FY22	FY23[1]
New business Margin	25.9%	26.1%	27.4%	27.6%
Value of new business	19.2	21.9	26.8	36.7

Profitable growth

I used the term "actuarial" in the previous paragraph. Insurers hire "Actuaries" who employ statistical techniques to measure and manage risks. Accordingly, they decide on the right premium price for all policies. The techniques and assumptions used to measure risks and premiums differ across insurers.

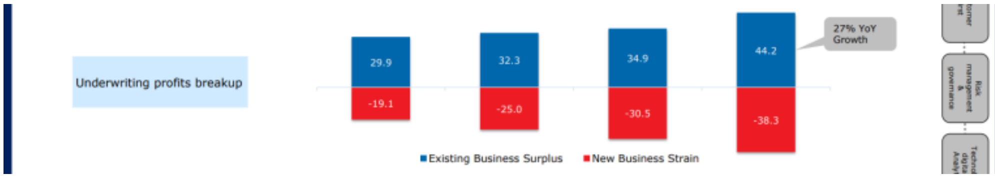
New Business Margin / VNB Margin: VNB is divided by APE for a given year to arrive at the VNB margin. It is similar to the profit margins of any business. Again, since this is based on each insurer's subjective management assumptions, comparing with peers may not help, but comparing with past performance could be useful.

An insight to draw from these metrics would be to check the growth of APE and VNB. For example, an increasing APE with a declining VNB suggests that new business is coming at lower margins. You could further dig to find out if the lower margins are due to higher selling expenses or due to selling low-margin policies.

The expense of management ratio / Operating Expense Ratio: It is the ratio of operating expenses to gross premiums received. Operating expenses include all expenses incurred as part of normal business operations – selling and distribution, administrative, servicing claims, bad debts, depreciation, etc. Interest expense is excluded.

Since this is an expense ratio, the smallest possible ratio is more desirable. And when I said earlier that the regulations are tricky, I was referring to how regulations can alter a formula. For example, IRDAI has stipulated limits on the expenses made toward selling policies. Expenses in excess of that limit have to be borne by the shareholders/owners of the business.

Underwriting profit: It is the profit generated from the core insurance operations. Out of the premium collected, the insurer has to pay commissions, brokerage, other selling expenses, and claims. What remains after paying all that is underwriting profit. The underwriting profit ratio is calculated by dividing the underwriting profits by gross premiums.



For an insurer to make underwriting profits, it must have strong underwriting practices. In simple words, the insurance seller must sell policies where the chances of claims are minimal. They cannot just reject high-risk customers, but they can charge higher premiums to accept high risks. Insurance companies also have to avoid getting defrauded.

Shareholder surplus: It is the part of profits that can be assigned to shareholders / added to equity after paying all the benefits to policyholders and setting aside a provision for future appropriations. Appropriation is used to allocate profits to specific purposes. For example, splitting profits to share with policyholders and shareholders is an act of appropriation of profits.

I got this snapshot from the FY2022 annual report of HDFC Life to show the appropriation of shareholder surplus.

Policyholders' Account (Technical Account)

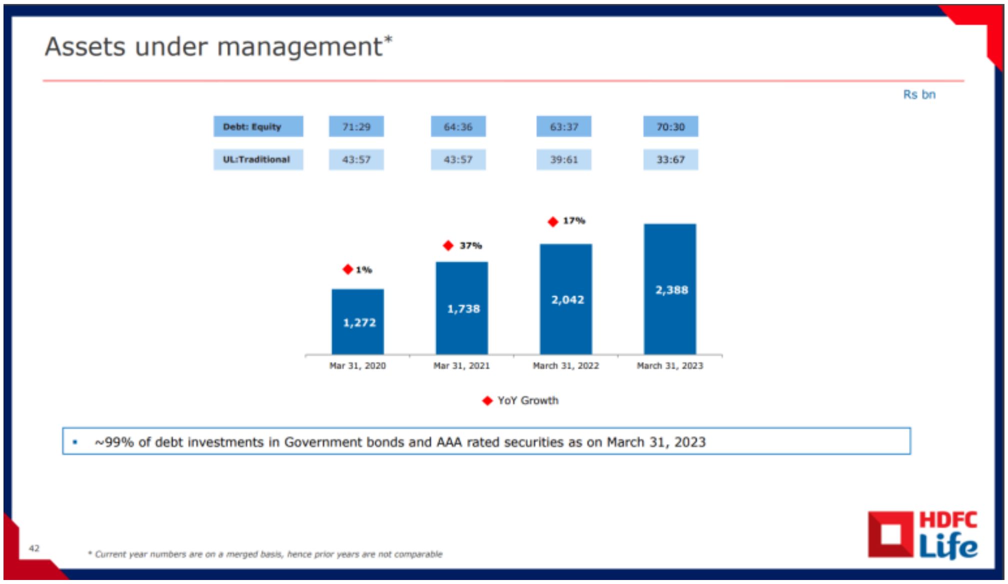
(₹ '000)

Particulars	Schedule	For the year ended March 31, 2022	For the year ended March 31, 2021
Appropriations			
1. Transfer to Shareholders' Account		11,057,243	9,915,783
2. Transfer to Other Reserves		-	-
3. Balance being Funds for Future Appropriations		(623,536)	1,075,480
TOTAL (D)		**10,433,707**	**10,991,263**

Assets under management (AUM): It is the current market value of all investments made by the insurer. Remember, this is not just the surplus from the most recent P&L, it is the accumulation and growth of all investments made so far in all previous years. AUM is made up of both shareholders' and policyholders' funds.

This slide from HDFC Life's presentation shows a break-up of the AUM on two parameters:

- Asset allocation: it shows the ratio of debt to equity
- Beneficiary composition: it shows the ratio of unit-linked plans to traditional plans. Basically, unit-linked AUM belongs to policyholders; it comes from ULIPs. The share of traditional comes from all other types of insurance policies.



Growth in AUM could be because of large surpluses during the year or a growth in the market value of the investments. Similarly, a decline in AUM could mean a loss in the market value or redemption of investments to service claims. If the premiums earned in a period were inadequate to service the claims, funds from investments could be used. A larger reservoir of AUM can help the insurer stomach losses for several quarters or years. Therefore, the larger the AUM, the better.

Claims settlement ratio: Claims settlement ratio speaks of the credibility of the insurer. The approach to understanding the claims settlement ratio is a bit nuanced. A high ratio could mean either poor underwriting or strong business practice. Insurers always market their claims settlement ratio. A high claims settlement ratio instils a sense of trust among the customers – they believe when the time comes, their claims will be honoured. As an investor, you need to dig deeper, though.

Let's say there are two insurers: A and B. A has a 97% claims settlement ratio, while B has 95%. Is A the better insurer? Not necessarily. If A is a small insurer and has settled 97000 claims out of 100,000 claims received while B has settled 95 lakh claims out of a crore received, perhaps B is a better insurer because of its size and experience.

This snapshot is from IRDAI's annual report for FY22. You can find the annual reports on [IRDAI's website](). You can see how Pramerica has received ~1000 claims while SBI Life has received over 50000 claims. The larger size of business operations comes with a greater number of claims. What matters is the organization's ability to honour claims.

Status of Individual

S.No.	Life Insurer	Claims pending at start of the period		Claims intimated / booked		Total Claims		Claims paid	
		No. of Policies	Benefit Amount	No. of Policies	Benefit Amount	No. of Policies	Benefit Amount	No. of Policies	Benefit Amount
14	Kotak Life	16	7.28	7117	606.31	7133	613.59	7049	586.15
						100%	100%	98.82%	95.53%
15	Max Life	1	0.50	31034	2076.81	31035	2077.31	30830	2008.94
						100%	100%	99.34%	96.71%
16	PNB Met Life	0	0.00	8586	717.43	8586	717.43	8357	669.69
						100%	100%	97.33%	93.35%
17	Pramerica Life	1	0.21	1060	52.83	1061	53.04	1043	51.34
						100%	100%	98.30%	96.80%
18	Reliance Nippon	4	1.48	13726	359.28	13730	360.76	13548	344.14
						100%	100%	98.67%	95.39%
19	Sahara Life	2	0.02	1164	12.82	1166	12.85	1132	12.47
						100%	100%	97.08%	97.09%
20	SBI Life	912	101.54	54874	2808.60	55786	2910.14	54140	2751.53
						100%	99%	97.05%	94.55%
21	Shriram Life	11	0.98	5854	202.18	5865	203.16	5620	167.39
					100%	100%	95.82%	82.39%	2.78%

Solvency ratio: The solvency ratio checks the ability of the insurer to be able to pay all its liabilities. It is calculated as the ratio of the Available Solvency Margin to the Required Solvency Margin.

- Required Solvency Margin (RSM) is the expected total payable amount arising from insurance claims.
- Available Solvency Margin (ASM) is the excess of AUM over all the liabilities, including claim-related liabilities.

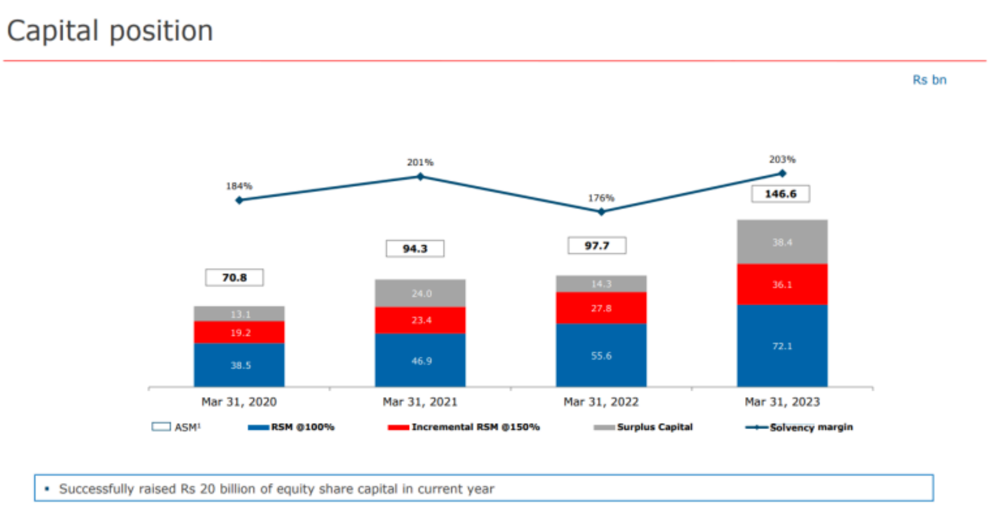
You do not have to compute this as it is part of every insurer's quarterly financial results. IRDAI mandates all insurers to have a minimum solvency ratio of 150%. The following snapshot from IRDAI's FY22 annual report shows the solvency ratios of life insurers.

STATEMENT 15

S.No.	Insurer	June 2021	September 2021	December 2021	March 2022
	SOLVENCY RATIO OF LIFE INSURERS (2021-22)				
	Private Sector Insurers				
1	Aditya Birla Sun Life Insurance Co. Ltd.	1.82	1.89	1.94	1.88
2	Aegon Life Insurance Co. Ltd.	2.74	2.93	2.89	3.33
3	Ageas Federal Life Insurance Co. Ltd.	3.08	3.03	3.14	3.12
4	Aviva Life Insurance Co. Ltd.	2.22	2.23	2.32	1.82
5	Bajaj Allianz Life Insurance Co. Ltd.	6.48	6.26	6.04	5.81
6	Bharti AXA Life Insurance Co. Ltd.	1.73	1.88	1.67	1.62
7	Canara HSBC Life Insurance Co. Ltd.	2.88	2.72	2.74	2.82
8	Edelweiss Tokio Life Insurance Co Ltd	1.84	2.06	1.90	2.11
9	Exide Life Insurance Co. Ltd.	2.19	2.07	2.02	2.17
10	Future Generali India Life Insurance Co. Ltd.	1.84	1.53	1.50	1.83
11	HDFC Life Insurance Co. Ltd.	2.03	1.90	1.90	1.76
12	ICICI Prudential Life Insurance Co. Ltd.	1.94	2.00	2.02	2.04

Let me elaborate on the concept of solvency ratio using this snapshot from HDFC Life's presentation. The "Mar 31, 2023" column shows the Required Solvency Margin (RSM) worth ₹72.1 billion. This is also the size of liabilities. The regulatory requirement of a 150% solvency ratio means its needs a cover of ₹108.2 billion (₹72.1 billion * 150%). The red-colored part of the column is this additional mandatory cover.

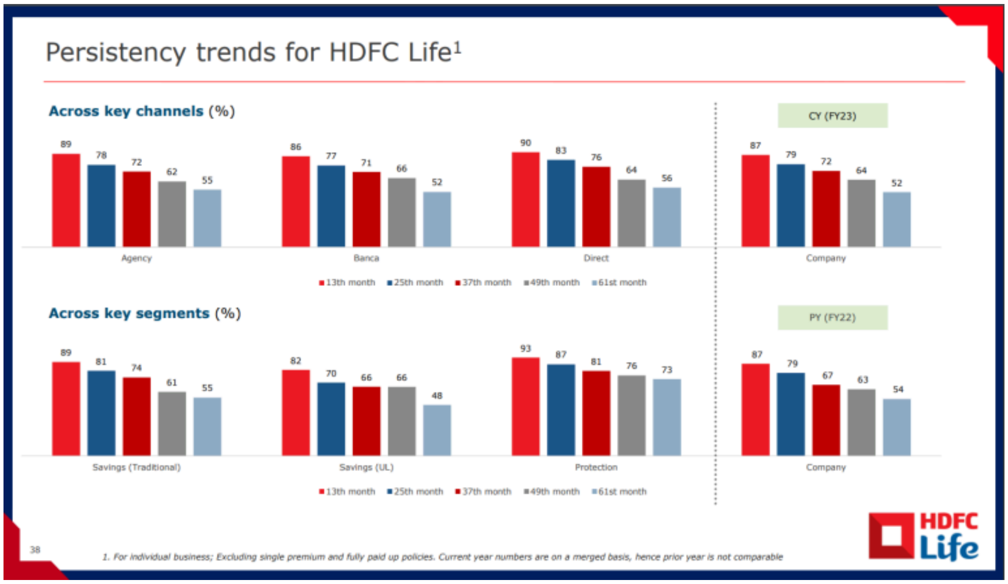
Further, the grey-colored part of ₹38.4 billion is extra cover HDFC Life has over the regulatory requirement. The total of the three portions is the available solvency margin of ₹146.6 billion against the required solvency margin of ₹72.1 billion. The ratio of ASM to RSM is the solvency ratio of 203%.



Persistency Ratio: Persistency depicts the percentage of policies that continue to be active after a certain period of time. Persistency is generally checked for the 13th month or the 61st month. Let me simplify this with an example.

Suppose an insurer sold 1000 policies in one year. If only 800 of those policies were renewed or held on after one year, i.e., 12 months, the persistency ratio for the 13th month would be 80%. If 550 policies were renewed for the sixth year, the 61st-month persistency ratio would be 55%. If you noticed, the 13th month is the beginning of the second year, 61st month is the beginning of the 6th year. Insurance companies disclose persistence for several periods. Make sure you compare them with peers for the correct period.

In this snapshot from HDFC Life's presentation, it is evident that about half of the total policies are abandoned by customers by the 61st month or after five years.



The persistency ratio might also be calculated for the total premium earnings and not just the number of policies. A higher premium-based persistency ratio than that based on the number of policies suggests that higher premium-paying customers are being able to hold on to their policies. Or that low-income customers are falling back on their premium payments.

This table is a summary of the metrics one must look at when analyzing companies in the life insurance sector.

Sr. No.	Performance Metric	Summary	How to Judge?
1	Premium Income	Represents revenues from insurance business. Gross premium plus reinsurance premium received / (paid) equals net premium	Higher the better. Check for growth rate too.
	New Premium	Premium collected from selling new policies	Check fot growth rate
	Renewal Premium	Premium collected from renewing policies issued in the previous years	Higher the better
2	Annualized Premium Equivalent	Annualized first year premiums plus 10% of all single premium policies. A large difference with premium income could mean a larger share of single premium policies	Compare with premium income
3	Value of New Business (VNB)	PV of the expected future profits from new policies issued during the year. Suitable for comparison with past performance	Higher the better. Compare with past performance.
4	VNB Margin / New Business Margin	VNB divided by APE gives VNB Margin	
5	Expenses of Mgmt / Operating Exp Ratio	Ratio of operating expenses to gross premium receipts.	Lower the better
6	Underwriting Profit	Subtract operating expenses and claim payments from gross premiums to arrive at underwriting profits	Higher the better
7	Shareholder Surplus	The part of insurance business profits that can be freely assigned to the shareholders	Higher the better
8	Assets Under Management	The market value of all assets/investments of the insurer. Includes both shareholders' funds and policyholders' funds	Higher the better, check asset allocation
9	Claims Settlement Ratio	Approved claims as a percentage of total claims received.	Dig deeper. Check for history and total number of claims processed
10	Solvency Ratio	Ratio of Available Solvency Margin to Required Solvency Margin. Minimum Solvency of 150% mandatory.	Higher the better
11	Persistency Ratio	Shows how many policies are being renewed in 2nd, 3rd or 5th years. The higher the better.	Higher the better

4.3 – How to study general insurance companies?

We have so far looked at a life insurance company. Let’s move our attention to general insurance companies. General insurance companies include – health, auto etc.

The concepts of solvency ratio and claims settlement ratio are applicable to general insurers too.

I will use snapshots from ICICI Lombard’s fourth-quarter investor presentation for FY23 to discuss other key concepts of general insurance companies.

Key Highlights

Particulars (₹ billion)	FY2021 Actual	FY2022 Actual	FY2023 Actual
Gross Written Premium	143.20	185.62	217.72
Gross Direct Premium Income (GDPI)	140.03	179.77	210.25
GDPI Growth	5.2%	28.4%	17.0%
Combined Ratio	99.8%	108.8%	104.5%
Profit after Tax	14.73	12.71	17.29*
Return on Average Equity	21.7%	14.7%	17.7%
Solvency Ratio	2.90x	2.46x	2.51x
Book Value per Share	163.56	185.57	211.61
Basic Earnings per Share	32.41	25.91	35.21

*PAT includes reversal of tax provision of ₹ 1.28 billion in Q22023
Merged figures are presented from April 1, 2021 onwards, hence figures of FY2021 are not comparable

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Premium Income

- Revenue from the insurance business is also called **Gross Direct Premium Income (GDPI)**. It consists of the actual premiums collected from selling insurance policies.
- **Gross Written Premium (GWP)** is the sum of GDPI and reinsurance inward premium. It includes the premium received for reinsuring the obligations of some other insurer.
- **Net Written Premium (NWP)** is calculated as GWP minus the premium paid for buying reinsurance.

Loss Ratio

Particulars	FY2022	FY2023	Q42022	Q42023
Motor OD	68.1%	72.6%	72.9%	69.4%
Motor TP	74.0%	72.2%	78.3%	86.5%
Health,Travel & PA	91.7%	77.3%	76.6%	75.5%
Crop	107.9%	80.1%	125.5%	-196.8%
Fire	53.1%	49.3%	30.2%	50.3%
Marine	77.6%	72.4%	72.8%	65.1%
Engineering	69.3%	55.1%	67.4%	11.6%
Other	51.3%	63.0%	47.0%	72.9%
Total	**75.1%**	**72.4%**	**72.0%**	**74.2%**

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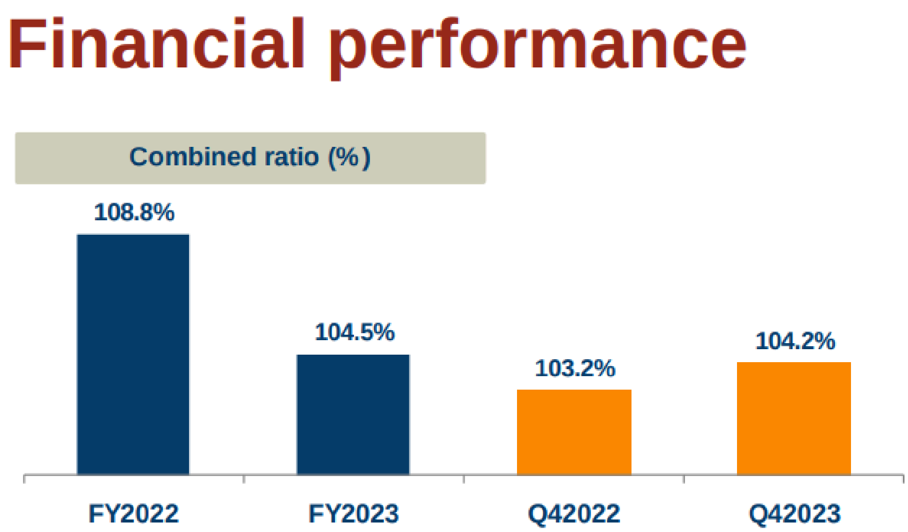
Underwriting expense ratio: Underwriting expenses are incurred while selling or renewing policies. Commissions, brokerage, incentives, processing, verification, etc are all part of underwriting expenses incidental to selling or renewing policies. The ratio is calculated by dividing underwriting expenses by gross premium collections. A lower underwriting expense ratio is important to achieve better profitability.

Loss Ratio: The ratio of total claims payout to gross premium. A smaller Loss Ratio is desirable. A high loss ratio suggests that maybe the premiums are priced too low or the basket of policyholders is not adequately diversified.

Combined Ratio: Combined ratio is the sum of Underwriting expense and Loss ratios. A combined ratio of less than 100% suggests that claim payouts are less than the premiums received. Therefore, a smaller combined ratio is preferable. A combined ratio of more than 100% suggests underwriting losses – claim payouts are higher than the premiums received. This is the case for ICICI Lombard too.



However, this does not necessarily mean net losses for the insurance company. The company could be making gains on investments, thereby having a positive bottom line. A combined ratio of more than 100% for several quarters, however, could be a red flag. You could also compare the combined ratio of a company with the industry average to understand its position with respect to peers.

This table summarizes the metrics one could look at while studying non-life insurers.

Sr. No.	Performance Metric	Summary	How to Judge?
1	Premium Income	Represents premium collections.	Higher the better. Check for growth rate too.
	Gross Direct Premium Income (GDPI)	It is the actual revenue earned from collecting premiums	Higher the better. Check for growth rate too.
	Gross Written Premium (GWP)	It is the sum of GDPI and reinsurance premium collected	Compare with GDPI. Higher NWP than GDPI means higher net risk acquired
	Net Written Premium (NWP)	GWP minus reinsurance premium paid.	
2	Underwriting Expense Ratio	Ratio of underwriting expenses to GDPI. The lower the better	Lower the better
3	Loss Ratio	Ratio of total claims paid to GDPI. The lower the better.	Lower the better
4	Combined Ratio	Sum of Underwriting Expense and Loss Ratios. Lower the better. Combined ratio of less than 100% preferred	Lower the better
5	Claims Settlement Ratio	Approved claims as a percentage of total claims received.	Dig deeper. Check for history and total number of claims processed
6	Solvency Ratio	Ratio of Available Solvency Margin to Required Solvency Margin. Minimum Solvency of 150% is mandatory.	Higher the better

Key Takeaways:

- Life insurance companies have to manage long-term risks and liabilities. Therefore, the critical metrics are also long-term – renewal premium, persistency, AUM, the value of a new business, and embedded value.
- General insurance companies have to manage short-term liabilities. Therefore, the critical metrics are related to revenue and cost components.
- Solvency and Claim Settlement Ratios are critical for both types of insurers.

Module 15. Sector Analysis

1. 1 Sector analysis overview
2. 2 Cement
3. 3 Insurance (Part 1)
4. 4 Insurance (Part 2)
5. 5 Information Technology
6. 6 Automobiles (Part 1)
7. 7 Automobiles (Part 2)
8. 8 Banking (Part 1)
9. 9 Banking (Part 2)
10. 10 Steel (Part 1)
11. 11 Steel (Part 2)
12. 12 Hotels (Part 1)
13. 13 Hotels (Part 2)
14. 14 Retail (Part 1)
15. 15 Retail (Part 2)

5. Information Technology

← Previous Chapters Next →

5.1 Introduction

In the previous chapter, we studied the parameters unique to the insurance industry. Here, we will explore the performance metrics specific to the Information Technology (IT) industry. While insurance was tricky due to the regulations in the sector, IT is tricky because of its global nature.

Among all sectors, Indian IT was perhaps the first to achieve global prominence. From exporting IT services worth a little over $6 billion in 2000-01 to about $245 billion in 2022-23, Indian IT has come a long way. Interestingly, while the sector has grown 40x in USD terms, it has grown ~80x in INR terms. This is because the INR has depreciated against the USD over these decades. For a business engaged in exports, a depreciating currency is like a cherry on the cake – earn foreign exchange and then convert it to extract even more value in INR.

The IT sector had its humble beginnings in the 1990s when it mainly exported services such as insurance claim processing, payroll and HR maintenance, and call centers. Fast forward two decades to 2023, and the sector has become a behemoth. Digitalization, cloud computing, AI-driven insights, consulting, and cybersecurity are some of the many sophisticated services the IT sector provides. From less than 2% about two decades ago, India's share in global IT revenues has soared to about ~35%.

The IT sector is also a major employment generator. Indian IT employed over 51 lakh employees in 2021-22. This figure does not include the lakhs of employees working at the foreign offices of prominent players like Tata Consultancy Services and Infosys. Remuneration is, in fact, the biggest cost for IT companies.

Over the years, automation and AI have largely replaced repetitive services like call centers and payroll maintenance. A key driver for the success of Indian IT firms in the face of automation is their ability to stay relevant. They have constantly spent on new technologies, upskilled their workforce, and focused on innovation.

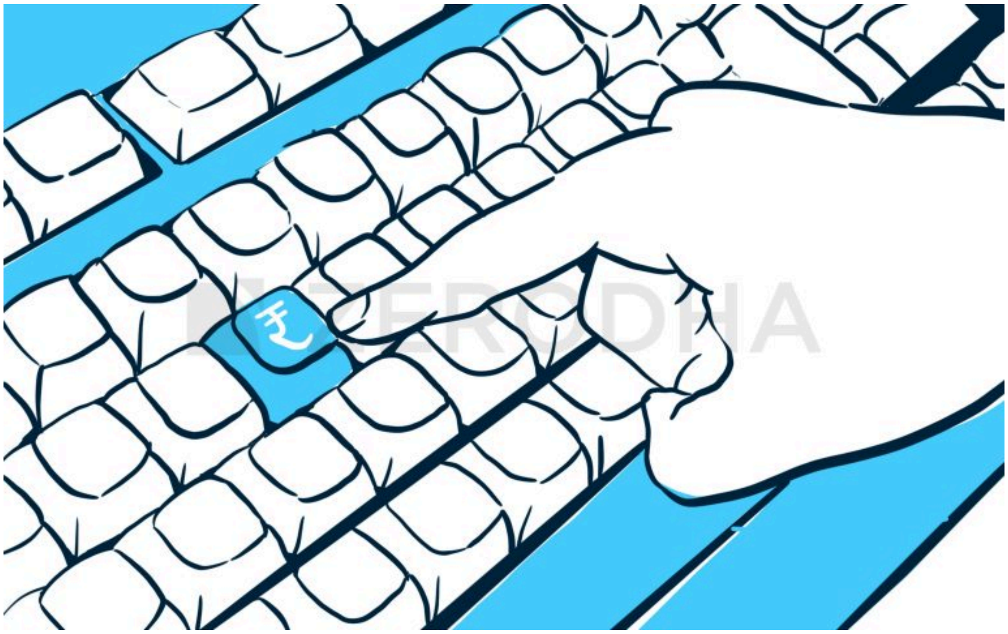
5.2 Features of Indian IT

Service business: Indian IT is almost entirely service oriented. They hardly sell any hardware. Software used to be a product, but the cloud transition has made it a service. Remember SaaS or Software as a Service? Previously businesses would buy software packages from IT companies to digitalize their processes. Now they buy subscriptions for regular payments so that the IT company can continuously improve and update the product. IT companies also prefer this arrangement as it is not just a one-time software sale but a subscription service that brings regular revenues.

Tethered to global events: About three-fourths or 75% of the total revenues of Indian IT come from outside India, with the US alone commanding ~60% share. An economic boom in these countries triggers IT spending, and Indian IT gets a boost in revenues. An economic downturn, on the other hand, hits revenues. A large part of IT has become essential to the operations of many businesses. During a downturn, the demand for augmented or experimental services mainly declines while that for essential services remains stable. Therefore, a significant revenue decline due to a recession may be rare.

Exposure to foreign exchange: You may call this feature a derivative of the previous one, as both are mostly related. Forex exposure is mostly seen as a good feature for an Indian exporter. India is a developing country witnessing a steady depreciation in INR.

How does an exporter benefit from a depreciating currency? Let's say Infosys sold a service for US$ 1,000 in 2013 when the USD/INR exchange rate was ~₹50. When converted into INR, Infosys made ₹50,000 in 2013. If the same service were sold for US$ 1,000 today when the exchange rate is ~82, Infosys would make ₹82,000. Effectively, Infosys made more money simply on account of INR depreciation.



The INR could depreciate for reasons internal or external to India. If high inflation has caused INR depreciation, it is mainly an internal issue. But when the Russia-Ukraine war pushed up the demand for USD, the INR depreciated due to external factors.

Please also be mindful of any INR appreciation, which could show muted growth. The point to take home is that the slow growth could be due to currency fluctuations rather than a slow business.

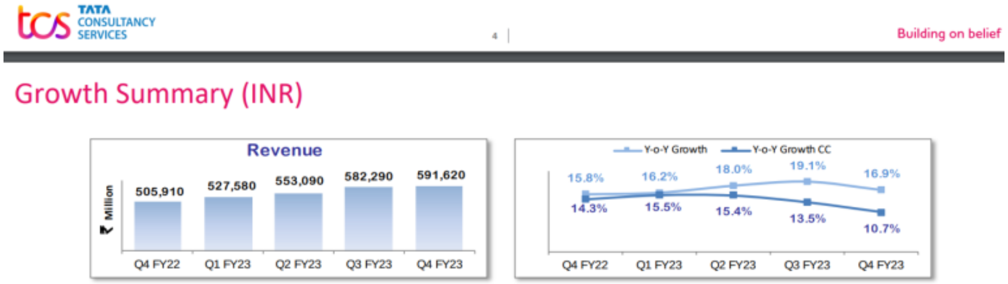
Regulations: Every country or region is developing its version of laws around cyber security, data management and ownership, and digital privacy. Since IT companies cater to customers in tens or even hundreds of countries, they must navigate each of these laws. The cost of compliance can be high. Monitoring an IT company's litigations in foreign countries might be prudent.

5.3 Key Performance Metrics of IT Companies

As a sector, IT is mostly organized, formalized, and structured. The value chain is also not too big – the company hires talent to develop products that business clients consume. Therefore, a basic fundamental analysis should ideally be adequate for studying the IT sector or its companies. However, I also seek the following information to gain deeper insights.

- **Growth and constant currency growth**: Here is a snapshot of TCS' investor presentation for FY2023. The graph on the right shows revenue growth in two terms – Reported and CC. CC means constant currency. Constant currency growth shows business performance without any effect of exchange rate fluctuations. Reported growth accounts for currency fluctuations. As you can see in this particular fact sheet, CC growth of 10.7% is lower than the reported growth of 16.9% in Q4FY23. The difference between CC and reported growth numbers is indicative of INR depreciation over the year. And if you actually check the exchange rates, the INR depreciated 8.2% against USD, 6%

against EUR, and 1.6% against GBP. By implication, the actual business grew 10.7%, but it was magnified to 16.9% due to INR depreciation.



- **Order book**: Let's assume you are a baker. You sell each cake for ₹500. Today, you received orders for 25 cakes. Of those, you have to deliver ten cakes today, five tomorrow, and the rest the day after that. Today, your revenue will ₹5000 (₹500*10), but your order book will be ₹12,500 (500*25). Similarly, IT companies have an order book. They receive projects that have to be delivered over time. The total value of the project goes into the order book. The part that was delivered during the reporting period is recorded as revenues. In the case of TCS in FY23, it earned revenues worth $27.9 billion and received orders worth $34.1 billion. Here, the order book is 1.2x the size of FY23 revenues. An order book size larger than revenues suggests strong demand.
- **Unearned revenues**: Certain customers might make advance payments. Just like orders can be placed in advance, customers can also make advance payments. If the work against these payments was not delivered when the payment was received, those payments could not be recorded as revenues. Therefore, they make a separate liability item on the balance sheet.
- **Unbilled revenues**: A project, or a part of it, could be delivered in advance. The invoice for such projects is not raised yet, and the client has not paid up. Such revenues are recorded as assets in the balance sheet. Unbilled revenues from time-based contracts are classified as trade receivables. Unbilled revenues from fixed-price contracts are classified as non-financial assets.
  Part or all of these unbilled revenues may or may not be recovered. Therefore, there is credit risk. The size of unbilled revenues also gives visibility into future revenues.
- **Number of clients / new clients**: IT companies offer B2B services. Their clients are primarily other businesses. Businesses spend massive amounts of money on IT. Therefore, each new client is a big boost to the revenues. And every client lost is a dent in the revenues. A good measure of growth is finding the number of new clients added in a given quarter or year. You could further understand the quality of these additions from the value brought by these clients. A client billing $10 million annually is surely more profitable than a client billing $1 million. This snapshot from Infosys' FY23 year-end results shows that $1 million+ clients increased from 853 in Mar-2022 to 922 in Mar-23. Similarly, $100 million+ clients grew from 38 to 40. Concentration risk seems high given that only 25 out of 1872 clients make up ~35% of total revenues. Losing any of these top 25 clients could perhaps hurt more than losing all of the bottom 25 clients.

Infosys®
Navigate your next

Fact Sheet
Consolidated Financial Data - Fourth Quarter, Fiscal 2023

Client Data

	Quarter ended		
	Mar 31, 2023	Dec 31, 2022	Mar 31, 2022
Number of Clients			
Active	1,872	1,850	1,741
Added during the period (gross)	115	134	110
Number of million dollar clients*			
1 Million dollar +	922	912	853
10 Million dollar +	298	294	275
50 Million dollar +	75	79	64
100 Million dollar +	40	38	38
Client contribution to revenues			
Top 5 clients	13.0%	13.1%	11.8%
Top 10 clients	20.1%	20.5%	19.4%
Top 25 clients	34.7%	35.3%	35.4%
Days Sales Outstanding*	62	68	67

**LTM (Last twelve months) Revenues*

- **Attrition rate**: The attrition rate is the percentage of employees who left the organization in a given period. Every organization has an attrition rate. But why is it a critical metric for IT? Talent is the primary input at IT companies. Employees are their highest cost. Employees leaving the organization are an even higher cost.

When employees leave, expenses that the organization must have incurred on training and upskilling them become a sunk cost. The management has to find their replacement. Finding, training, and inducting replacements costs time and money. A high attrition rate could make IT companies desperate to fill positions by offering higher salaries, thereby increasing costs.

A high attrition rate across the industry, as was seen in 2022, suggests high demand for talent. Increased digitalization after Covid-19 led to higher demand for IT services. IT companies, in turn, hired more employees. Higher demand led to employees switching jobs for higher salaries. Organizations started poaching each other's employees, thereby pushing up the overall industry attrition rate.

Attrition rates might differ across sectors or industries. A 10% attrition rate might be too high for one sector but acceptable for another. Therefore, studying the attrition rate is more meaningful when compared with other IT companies.

You could use the following table as a guide for the Key Performance Metrics for IT companies.

2022-23	TCS	Infosys	HCL	Wipro	LTI Mindtree
Revenue Growth 1 yr					
-Reported	17.6%	11.7%	18.5%	14.4%	27.1%
-Constant Currency	13.7%	15.4%	13.7%	11.5%	19.9%
Order book $ Bn	34.1	9.8	8.9	4.1	4.9
Unearned revenues	4,846	7,163	4,701	2,268	327
Unbilled revenues	14,935	16,738	5,934	6,052	2,936
Revenues ₹ Cr	225,458	146,767	101,456	90,488	33,831
Number of clients	2,705	1,872	1,608	1,441	728
Net new client additions	645	458	110	435	126
Attrition rate	20.10%	20.90%	19.50%	14.10%	20.20%
Source: Company Filings					
All attrition numbers are for the last 12 months, except Wipro which has reported attrition on a quarterly annualized basis.					

Apart from the KPIs mentioned above, some IT companies might also mention net recurring revenues (NRR), which measures how much the repeat customers of last year spent this year. An NRR of more than 100% suggests that repeat customers have spent more on the company's services this year than they did last year. It basically shows customer loyalty. It is a good measure to highlight revenue growth when decent and consistent profitability may not have been achieved.

5.4 – Risks

In the previous chapters on cement or insurance, studying the value chain and ratios helped identify risks. Certain risks, which are qualitative, have a higher probability of occurrence in the IT sector. This is perhaps because of the B2B nature of the business. Insurance, cement, or toothpaste can be sold to millions and millions of consumers. However, IT services are generally sold to organizations. The global nature of the sector also adds to the complexity. Let us explore the risks thus associated.

- **Concentration risk**: Concentration risk arises when there is excess dependence on something to run the business. In the case of IT, concentration can be of at least three types:
  - Region: Indian IT is global but has excess dependence on countries or regions where it makes most of the revenues. For most IT companies, the US is a large source of revenue. An economic downturn in the US or a negative regulation could seriously dent the business.
  - Client: Excess dependence on a few clients could reduce the business to being at the mercy of those clients. As we saw earlier, only 25 clients contributed to 35% of Infosys' business in the fourth quarter of FY23. Infosys' revenues could be badly hit if any of these top 25 clients go bankrupt or decide to look for another service provider.
  - Sector: You will see that IT companies disclose segment-wise revenues in their filings. This snapshot shows TCS' revenue break-up based on the sector their clients are from. Here, concentration risk comes from excessive dependence on a sector. A sector cannot go bankrupt like a client. However, a slowdown in a sector could cause clients from those sectors to curtail their IT spending.

Growth by Domain

Vertical (%)	Q4 FY22	Q4 FY23	Y-o-Y CC Growth	FY22	FY23	YoY CC Growth
BFSI	31.7	**31.4**	**9.1**	32.1	**31.7**	**11.8**
Retail & CPG	15.3	**15.6**	**13.0**	15.0	**15.8**	**19.7**
Life Sciences & Healthcare	10.1	**10.4**	**12.3**	10.0	**10.2**	**13.3**
Manufacturing	10.0	**9.9**	**9.1**	9.9	**9.9**	**13.0**
Technology & Services	8.7	**8.7**	**9.2**	8.7	**8.8**	**13.7**
Communication & Media	6.9	**6.5**	**5.3**	6.7	**6.6**	**14.0**
Regional Markets & Others	17.3	**17.5**	**14.6**	17.6	**17.0**	**12.8**
Total	100.0	**100.0**	**10.7**	100.0	**100.0**	**13.7**

- **Foreign exchange fluctuations**: Excess concentration of revenues in one country or region also exposes the business to their currency. So there is a risk of concentration in one foreign currency. Additionally, excessive currency rate fluctuations can impact the profitability of the business. We know that appreciation in foreign currency is favorable for Indian IT companies, but depreciation could cause an adverse impact.

  Let's say a customer has agreed to pay $1,000 for a project. When entering the contract, USD/INR was at ~82. So the expected collection was ₹82,000. By the time the project was completed, INR had appreciated, and USD/INR was at ~78. The actual collection turned out to be just ₹78,000. This will impact profitability. While IT companies have dedicated teams to use derivatives to manage the impact of currency fluctuations, maintaining the teams is also a cost. And extreme fluctuations might be hard to insulate from.

- **Technological obsolescence**: IT companies are in the business of technology. One thing that is constant in technology is change. Technological changes can be fast. AI has given a power boost to these changes. Still, their offerings could become obsolete. There are also legacy issues – while a cheaper technology might be available, replacing the older one with a newer one might be expensive and cumbersome.
  IT companies maintain enormous budgets to train and upskill their employees to keep up with the latest advancements. However, there is always a risk of these efforts falling short. If you are an investor in the sector, watch how companies react to and participate in technological changes.

- **Cybersecurity**: The entire business of IT companies is digital. Everything is connected. Therefore, everything is also facing cyber threats. IT companies themselves offer cybersecurity solutions to their clients. Cyberattackers often want to attack cybersecurity providers. If they strike an IT company, it could open access to all their clients. The consequences of such a mishap could range from small to tremendous.

IT companies might create redundancies to protect themselves, their data, and their clients. For example, they could maintain a data warehouse that exactly copies every data and action of the main business operations. So if the primary operations are under attack, the backup at the data warehouse could be used to revive operations.

Backups are called redundancies because extra resources are employed just to copy and store the data. But redundancies are important in the face of extreme events. Some organizations also maintain redundancies of redundancies.

5.5 – Conclusion

Indian IT is largely an organized sector. It draws a significant part of its business from foreign clients. Therefore, whether good or bad, the impact of geopolitics, regulations, and foreign exchange fluctuations is more pronounced. Being a service business, it is heavily dependent on its human resources. Due to its B2B nature, client addition is a critical factor.

In this chapter, we studied the IT sector, which is service oriented and where new clients are an important indicator of business performance. In the next chapter, we will examine the automotive sector, which is mainly product-oriented and where volume sales are an important performance indicator.

Key Takeaways:

- The Indian IT industry has grown from $6 billion in 2000-01 to $245 billion in 2022-23. India’s share in global IT revenues is 35%.
- Indian IT is mostly a service-oriented business.
- About 75% of the Indian IT industry’s revenues come from outside India. The industry is largely impacted by global economic conditions, especially the US economy.
- Most of the revenues are earned in foreign exchange. So, INR depreciation is beneficial for IT companies.
- Due to their global presence, Indian IT companies must comply with several regional laws and regulations.

- Key performance metrics of IT companies include revenue growth, order book, unearned revenues, unbilled revenues, new client addition, and attrition rate, among others.
- Concentration risk, foreign exchange fluctuations, technological obsolescence, and cybersecurity are major risks for the sector.

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58 comments

1. *ROHIT BAHETI* says:
   December 26, 2024 at 10:12 pm

   HI Vineet, can we have a sector analysis on the Health Care Sector.

   Reply
2. *Kiran* says:
   July 18, 2024 at 7:16 pm

   Very nicely covered. Crisp & clear. Please do Power / Renewable energy sector analysis.

   Reply
   - *Vineet Rajani* says:
     July 19, 2024 at 9:17 am

     Thank you for the kind words, Kiran. Your suggestion is noted. 🙂

     Reply
3. *Kireeti Dannasi* says:
   May 21, 2024 at 2:58 pm

   This module is like a treasure trove. Thank you Vineet Rajani🙌. Please add the real estate sector analysis

   Reply
4. *Kireeti Dannasi* says:
   May 21, 2024 at 2:55 pm

   Very insightful

   Reply
5. *Amit* says:
   January 15, 2024 at 11:39 am

   Hi Vineet, great article.
   How can we know about the new clients that an IT company signs, and the revenue that new clients are

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6. Automobiles (Part 1)

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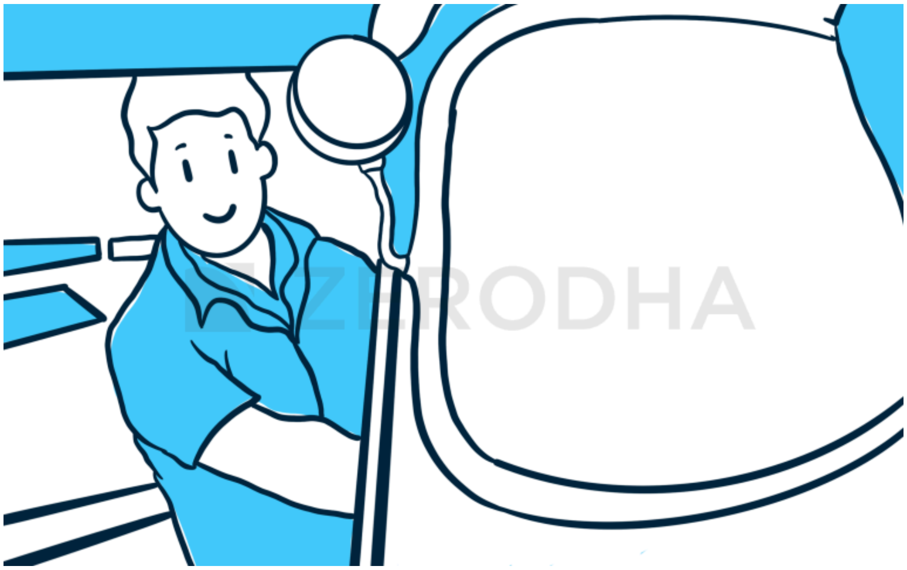
6.1 – Automotive: An Introduction

The previous chapter was about the IT sector, a primarily B2B service business. This chapter will look at the automotive sector, mainly a manufacturing business. Sure, servicing is a huge part of the automotive sector, but it comes after the goods are produced and sold.

The automotive sector is an ecosystem. It comprises several moving parts. It has many sub-segments depending on the type of vehicles or customers. The vendors or suppliers to the automotive sector are also an industry of their own.

For example, a standard car is built of roughly 30,000 parts, including nuts and bolts. Engine, gearbox, chassis, axle, fuel tank, tires, batteries, airbags, glass, mirrors, handles, lights, and seats are just a few parts of a car that an amateur like me can think of. Today's smart cars also have Bluetooth, wifi, digital screens, parking sensors, safety sensors, and GPS, among other features. Each of these parts is further made of several components.

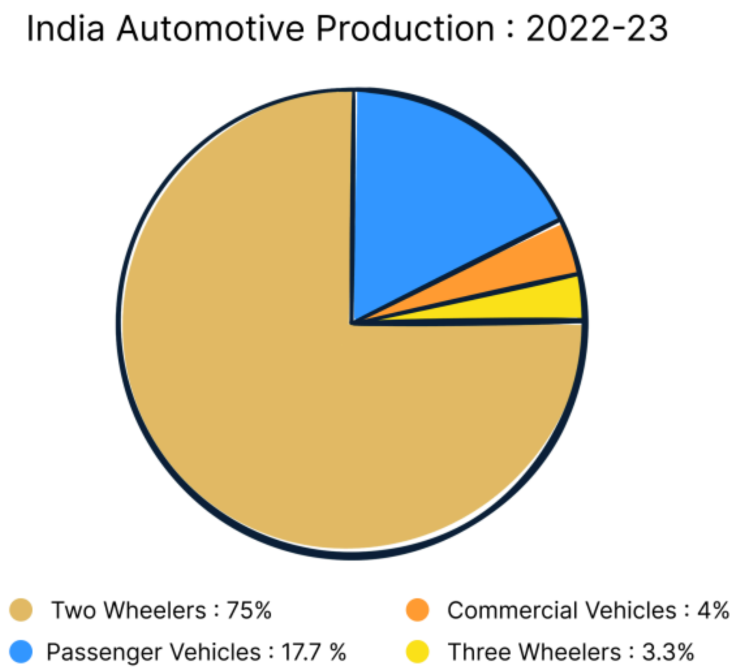
Automobile manufacturers do not make these inputs themselves. Instead, they are mostly assembly lines. For example, Maruti Suzuki's production plant in Manesar and Tata Motors' plant in Pune are both assembly plants. They buy most parts and components from outside vendors. These vendors are called Original Equipment Manufacturers (OEMs). Each automobile company maintains multiple vendors for each component, making their vendor list run into thousands of names.



In this chapter, I endeavor to address all segments and ancillary sectors of the automobile industry. I will also dedicate separate chapters to some ancillary sectors. Let us first have a look at the landscape of the Indian automotive industry.

6.2 – The Automotive Sector in India

- In terms of volume, India surpassed Japan in 2022 to become the third-largest car market in the world. China sold 26 million cars, while the US sold nearly 14 million. India stood at a distant third with 4.6 million cars.
- Overall, India produced 26 million units in 2023. This includes two-wheelers, three-wheelers, and commercial vehicles apart from cars. India produced 26 million units in 2022-23. This pie chart shows a break-up of the Indian automobile industry.
- Two-wheelers account for the largest share of automobile sales in the country. Since a median Indian household is still not at a middle-income level, a larger share of two-wheelers than four-wheelers is justified. (Did you know that the demand for two-wheelers is usually expected to be strong in the years when the monsoon season was good?)
- Passenger vehicles include cars and vans. While we worry about traffic snarls in all Indian cities, on average, only one among twelve houses owns a car in India. That is roughly 8% of households. This number is over 50% in the developed countries.
- Trucks and buses make up the commercial vehicle segment. Commercial vehicles exhibit different demand patterns than consumer vehicles.
- Three-wheelers make a very small amount of the overall vehicle production distribution. They are often seen as a blessing in crowded metro cities.



- India is the largest tractor manufacturer, second-largest bus manufacturer, and third-largest heavy truck manufacturer.
- The preference for diesel cars is on the decline. From nearly 60% of the total industry volumes around 2013, diesel cars now account for less than 20%.
- While Internal Combustion Engine (ICE) vehicles make up most of the total automobile market, the adoption of electric vehicles is fast accelerating. In terms of sales, the Government of India wants 30% of all cars and 70% of all commercial vehicles to be electric by 2030.

By the way, ICE vehicles are regular engine vehicles powered by petrol, diesel, or gas. ICE vehicles run the combustion of fossil fuels. Electric vehicles do not run on combustion.

6.3 – Analyzing Business Performance

We will focus on volumes and product mix to understand the business performance. Let’s enlist the parameters.

Maruti Suzuki Production Volume: April 2023

01 May 2023

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The production volume for **April 2023** is as follows:

Category: Sub-segment	Models	Production in April	
		2023	2022
A: Mini	Alto, S-Presso	16,918	22,655
A: Compact	Baleno, Celerio, Dzire, Ignis, Swift, WagonR, OEM Model	83,256	76,978
A: Mini + Compact Sub-segment		**100,174**	**99,633**
A: Mid-Size	Ciaz	1,145	1,756
A: Passenger Cars		**101,319**	**101,389**
B: Utility Vehicles	Brezza, Ertiga, Fronx, Jimny, S-Cross, XL6, OEM Model	31,877	40,399
C: Vans	Eeco	10,901	11,166
Total Passenger Vehicle		**144,097**	**152,954**
Light Commercial Vehicles	Super Carry	999	4,438
Grand Total (Passenger Vehicle + Light Commercial Vehicles)		**145,096**	**157,392**

- **Production volume**: It is the number of cars or vehicles manufactured in a quarter or month. Steady growth in production volumes is preferred. The automaker might also add notes to their production report. These notes could give insights into the business. For example, in the notes to this production volume table, Maruti Suzuki mentioned how it could not hit the production target due to a shortage of electric components.

While all automobile companies report volume sales, very few report production volumes in a comprehensive manner.

This is a snapshot from SIAM's website. It shows production volumes across vehicle types.

Automobile Production Trends

(In Numbers)

Category	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23
Passenger Vehicles	4,020,267	4,028,471	3,424,564	30,62,280	36,50,698	45,78,639
Commercial Vehicles	895,448	1,112,405	756,725	6,24,939	8,05,527	10,35,626
Three Wheelers	1022,181	1,268,833	1,132,982	6,14,613	7,58,669	8,55,696
Two Wheelers	23,154,838	24,499,777	21,032,927	18,349,941	1,78,21,111	1,94,59,009
Quadricycles	1,713	5,388	6,095	3,836	4,061	2,897
Grand Total	**2,90,94,447**	**3,09,14,874**	**2,63,53,293**	**2,26,55,609**	**2,30,40,066**	**2,59,31,867**

- **Sales Volume**: It is the actual number of units sold to customers. This snapshot is from Maruti Suzuki's monthly sales report. If you compare this image with the production snapshot, you will notice that Maruti Suzuki sold almost 15000 more units than it produced in April 2023. But in April 2022, it sold about 7000 lesser units than it produced in the same month.

marutisuzuki.com/corporate/media/press-releases/2023/may/maruti-suzuki-sales-in-april-2023

The sales figures for **April 2023** are given below:

Category: Sub-segment	Models	April 2023	April 2022
A: Mini	Alto, S-Presso	14,110	17,137
A: Compact	Baleno, Celerio, Dzire, Ignis, Swift, Tour S, WagonR	74,935	59,184
Mini + Compact Segment		**89,045**	**76,321**
A: Mid-Size	Ciaz	1,017	579
Total A: Passenger Cars		**90,062**	**76,900**
B: Utility Vehicles	Brezza, Ertiga, Fronx, S-Cross, XL6, Grand Vitara	36,754	33,941
C: Vans	Eeco	10,504	11,154
Total Domestic Passenger Vehicle Sales (PV)		**137,320**	**121,995**
Light Commercial Vehicles (LCV)	Super Carry	2,199	4,266
Total Domestic Sales including LCV (PV+LCV)		**139,519**	**126,261**
Sales to other OEM		**4,039**	**5,987**
Total Domestic Sales (PV+LCV+OEM)		**143,558**	**132,248**
Total Export Sales		**16,971**	**18,413**
Total Sales (Total Domestic + Export)		**160,529**	**150,661**

An automaker might sell more or fewer units than the number produced. Continuously lower sales volume than production could indicate inventory build-up. Continuously higher sales than production cannot last for long. You cannot sell what you have not produced. But higher sales numbers suggest increasing demand.

Higher demand has to be met with higher production. This may not be possible if the production capacity is already fully used. If the automaker is convinced that the demand will continue, it can add capacity. Capacity addition comes with significant capital expenditure. Debt levels could also rise to fund capital expenditure. All automobile manufacturers report sales volume every month.

- **Revenue growth vs volume growth**: In this table, I have collated the revenue and sales volume numbers of Maruti Suzuki for the past five years. In most periods, revenue growth is more than volume growth. This could mean one or both of the following.
  - The average selling price per unit is growing faster than volume growth.
  - Maruti Suzuki is selling higher-priced cars more than lower-priced ones.

Either way, the average realization is growing. “Realization” is the money Maruti Suzuki is making per car.

Maruti Suzuki	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23
Volumes	1,779,574	1,862,449	1,563,297	1,457,861	1,652,653	1,966,164
Volume Growth		**4.7%**	**-16.1%**	**-6.7%**	**13.4%**	**19.0%**
Revenues	79,809	86,069	75,660	70,372	88,330	117,571
Revenue Growth		**7.8%**	**-12.1%**	**-7.0%**	**25.5%**	**33.1%**

If realizations were falling, revenue growth would be slower than volume growth. This is a more problematic feature. The carmaker may be losing brand value and is forced to sell at lower prices.

- **Product mix**: Product mix refers to a company's portfolio of various products. In the case of an automobile manufacturer, it is the various types and the range of vehicles it sells. Maruti Suzuki sells cars at various price points. Tata Motors sells cars and trucks at various price points. Mahindra sells cars, trucks, and tractors. Eicher sells bikes, trucks, and buses. Hero Motocorp sells gear and non-gear two-wheelers.

As shown in the previous point, if Maruti Suzuki sells more higher-priced cars than lower-priced ones, it reaps the benefits of a good product mix. Profit margins on higher-priced products tend to be higher.

This applies to all industries. If you buy Lifebuoy Soap, HUL wants you to buy Dove. If you have a Super subscription, Hotstar wants you to buy a Premium subscription. If you have a Swift, Maruti wants you to upgrade to Swift Dzire.

Let's compare these metrics for some automobile companies.

FY2023	Maruti Suzuki	Tata Motors	M&M	Bajaj Auto	Eicher Motors
Revenue Growth 1 Yr	33.1%	24.2%	34.5%	10.0%	40.2%
Revenue Growth 3 Yr	15.8%	9.8%	8.4%	6.8%	16.4%
Sales Volume Growth 1 Yr	19.0%	22.9%	53.3%	-8.7%	38.6%
Sales Volume Growth 3 Yr	7.9%	11.6%	13.6%	-5.2%	6.3%
Product Mix	Passenger Vehicles	Passenger Vehicles, Commercial Vehicles, JLR	Passenger and Commercial Vehicles, 2- and 3-Wheelers, Farm Equipment	Two-wheelers, KTM, Three-Wheelers	Motocycles (trucks and buses not included in revenue growth)

These metrics are all about revenues. A business needs to keep its costs in check to be profitable. Cost, efficiency, and profitability ratios for automotive companies are the same as what we have covered in the Fundamental Analysis module on Varsity.

The automobile business is asset-heavy. The chance of high debt on the balance sheet is also high. Therefore, when studying the automobile sector, I would also study the debt-equity and other leverage ratios from the fundamental analysis module.

That said, we must also study what and how external elements influence the sector. For the sake of not making this chapter too heavy, we will discuss the rest in the next chapter. It will primarily focus on what factors drive costs and impact the efficiency of automakers.

Happy reading! 🙂

Key Takeaways:

- India is the third largest market globally for passenger vehicles. The government is giving a major push to EVs.
- Major performance indicators of automobile companies are production volume, sales volume, revenue growth vs volume growth, and product mix.
- Most automakers operate assembly lines. They buy all components from suppliers.
- Since an average car is made of almost 30,000 components, managing thousands of suppliers becomes critical.
- The business performance of automakers is mainly compared on the basis of revenue, volume produced, and volume sold figures. A faster revenue growth than sales volume growth could mean improving margins.
- Product mix also has a bearing on the performance. Selling higher value automobiles is generally expected to grow margins.

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7. Automobiles (Part 2)

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7.1 – In continuation with Part 1

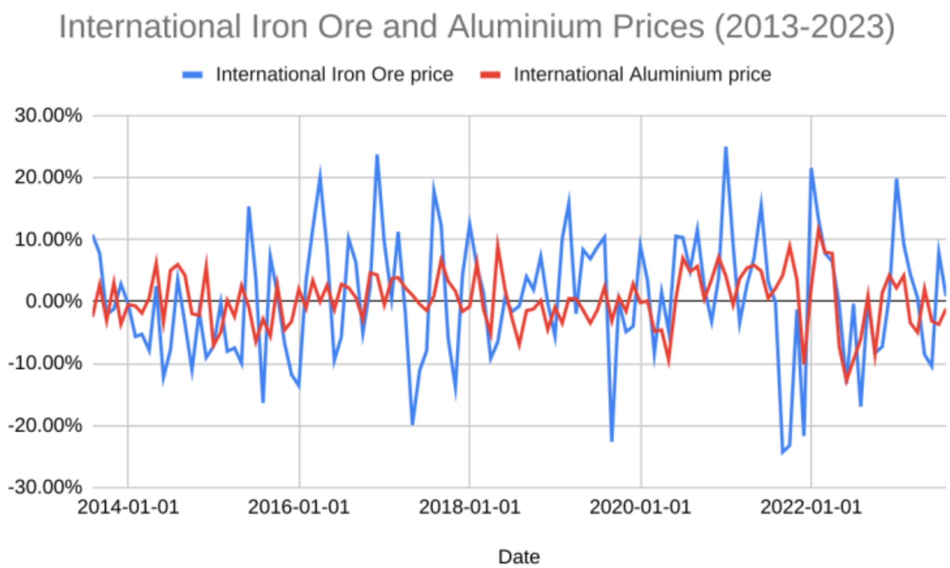
This chapter is in continuation with the previous chapter, Automobiles – Part 1, which sets the context for the automobile industry. So, I suggest you read that before venturing into this one. 🙂

While we have discussed performance parameters for automobile companies, here we will discuss the externalities driving or impacting their performance.

7.2 – Supply-side external factors

For the sake of simplicity, I have split the external factors into supply-side and demand-side. Supply-side factors impact the availability of inputs, raw materials, and labor. Demand-side factors create, drive, or hurt the demand for automobiles. Let us first look at the supply-side factors.

Commodity prices – Steel, iron, aluminium, and magnesium are the most commonly used metals in automobile manufacturing. These metals are commodities. Their prices fluctuate a lot. Excessive upward fluctuations in commodity prices can hurt the gross margin of automakers. This chart of only two base metals, iron ore, and aluminium, shows how their prices have fluctuated over a 10-year period between Jul-13 and Jul-23.



Rubber prices – Rubber is used in several components of a car. Most importantly, it is used in tires. Automakers do not make tires. They buy tires from tiremakers. When rubber prices shoot up, tires can become expensive. This adds to the cost of production.

Batteries – Batteries are primarily made of either lithium or lead. Both are commodities. Lead-acid batteries have long been used for auto-start, headlights, horns, and other support functions. This is mostly applicable to ICE vehicles. Electric vehicles are mainly powered by lithium batteries. The growing adoption of electric vehicles has given a boost to the demand for lithium batteries.

Components – The availability of components is critical for timely production. Quality also must be ensured. Certain components are mission-critical for automobiles. Carmakers maintain teams specifically meant to certify the quality of components that suppliers are delivering.

Suppliers of many components are small enterprises. Their limited capital and resources make them vulnerable to shocks and failures. Remember how Covid hurt small businesses? Shutdowns, production delays, labor shortages, and stuck payments were a few of the many issues that small manufacturers dealt with. Many had to close down their businesses. This contributed to slower production of vehicles in the months when operations resumed post-Covid.

The increasing use of smart devices has digitized several functions of automobiles. The audio systems, parking sensors, dashboard screens, and remote locks are smart functions that run on semiconductors. Post-covid shortage of semiconductors had caused nearly all automakers across the world to suspend or cut production for months.

Labor – The automotive industry is one of the largest users of robotics in the production process. Still, the industry is labor-intensive. Every automaker employs thousands of employees on its shop floor. So the availability of employees is critical to ensuring uninterrupted production. Worker strikes, natural disasters, and pandemics can often hinder worker availability. Maintaining good worker relations, therefore, becomes essential.

7.3 – What can impact the demand for automobiles?

The sector is often touted as the indicator of economic development. Being a high-value consumer product in India, automobile purchase is a big financial and emotional decision for most families. In fact, when a farmer purchases a tractor, it could become a village-level event in some parts of India. So, what drives this demand?

Disposable income – Many industries are hopeful of the rising disposable income of the Indian middle class. Economic growth can improve employment levels and grow household incomes. This, in turn, can create demand for aspirational products. Cars are still an aspirational product – on average, only 1 in 12 Indian households own a car. In contrast, at least half of all Indian households own a two-wheeler.

Cost of running the vehicle – Purchasing an automobile is an expensive affair. But the costs of maintaining a vehicle can be high, too. Fuel, maintenance, servicing, repairs, and insurance are regular costs. Consumers account for these in their purchase decision. Therefore, to influence customer decisions, free services, warranties, and mileage are the most commonly offered features with most vehicles.

After-sales service – This point draws from the previous one. The quality and affordability of after-sales services is a major factor driving vehicle purchase decisions. Carmakers often market the quality of their after-sales services to drive sales.Those living in tier-3 or tier-4 towns often buy cars from brands that have service centers in their towns. They may reject cars with better features just because there are no authorized service centers near them.

Availability of financing – Nowadays, people do not save up for years to buy a car. They can simply take a loan.

Last year, I decided to buy a car, the first in my middle-class household. If I had to save up, I would have taken maybe two or three years to buy the car of my choice. Thanks to easy loans, I could afford a car two or three years earlier. 😀 There are many others like me. The easy availability of loans has made it possible for us to buy a car at an early age.

In fact, the salesperson wanted me to buy a more expensive car because I was eligible for a higher loan. Easy financing often drives a customer to buy a more expensive car.

Financing is a major driver for tractor sales, too. Most farmers buy tractors on loan. Affordability among farmers is anyway a challenge. Therefore, loans are a significant enabler.

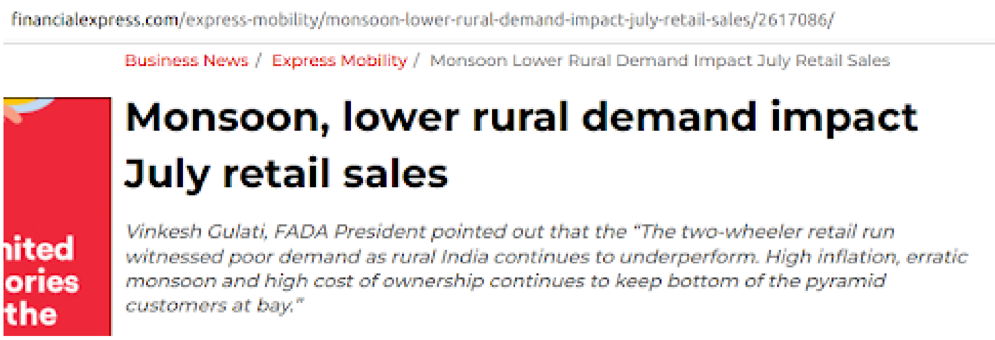
Two-wheeler financing is a huge market. India had active two-wheeler loans worth over ₹86,000 crore at the end of FY22. Clearly, people are dependent on financing for all vehicle purchases.

Buses, trucks, and other commercial vehicles are mostly bought by business firms. Businesses are always looking to manage cash flows. A lump sum payment can dent the cash reserves. So, firms also prefer to buy vehicles on loan and pay monthly installments.

Simply put, any vehicle purchase that could be done three years later is done today, thanks to easy loans. Therefore, the availability of financing is seen as a demand driver for automobiles.

Seasons: The focus here is on monsoons. A good monsoon season results in good agricultural produce. This improves farmers' income, thereby creating demand for tractors and two-wheelers. Since rural income levels are low, two-wheelers are preferred and easy to afford. Two-wheeler makers often comment on the impact of monsoons on rural sales.

This snapshot from a news report by Financial Express attributes erratic monsoon and inflation to lower rural demand for two-wheelers.

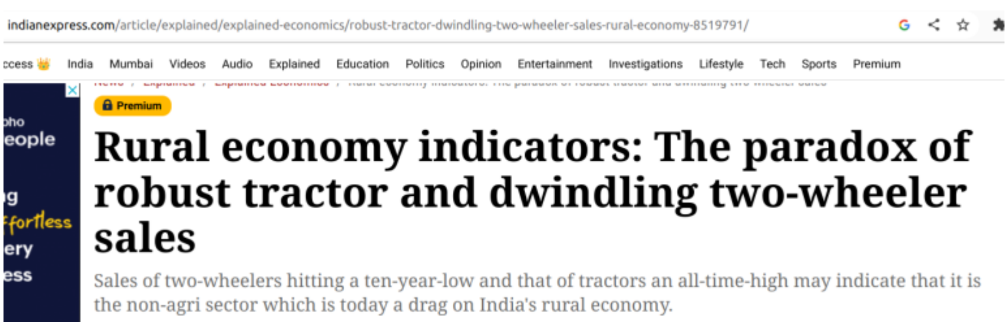

financialexpress.com/express-mobility/monsoon-lower-rural-demand-impact-july-retail-sales/2617086/

Business News / Express Mobility / Monsoon Lower Rural Demand Impact July Retail Sales

Monsoon, lower rural demand impact July retail sales

Vinkesh Gulati, FADA President pointed out that the "The two-wheeler retail run witnessed poor demand as rural India continues to underperform. High inflation, erratic monsoon and high cost of ownership continues to keep bottom of the pyramid customers at bay."

And this snapshot argues why tractors and two-wheelers are performing differently in the rural markets. Tractors and two-wheelers are generally expected to perform similarly in rural markets.


indianexpress.com/article/explained/explained-economics/robust-tractor-dwindling-two-wheeler-sales-rural-economy-8519791/

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Premium

Rural economy indicators: The paradox of robust tractor and dwindling two-wheeler sales

Sales of two-wheelers hitting a ten-year-low and that of tractors an all-time-high may indicate that it is the non-agri sector which is today a drag on India's rural economy.

Charging infrastructure: This is applicable only to electric vehicles. A wider availability of charging infrastructure can motivate consumers to buy more electric vehicles. The target of achieving 30% EV car adoption by 2030 can be realized only if charging stations could come up faster. After so many years since they were introduced, CNG vehicles have struggled to achieve wider acceptability because of the limited number of gas stations.

The speed of charging is an issue, too. Charging an electric vehicle can run into a few hours. If you forgot to refill the petrol in your car, you could always stop by at the next fuel station. But if you forgot to recharge your EV last night, your journey will be delayed by a few hours. Therefore, fast charging infrastructure is critical to encourage more adoption of EVs.

Battery swapping has often been discussed as an alternative to charging. It involves replacing exhausted batteries with charged ones at swapping stations. This can happen in a few minutes instead of a few hours taken by charging. But it has its own challenges.

We would need a full-fledged battery-swapping infrastructure. For example, battery swapping would be more effective if the battery size and shape were standardized across carmakers. Getting all industry players to agree on one standard can be a tall task. There also are other logistical issues with battery swapping.

Regulations: Regulations can spur or hurt demand for vehicles. Often, safety-related regulations come with an additional cost to the consumer. While safety is preferred, higher prices are a deterrent to demand. I have enlisted a few examples of regulations below.

- In 2018, the government increased the maximum allowed load capacity for heavy vehicles like trucks by 20-25%. This one rule suddenly added the transport capacities of transport companies. Essentially, five trucks could do the work of six trucks. While this was an advantage for transport companies, automakers suffered. Suddenly, the demand for new trucks was hit.
- Indian vehicles used to comply with the BS-IV emission norms. Then, starting on 01 April 2020, it became mandatory for all new vehicles to comply with the BS-VI norms. Basically, regulations required the industry to skip the BS-V norms. This was good for the climate, but difficult for the industry. In the year leading up to this switch, automobile makers slowed production.
- Consumers may have also delayed buying to be able to buy the newer BS-VI-compliant vehicles after April 2020. However, the BS-VI-compliant vehicles also came with a price hike. Automakers had to cover the cost of using the new BS-VI technology.
- In April 2023, the industry moved to Phase Two of BS-VI norms, further marginally increasing vehicle prices. Price hikes negatively impact demand.
- Starting 01 October 2023, all new passenger vehicles must be equipped with six airbags. Most cars generally have two airbags. While the policy is meant for passenger safety, the move will increase the cost of production for automakers, thereby increasing the cost of ownership for customers.
- Both central and state governments offer tax breaks in various forms for EV purchases. Individuals taking car loans for EV purchases can claim tax deductions of up to ₹1.5 lakhs on the interest component. Several state governments are also offering subsidies on road tax for EVs.

My effort here was to explain how to interpret externalities rather than give a fixed checklist of externalities. I hope you found it useful. 🙂

Key Takeaways:

- Commodity prices, rubber prices, batteries, component availability, and labor impact the production and availability of vehicles
- Demand for vehicles is driven by disposable income levels, availability of financing, cost of running the vehicle, after-sales services, seasons, refueling/recharging infrastructure, and regulations.
- Regulations can be around vehicle insurance, pollution emission of vehicles, safety and quality standards, and taxation, among others.

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Module 15. Sector Analysis

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8. Banking (Part 1)

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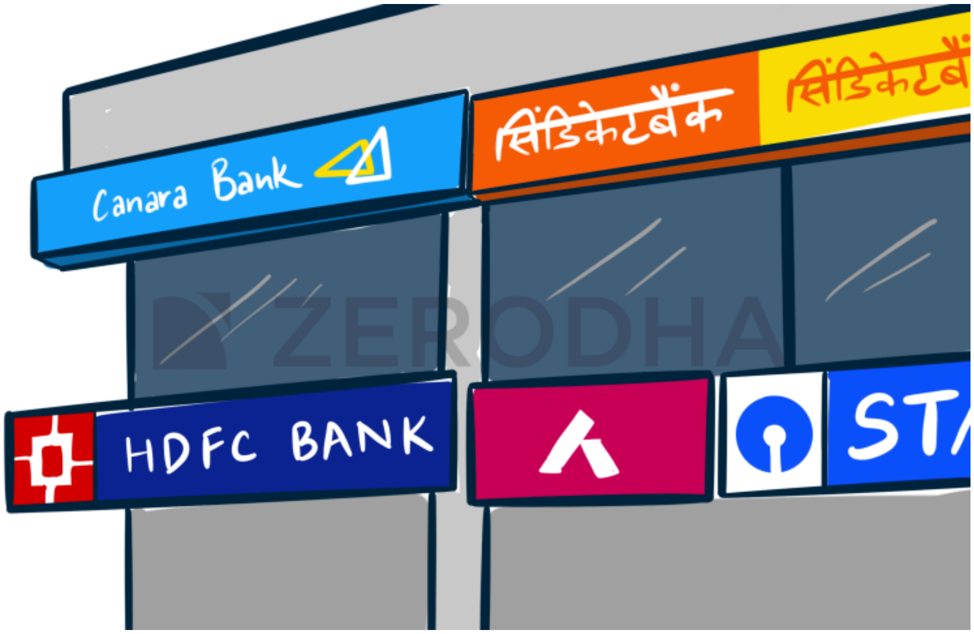
8.1 – The First Digital Industry

I opened my first bank account at the age of 13 or 14, I think. I had to fill out and sign an account opening form. My friends and I would love to go to the bank and have the passbook printed. We would deposit and withdraw ₹20-30 all the time just to increase the passbook entries. If you are a Gen-Z reader, this experience might be alien to you. You could still do all this at your bank, but why would you?

You can now open bank accounts digitally from your home. Sending money was already easy through banking apps, but now we have the comfort of UPI apps. You can even have loans approved on apps.

This evolution is no wonder. I would like to take the liberty to call banking the first and most digitized industry.



8.2 – The Banking Industry

Banks are often called the lifeline of an economy. We hold our money in the banks. We make fixed deposits. We take loans from banks. Some of us also buy insurance and investments through banks. Banks facilitate foreign trade. Every business maintains a bank account, and many businesses also take loans.

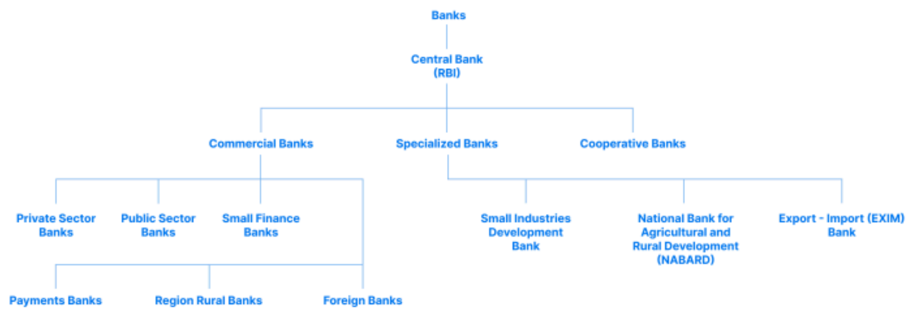
When there is optimism in the economy, enterprises are willing to take risks. They borrow funds and expand their businesses. Their vendors and buyers also see renewed demand. Money starts rolling in the ecosystem, and banking activity picks up. The inverse is true when there is pessimism in the economy.

Basically, economic health has a direct impact on the banking sector. However, the relationship is a bit layered. We will see that later in this reading.

8.3 – The Banking Landscape in India

India's banking system has a tiered structure. The Reserve Bank of India (RBI) regulates all banking activities in the country. The three broad types of banks are scheduled commercial banks, specialized banks, and cooperative banks.

- **Scheduled commercial** banks are called "Scheduled" because of their inclusion in a particular Schedule of the RBI Act 1934. Since our focus will be only on listed scheduled commercial banks, let us call them commercial banks for convenience.
- **Specialized banks** are focused on a particular economic activity. Small Industries Development Bank (SIDBI), as the name indicates, focuses on small industries. NABARD is meant to support and promote agricultural and rural business activities. The EXIM Bank extends financing to foreign entities looking to import from India.
- **Cooperative banks** offer services similar to commercial banks but on a much smaller scale. The main difference is that the members of a cooperative bank act as both its owners and customers. These banks are governed by the State Cooperative Societies Act. RBI is the regulatory body of cooperative banks.



As of this writing in July 2023,

- India has 138 Scheduled Commercial Banks
- It has a total of 1,59,718 banking offices or branches
- The number of ATMs is 2,55,796
- The total number of savings accounts with SCBs is 212 Cr
- State Bank of India is the largest Indian bank by the number of branches
- HDFC Bank is the largest Indian bank by market capitalization
- Popular banking indices: Bank Nifty, Nifty PSU Bank, Nifty Financial Services, S&P BSE Bankex, S&P BSE Financial Services

As I mentioned above, the focus of this reading will be listed commercial banks, most of which will fall under private, public, or small finance banks' categories.

8.4 – How is banking different from other sectors?

Banks differ from regular businesses. They pay their customers for maintaining deposits. They earn interest for giving loans. They make fees and commissions from other financial products. All these services deal in money for money. There is also no manufacturing or warehousing of products. Therefore, banks do not have inventory or cost of goods sold in their financial statements.

Their peculiar nature is perhaps why banks have a separate regulator, the RBI. It is also considered one of the most important institutions in the country. Its policies and actions have a direct bearing on many industries and an indirect bearing on all. The RBI is expected to stimulate economic growth when there is a slowdown and tame it when there is inflation.

The RBI sets regulations for banks with respect to customer account opening and maintenance, permissible business activities, scale of operations, liquidity requirements, capital adequacy, and non-performing assets, among others.

The global financial crisis of 2008 showed how a crisis in the banking sector could ripple across sectors and countries and severely dent their economies. As a result, central banks across the world agreed on a set of strict principles to regulate banks. These principles are called the **Basel-III norms**. The idea was to monitor and control the risks that banks took.

The RBI adopted Basel-III norms but took a step further. It mandated stricter requirements for the Indian banking system. Since we are a developing economy, stricter risk parameters seem prudent. 🙂

8.5 – How to Analyse a Bank?

Just like insurance, the heavy regulations in the banking sector are an advantage for an analyst. Banks are mandated to report a number of ratios every quarter. The formula for calculating these ratios is stipulated by the regulator. You will get most ratios directly in the banks' financial reports and investor presentations. Therefore, a comparison of ratios across banks is easier.

Sources of revenues: A bank's revenues are split based on the type of customers.

- **Corporate / Wholesale**: Corporate revenues are those that are earned from trusts, partnership firms, companies, and other business concerns. Loans to corporate entities typically are of larger ticket sizes. A large ticket size gives a quick revenue boost but also increases concentration risk in the loan book.
- **Retail**: Loans or banking services given towards housing, vehicles, personal loans, credit cards, etc., are categorized as retail loans. Retail loans have a small ticket size and are large in number. Therefore, the risk is distributed across many small customers.

  Within retail, banks in India are also mandated by the RBI to lend to the priority sector. Borrowers eligible for priority lending can be from agriculture, MSME, education, housing, social infrastructure, renewable energy, and other weaker sections. There are further minimum limits to lending to these sections. For example, out of a bank's net credit in FY2024, 10% has to be lent to small farmers and other weaker sections.
- **Treasury**: Treasury income comes from the entire investment portfolio of the bank. A bank actively invests in stocks, bonds, and derivative instruments to manage liabilities and make gains. These gains are treasury gains.
  Banks also have to maintain investments in safe and liquid government securities as part of the mandatory SLR requirements. I will take SLR later in this chapter. Gains from SLR investments are also part of treasury income.
- **Others (Insurance / Investment Banking / Associates)**: All other sources of revenues that cannot be classified under any of the above three categories are part of other revenues. Subsidiary revenues are also part of other revenue. For example, ICICI Bank's subsidiaries include ICICI Securities, ICICI Prudential AMC, ICICI Prudential Life Insurance, and ICICI Bank Canada, among others.

Growth in corporate and retail loans is essential for the growth of core banking operations.

Revenues can also be split into interest income and non-interest income. The next section on net interest income discusses this elaborately.

Net Interest Income and Net Interest Margin: Net Interest Income is the difference between interest earned and interest paid. A bank earns interest on loans, credit lines, and credit cards. It pays interest on savings accounts and fixed deposits. It makes business sense when interest earnings are more than interest payments.

Interest earnings – Interest payments = Net Interest Income (NII).

If you are reading a bank's investor presentation, the net interest income figure will be given. You can see it in this snapshot from ICICI Bank's presentation.

Consolidated profit & loss statement

(₹ billion)	FY2022	Q4-2022	Q3-2023	Q4-2023	FY2023	Q4-o-Q4 growth
Net interest income	542.40	143.66	186.41	199.59	705.23	38.9%
Non-interest income	621.29	178.34	162.41	194.84	651.12	9.3%
- Fee income	*203.35*	*55.30*	*57.09*	*60.69*	*228.72*	*9.7%*
- Premium income	*389.60*	*119.34*	*101.53*	*131.77*	*411.37*	*10.4%*
- Other income	*28.34*	*3.70*	*3.79*	*2.38*	*11.03*	*(35.7)%*
Total income	**1,163.69**	**322.00**	**348.82**	**394.43**	**1,356.35**	**22.5%**
Operating expenses	731.52	206.72	205.12	242.37	824.39	17.2%
Operating profit	**432.17**	**115.28**	**143.70**	**152.06**	**531.96**	**31.9%**

If you are reading the bank's financial statements, you can compute it using the NII formula. Interest earned = (34438.91)

Interest expended = (14479.47)

NII = Interest earned – Interest expended

= (34438.91-14479.47)

= 199.59 Billion or about Rs.19,959.49Crs.

= 19959.49 Cr. This is the same as 199.59 billion, as shown in the presentation.

CONSOLIDATED FINANCIAL RESULTS

(₹ in crore)

Sr. no.	Particulars	Three months ended March 31, 2023 (Q4-2023) (Audited)	Three months ended December 31, 2022 (Q3-2023) (Unaudited)	Three months ended March 31, 2022 (Q4-2022) (Audited)	Year ended March 31, 2023 (FY2023) (Audited)	Year ended March 31, 2022 (FY2022) (Audited)
1.	Interest earned (a)+(b)+(c)+(d)	34,438.91	31,618.81	24,999.46	121,066.81	95,406.87
	a) Interest/discount on advances/bills	25,353.68	23,259.99	17,680.63	87,929.24	66,886.54
	b) Income on investments	7,827.87	7,136.29	5,623.55	27,905.03	21,990.64
	c) Interest on balances with Reserve Bank of India and other inter-bank funds	707.14	595.39	684.42	2,305.46	1,819.60
	d) Others	550.22	627.14	1,010.86	2,927.08	4,710.09
2.	Other income	19,483.84	16,240.69	17,834.60	65,111.99	62,129.45
3.	**TOTAL INCOME (1)+(2)**	**53,922.75**	**47,859.50**	**42,834.06**	**186,178.80**	**157,536.32**
4.	Interest expended	14,479.47	12,977.89	10,633.93	50,543.39	41,166.67
5.	Operating expenses (e)+(f)	24,237.09	20,511.90	20,672.09	82,439.02	73,151.73
	e) Employee cost	4,248.00	3,723.10	3,115.32	15,234.17	12,341.60
	f) Other operating expenses	19,989.09	16,788.80	17,556.77	67,204.85	60,810.13
6.	**TOTAL EXPENDITURE (4)+(5) (excluding provisions and contingencies)**	**38,716.56**	**33,489.79**	**31,306.02**	**132,982.41**	**114,318.40**
7.	**OPERATING PROFIT (3)–(6) (Profit before provisions and contingencies)**	**15,206.19**	**14,369.71**	**11,528.04**	**53,196.39**	**43,217.92**

It is essential that a bank's NII is positive. Negative NII means interest expenses are more than interest earnings. That means losses from the main banking operations.

Net Interest Margin (NIM) gives perspective to NII. Dividing NII by the average interest-earning assets gives NIM. The issue here is that the figure of "average interest-earning assets" is available only in the annual reports. But we don't have to worry – the banks are mandated to declare NIMs every quarter.

A wider or growing NIM is a positive sign for the bank. It means the bank is either borrowing at lower interest rates or lending at higher interest rates. It could even be a combination of the two.

In fact, in FY22, ICICI Bank's NIM grew compared to FY21 even when its interest earnings fell. This is because interest earnings declined by 28 bps while interest payments declined by 54 bps.

ICICI Bank — Annual Report 2021-22

MANAGEMENT DISCUSSION & ANALYSIS

NET INTEREST INCOME AND SPREAD ANALYSIS

The following table sets forth, for the periods indicated, the net interest income and spread analysis.

₹ in billion, except percentages

Particulars	Fiscal 2021	Fiscal 2022	% change
Interest income	₹ 791.18	**₹ 863.75**	9.2%
Interest expense	401.29	**389.09**	(3.0)
Net interest income	**389.89**	**474.66**	**21.7**
Average interest-earning assets	10,558.79	**11,979.51**	13.5
Average interest-bearing liabilities	9,438.50	**10,478.20**	11.0
Net interest margin	**3.69%**	**3.96%**	-
Average yield	7.49%	**7.21%**	-
Average cost of funds	4.25%	**3.71%**	-
Interest spread	3.24%	**3.50%**	-

1. All amounts have been rounded off to the nearest ₹ 10.0 million.

If the NIM is narrowing consistently over a few quarters, it could be a warning sign of the bank's probably declining fundamentals and creditworthiness. Even when a bank is steadily improving its fundamentals, it is considered stable only when it has significantly improved and stabilized its NIM.

There is no ideal NIM figure. Perhaps you could use the industry average to judge a bank. Or you could even compare a bank's NIM with an independent forecast. For example, Fitch Ratings expects the average NIM for FY24 to be 3.45%. So, any bank's NIM higher than 3.45% is a good number.

Capital Adequacy Ratio (CAR):

A measure of a bank's ability to lend, CAR is also known as Capital to Risk-Weighted Assets Ratio (CRAR).

Here, assets are basically loan assets. The loans given are a bank's assets. Based on the nature of the borrowers and the types of loans given, each loan asset is assigned weights according to the level of risk it carries. Accordingly, the total risk-weighted value of all loan assets is determined. The ratio calculates capital as a percentage of total risk-weighted assets.

CAR = (Tier 1 Capital + Tier 2 Capital)/Risk Weighted assets

Again, you do not have to compute CAR, as the banks are required to report the ratio every quarter. Understanding the concept is important.

A bank is in the business of lending loans. It can lend roughly 4-5 times its equity capital. One of the biggest risks is the loans not being repaid. Loan losses directly hit the equity capital. If equity capital reduces, the bank's ability to lend also reduces.

Suppose a bank has a capital of ₹2 Cr; it can lend roughly ₹10 Cr. What if loans worth ₹50 lakhs went bad? That amount of ₹50 lakhs is a loss that directly hits the equity. So, the remaining capital is ₹1.5 Cr. At roughly five times, the bank can lend ₹7.5 Cr. But it has already lent ₹9.5 Cr (after allowing for bad loans). In this case, it will have to either sell the loans or raise new capital. Both options can trigger events for the overall banking system. Therefore, the RBI mandates banks to have a minimum capital adequacy ratio of 9%. Basel-III norms have guided for an 8% CAR, but the RBI is stricter.

- Tier 1 capital should be 7% of the total risk-weighted assets. It is made up of Common Equity Tier 1 (CET 1) and Additional Tier 1 (AT1) capital.
- Common Equity Tier 1 (CET 1) includes common equity, reserves and surplus, and statutory reserves. It should be 5.5% of the RWAs.
- Additional Tier 1 capital can comprise preference shares, debentures, or other instruments approved by RBI. AT1 should fill the rest of the Tier 1 requirements. Therefore, AT1 can be 1.5% of RWAs.
- Tier 2 capital comprises provisions held as reserves for future, presently unidentified losses, preference shares, debentures, stock surplus, etc. Tier 2 capital has to be at least 2% of RWAs to satisfy the total capital requirement of 9%.

AT1 and Tier 2 instruments can be similar, but AT1s are subordinate to Tier 2 instruments. If a bank were to suffer losses, AT1s would be written down or written off before Tier 2 instruments.

This snapshot shows that ICICI Bank has a CAR of 18.09%. This is well above the required 9%. We can say that this bank is well-capitalized. It has enough space to accommodate bad loans.

Consolidated capital adequacy

Basel III (%)	Dec 31, 2022[1]	Mar 31, 2023[2]
Total capital	16.02%	18.09%
- Tier I	*15.25%*	*17.33%*
- *of which: CET 1*	*14.80%*	*16.88%*
- Tier II	*0.76%*	*0.76%*

- Including profits for 9M-2023, CET 1 ratio was 16.77%, Tier I ratio was 17.23% and total capital adequacy ratio was 17.99% at Dec 31, 2022

slide 47

1. Excludes profit for 9M-2023
2. After reckoning the impact of proposed dividend

70

Banks are also required to maintain a buffer of 2.5%. It is called the capital conservation buffer. They are expected to build this buffer in times of good business. When there is stress, they can use this buffer. When the stress fades away, they can refill this buffer by reducing dividend payouts.

This snapshot from RBI's Master Circular on Basel-III Capital Regulations shows the types of capital requirements for banks.

S.No.	Regulatory Capital	As % to RWAs
(i)	Minimum Common Equity Tier 1 Ratio	5.5
(ii)	Capital Conservation Buffer (comprised of Common Equity)	2.5
(iii)	Minimum Common Equity Tier 1 Ratio plus Capital Conservation Buffer [(i)+(ii)]	8.0
(iv)	Additional Tier 1 Capital	1.5
(v)	Minimum Tier 1 Capital Ratio [(i) +(iv)]	7.0
(vi)	Tier 2 Capital	2.0
(vii)	Minimum Total Capital Ratio (MTC) [(v)+(vi)]	9.0
(viii)	Minimum Total Capital Ratio plus Capital Conservation Buffer [(vii)+(ii)]	11.5

When a bank becomes excessively large, it becomes a systemically important bank. Any stress in such banks can have adverse ripple effects on the economy. Therefore, such banks have additional capital requirements. Only three banks fall into this category. SBI has to maintain additional common equity tier-1 capital of 0.60%. HDFC Bank and ICICI Bank have to maintain 0.20% additional common equity tier-1 capital.

> **A Note on risk-weighting of assets** – Investments classified as Held for Trading (HFT) or Available for Sale (AFS) are given risk weighting mainly for market risk and not credit risk. This could understate the risk associated with such assets. A lower risk-weighted asset value would require lower amounts to maintain capital adequacy. A bank could buy non-convertible debentures of a risky company, classify it as Held for Trading, and under-report its risk. This could overstate the bank's capital adequacy.

When studying the banking sector, you do not have to generally worry about large banks or banks with comfortable capital adequacy. But you must be careful when studying banks with only borderline capital adequacy.

In order to not stuff too much information in one chapter, I will take up asset quality, liquidity, and other parameters critical to analyzing banks in the next chapter, Banking – Part 2. It will also contain a checklist of all the parameters covered in both chapters that you can use as a reference while analyzing banks on your own.

Key Takeaways:

1. Banking is perhaps the most digitalized sector.
2. Banks can be commercial, specialized, or cooperative. Our focus is on listed scheduled commercial banks.
3. Banking is a highly regulated industry. Given that we are a developing economy, the RBI's norms are stricter than the Basel-III norms.
4. Analyzing a bank involves studying its revenue structure, interest margins, capital adequacy, asset quality, deposits, loan book, and liquidity.
    1. Revenues sources generally include corporate, retail, treasury, and others (investment banking, insurance, etc.)
    2. Capital adequacy is judged from a bank's tier-1 and tier-2 capital
    3. Asset quality is judged by a bank's Gross NPA, Net NPA, and Provision Coverage Ratio (PCR) (Asset quality ratios will be covered in the next chapter).

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9. Banking (Part 2)

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9.1 – How to Analyse a Bank?

The banking sector can be analyzed by studying its sources of revenues, capital adequacy, and asset quality, among other parameters. The previous chapter, Banking – Part 1, covered sources of revenues and capital adequacy. This chapter will cover asset quality, liquidity, and others.

Asset quality: Let’s compare two banks. Both have given loans totaling ₹1 Cr. This table shows a breakdown of their loan portfolio. Which bank has a better asset quality?

Bank 1		Bank 2	
Two housing loans	4,500,000	Three business loans	10,000,000
Three car loans	1,800,000		
Two farm loans	700,000		
One business loan	3,000,000		
	10,000,000		**10,000,000**

We know how risk can be mitigated through diversification. Therefore, with its loan book diversified across various categories, Bank 1 seems to have a better asset quality.

Diversified or not, every loan book will have some defaults. Meaning some borrowers may not repay part or all of their dues. These are bad loans or non-performing assets.

Why are bad loans called non-performing assets? Loans are a liability. Why are they called assets? If you are a borrower, a loan is your liability to the bank. It also means that your loan is the bank's asset. So, when people do not repay their loans on time, their loans are called non-performing assets. For simplicity, some banks call them non-performing loans (NPLs) too. Don't be confused; both are the same.

The asset quality of a bank can be quantified with the help of three ratios – GNPA, NNPA, and PCR. Again, you do not have to calculate these, as the banks have to report them every quarter.

This snapshot from ICICI Bank's investor presentation shows these three ratios. The figures highlighted in blue in this image are of the most recent period, i.e., March 2023.

Gross NPA ratio[1]	3.60%	3.07%	2.81%
Net NPA ratio[1]	0.76%	0.55%	0.48%
Provision coverage ratio	**79.2%**	**82.0%**	**82.8%**

- **Gross Non-Performing Assets (GNPA) Ratio**: GNPA is the amount of money that borrowers have failed to pay to the bank on time. GNPA ratio is GNPA divided by the gross total loans given out.
- **Net Non-Performing Assets (NNPA) Ratio**: Banks have to anticipate some level of bad loans and accordingly set aside provisions for those bad loans. Net NPA is GNPA minus provisions.
- **Provision Coverage Ratio (PCR) Ratio**: This ratio shows what percentage of GNPAs are covered through provisions. In the above snapshot, 82.8% of GNPAs are covered through provisions. The uncovered portion is the NNPA.

Lower NPAs are preferred. Comparing the NPAs of a bank with peers helps understand their relative performance. A bank with 1% GNPA is doing better than a bank with 2% GNPA. Comparing NPAs with the previous quarters can suggest if the bank's asset quality is improving or deteriorating.

Higher PCR eats into profits. Therefore, a PCR suggests that a bank is prudent and conservative. If a bank can consistently grow profits while maintaining a high PCR, it is said to have a high quality of performance and reporting.

Deposits: The following snapshot shows that ICICI bank has given ₹10839 bn worth of loans. However, its own net worth is ₹2145 bn, and it has borrowings of ₹1891 bn. Where did the bank get the rest of the money to lend? Deposits. ICICI Bank had deposits with ₹12108 Cr. It used these deposits from customers to give loans to customers.

Consolidated balance sheet

(₹ billion)	Mar 31, 2022	Dec 31, 2022	Mar 31, 2023
Cash & bank balances	1,831.26	1,398.80	1,364.56
Investments	5,670.98	6,125.58	6,395.52
Advances	9,203.08	10,380.91	10,838.66
Fixed & other assets	821.05	966.80	986.16
Total assets	**17,526.37**	**18,872.09**	**19,584.90**
Net worth	1,820.52	2,045.93	2,144.98
Minority interest	59.81	65.73	66.87
Deposits	10,913.66	11,523.25	12,108.32
Borrowings	1,616.03	1,924.97	1,890.62
Liabilities on policies in force	2,288.27	2,399.75	2,388.67
Other liabilities	828.08	912.46	985.44
Total liabilities	**17,526.37**	**18,872.09**	**19,584.90**

Deposits can be further categorized into CASA and Term deposits. CASA is an acronym for Current Account-Savings Account. Banks are always looking to increase their CASA ratio. Why?

Because CASA is the cheapest source of funds for the banks. They usually pay 3-4% interest on savings accounts and nearly nothing on current accounts. Banks borrow from the RBI at the repo rate, which is at 6.5% currently. Borrowings in the form of debentures and bonds are even more expensive. Therefore, banks keep chasing CASA deposits. A higher CASA ratio is preferred.

An issue with CASA deposits is that they are demand-based. Customers can place and withdraw deposits as and when they want. Therefore, term deposits or fixed deposits are also chased. Banks have to pay slightly higher interest on fixed deposits but have more certainty about the availability of funds.

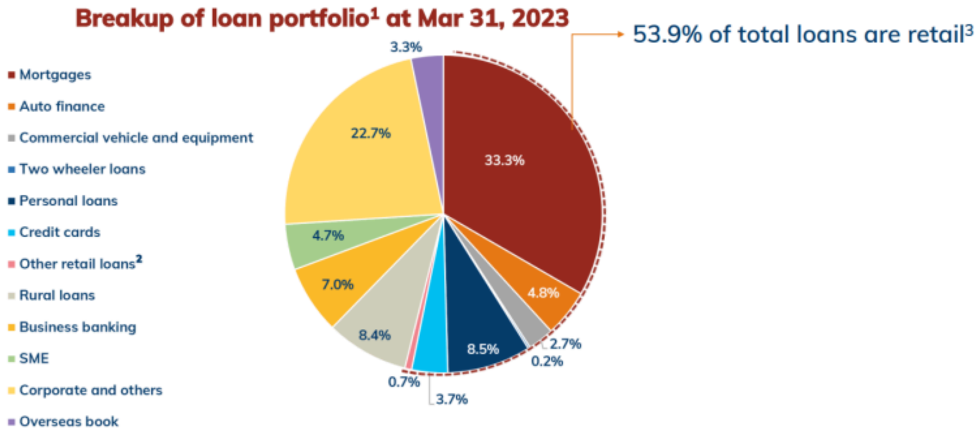
Deposits

(₹ billion)	Mar 31, 2022	Dec 31, 2022	Mar 31, 2023	Y-o-Y growth	% share at Mar 31, 2023
CASA	5,184.37	5,088.42	5,412.62	4.4%	45.8%
- Current	*1,584.80*	*1,456.26*	*1,614.86*	*1.9%*	*13.7%*
- Savings	*3,599.57*	*3,632.16*	*3,797.76*	*5.5%*	*32.1%*
Term	5,461.35	6,132.08	6,395.79	17.1%	54.2%
Total deposits	**10,645.72**	**11,220.49**	**11,808.41**	**10.9%**	**100.0%**
	Q4-2022	**Q3-2023**	**Q4-2023**		
Average CASA ratio	45.2%	44.6%	43.6%	-	-

- Q4-2023: 9.3% y-o-y growth in average CA and 7.5% y-o-y growth in average SA
- FY2023: 13.5% y-o-y growth in average CA and 13.3% y-o-y growth in average SA

Advances (Loans): Core banking is about taking deposits and giving loans. If deposits are the first leg, advances are the second leg.

As an investor studying a bank, check out what its loan book is made up of. More than half of ICICI Bank's loan book is retail. Having a large, diversified retail loan book is good. Each loan amount is small, and a default by one or a few borrowers will have a negligible impact on the bank's balance sheet. Retail loans can be further de-risked by giving loans for housing, auto, credit cards, personal loans, consumer durable goods, etc.



Corporate loan amounts are large, and loan book is built up fast. However, a single corporate loan default can hurt the balance sheet significantly. Basically, risks are concentrated in the case of corporate loans. A healthy mix between corporate and retail loans is preferred.

Rating-wise loan book, excluding retail and rural portfolio

Rating category[1]	Mar 31, 2020	Mar 31, 2021	Mar 31, 2022	Sep 30, 2022	Dec 31, 2022	Mar 31, 2023
AA- and above	27.3%	35.3%	36.1%	46.3%	45.3%	46.9%
A+, A, A-	36.9%	33.7%	35.7%	26.8%	27.8%	26.6%
A- and above	**64.2%**	**69.1%**	**71.8%**	**73.1%**	**73.1%**	**73.5%**
BBB+,BBB, BBB-	29.8%	25.6%	24.5%	23.8%	24.1%	24.3%
BB and below	3.0%	3.6%	2.2%	1.5%	1.2%	0.8%
Non-performing loans	2.4%	1.1%	0.7%	0.6%	0.5%	0.4%
Unrated	0.5%	0.5%	0.8%	1.0%	1.1%	1.0%
Total	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**
Total net loans, excluding retail and rural portfolio (₹ billion)	**2,639**	**2,818**	**3,276**	**3,521**	**3,669**	**3,826**

Banks also report a credit rating-wise break-up of the overall health of their corporate loan book. Credit ratings of A or above are safer. Some banks might also show the NPAs in each loan category. This metric can give insights into the tension or potential in any particular sector.

Liquidity: Banks must maintain a certain minimum level of liquidity to ensure that the depositors have access to their funds when required. The RBI mandates the banks to maintain two ratios.

- **Cash Reserve Ratio (CRR)**: CRR is the minimum cash a bank has to maintain as a percentage of total deposits. As of this writing, in July 2023, banks have to maintain a minimum CRR of 4.5% of the net deposits. The idea of maintaining CRR is to ensure that depositors have easy and continuous access to their deposits.
  In times of stress or bad news around a bank, depositors rush to take their money out of the bank. The bank should have enough cash to service these withdrawal demands. When the first wave of demands is serviced, the rest of the depositors might see it as a sign of assurance of the bank's financial stability.

- **Statutory Liquidity Ratio (SLR)**: This is a second-order liquidity ratio after CRR. After providing cash for CRR, 18% of net deposits have to be maintained in SLR. The idea is that the bank should be able to service withdrawal demands even after exhausting CRR. However, maintaining so much liquidity in cash would mean the bank cannot use it to run or grow its business. Therefore, SLR can be maintained in the form of liquid securities such as gold or government bonds. These securities deliver at least some gains apart from maintaining liquidity.

Digitalization: This aspect does not include any ratio. It is more qualitative in nature. The number and growth of accounts opened, FDs booked, loans approved, and credit cards issued through digital channels are important indicators of a bank's progress in digitalization. Digitalization has become more of a hygiene factor for banks. Digitalization may not make a bank unique, but not having a digital presence is a sure deterrent to its growth. In their annual reports and quarterly investor presentations, banks often give an update on the progress of their digital initiatives.

Branches and other infrastructure: The number of branches, ATMs, employees, credit cards, and customer base are some infrastructural parameters that you could look at. However, more or less of these parameters may not necessarily mean good or bad for a bank. For example, a bank might have issued a large number of credit cards, but spending per credit card could be low. Similarly, a bank focusing on corporate banking might have a few high-value customers, while a bank focusing on retail banking might have many low-value customers.

The idea is to look at external trends and see which banks stand to benefit from those trends. For instance, if there is stress in the balance sheets of businesses, perhaps the bank focusing on corporate banking might underperform. The approach here is nuanced and subjective to your interpretation of economic trends. If you believe the whole banking industry will do well, you could even buy into a banking ETF or index fund.

9.2 – The Checklist

This table contains all the parameters covered above and the previous chapter on banking, with FY23 numbers for the five largest Indian banks by market capitalization. You may use this as a ready checklist to ensure you have covered all the parameters in your banking sector analysis.

FY23	HDFC Bank	ICICI Bank	SBI	Axis Bank	Kotak Mahindra Bank
Source of Revenues ₹ Cr					
Corporate	91817	50615	100160	35597	18131
Retail	142273	103775	167522	91619	19179
Treasury	34323	84537	101805	25446	7438
Others	40394	62120	107597	3574	27775
Total Revenues ₹ Cr	308807	301047	477084	156236	72523
Net Interest Income ₹ Cr	92970	70523	144841	42946	21552
Net Interest Margin (%)	4.10%	4.48%	3.37%	4.02%	5.33%
Capital Adequacy					
Tier 1 Capital	17.10%	17.33%	12.06%	14.57%	20.78%
Total Capital Adequacy Ratio	19.30%	18.01%	14.68%	17.64%	21.80%
Asset Quality					
Gross NPA	1.12%	2.81%	2.78%	2.02%	1.78%
Net NPA	0.30%	0.48%	0.67%	0.39%	0.37%
Provision Coverage Ratio (PCR)	73.21%	51.55%	76.40%	81.00%	79.30%
CASA %	44.00%	43.60%	43.80%	47.00%	52.80%
Total Deposits ₹ Cr	1,882,663	1,210,832	4,468,536	945,825	363,096
Advances ₹ Cr	1,661,949	1,083,866	3,267,902	868,388	319,861
Infrastructure					
Branches	7800	5900	22400	4900	1780
ATMs (Jul-2023)	20555	18640	65953	15793	3153
Credit cards issued	18542304	14988851	17550747	12739961	5296061
Return on Equity %	17.40%	17.30%	24.42%	18.84%	14.36%
Return on Assets %	2.07%	2.16%	1.22%	2.18%	2.62%

9.3 – RBI On The Banking Sector

The RBI publishes views on the banking sector and the economy in various annual and semi-annual reports. A few examples are listed below.

- **The Financial Stability Report** is published semi-annually. It comments on the state of the global and domestic economy. It also mentions the industry-wide average capital adequacy and asset quality ratios. The RBI applies stress tests to ascertain the overall health of the banking sector. According to the Financial Stability Report for June 2023, Scheduled Commercial Banks (SCBs) will be able to maintain capital adequacy even under severe stress scenarios. You could use this report to have a bird's eye view of the banking industry.
- **Report on Trends and Progress of Banking in India** is a report card of the banking sector. This report is published annually. Apart from its comments on digitalization, profitability, interest rates, and financial health, the report also shows how the sector and the regulator are addressing stressed assets (NPAs). Regulatory updates are part of this comprehensive report, too.

Apart from these reports, the banking industry's trends, health, and potential can be studied from the **RBI's annual report and the regular bulletins** on its website.

While the financial statements of banks are often considered difficult to understand, I believe the easy availability of complex ratios and loads of data from the RBI make banking a relatively comfortable sector to analyze. 🙂

The next chapter is going to be a little challenging, I think. Stay tuned.

Key Takeaways

1. Analyzing a bank involves studying its revenue structure, interest margins, capital adequacy, asset quality, deposits, loan book, and liquidity.
    1. Revenues sources generally include corporate, retail, treasury, and others (investment banking, insurance, etc.)
    2. Capital adequacy is judged from a bank's tier-1 and tier-2 capital
    3. Asset quality is judged by a bank's Gross NPA, Net NPA, and Provision Coverage Ratio (PCR)
2. It is imperative for every bank to have a robust digital infrastructure.

3. The RBI's regular and frequent reports on the banking landscape of India are a good source of information for anyone analyzing the sector.

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32 comments

1. *ANOOP* says:
   February 15, 2025 at 8:55 pm

   Hi,

   I want to understand which is the best way to identify intrinsic value of banking sector companies(like HDFCBANK, ICICIBANK). currently I am using DCF analysis for other companies.

   Reply
2. *Awanish Singh* says:
   August 26, 2024 at 11:45 am

   Thank You for this much needed module on sector analysis Vineet. I would like to appreciate the fact that this passing of baton from Mr Karthik has not dent the quality of education from Zerodha Varsity.

   Can we expect another chapter on analysis of NBFCs\' Vineet?
   If not, then how one analyses it?

   Thank You Vineet.
   God Bless.

   Reply
   -  *Vineet Rajani* says:
     August 26, 2024 at 12:41 pm

     Thank you for the kind words, Awanish. I shall include NBFCs in my list of sectors to add. 🙂

     Reply
3. *Navee Nathan L* says:
   April 20, 2024 at 12:40 pm

   Hi, This content really helps me understand how bank business works. Will you please analyse sectors like healthcare and pharma? and I want to say \"Hi\" to Rangappa, and please talk more about personal finance.

   Reply
4. *Varun* says:
   March 9, 2024 at 8:48 pm

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10. Steel (Part 1)

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10.1 – Overview

As I want to start writing this chapter on steel, I am thinking of a good way to start. I look out the window; the balcony railing is made of steel. The chair I am sitting on has steel rods. Cars, utensils, boats, hairpins, space crafts, screws, buildings, toys, and guns are made of steel. It has applications at home, on the streets, in defense, in space exploration, and whatnot. Steel is perhaps the most commonly used material in the modern world.

It is a massive industry and a major employment generator. In 2022, China was the world's largest steel producer at 54% global share. India stood a distant second at 6.6% of the world's production. Due to China's global steel dominance, steel players in all other countries have become price takers.

A price-taker business or sector has little control over its pricing. External factors heavily influence the product prices of such businesses. Most commodity businesses are price-takers.

A price-maker business can independently decide its product prices and even influence its competitors' prices. Externalities have little influence. Apple and Nike are price-makers in their respective industries.

Remember, in late 2021, China had ordered a temporary shutdown of some steel manufacturers due to energy shortages and emission concerns? This caused global steel prices to rally. Also, the scaled-down domestic steel production caused China's iron ore producers to export more iron ore, thereby depressing global iron ore prices. Cheaper iron ore and expensive steel produced solid profits for Indian steelmakers that year.

The world's per capita steel consumption is about 233 kg, while India's per capita steel consumption is roughly 77 kg. India's current steel production capacity is 125 mtpa. The plan is to take the capacity up to 300 mtpa by 2030. While growing exports is always good, I believe most of this steel will be for domestic consumption.

Note that China produces over 1000 mtpa but exports only 70-80 mtpa. It uses over 90% of its steel domestically. Sure, a lot of domestic usage must be for manufacturing goods that will be exported. But the crux of the matter is that steel production and consumption seem inherent to India's growth plans.

Steel is commoditized globally. Commoditization happens when companies offering the same product cannot differentiate in quality and features. Metals like steel, aluminium, gold, and silver are commodities. Crude oil is also a commodity. In such cases, companies compete based on sourcing, distribution, marketing, and financial muscle.

I like reiterating that a manufacturing sector is best analyzed by understanding its value chain. I introduced the concept of value chain in Sector Analysis, the first chapter of this module. I will break down the steel value chain into three sections – sourcing, production, and distribution.

10.2 – Where are the raw materials for steel sourced from?

Iron ore and coking coal are the primary inputs for making steel. About 1.7 tonne of iron ore and 0.8 tonne coal go into making one tonne of steel. However, coking coal is a larger cost center. Iron ore would cost around

$100/tonne. Coking coal comes for about $250-300 per tonne. Therefore, coal prices have a larger impact than iron ore prices on steel prices.

Sourcing coking coal: While steelmaking requires coking coal, India specializes in thermal coal. India does not have adequate reserves of coking coal. Indian steelmakers rely on imports for 90% of their coking coal requirements. Captive coal mines of Indian steelmakers help control only some costs. They have to buy the rest from Australia and a bit from Russia and Indonesia. Importing coking coal makes the process expensive.

Steelmakers use Pulverized Coal Injection to control coal costs. PCI is a process of injecting large volumes of fine coal as a partial replacement for coking coal.

Further, to help decrease reliance on imported coal, the Indian government, in June 2023, decided to reserve some coal mines with attached washery operations exclusively for steel companies. The coking coal mined in India needs to be cleansed of impurities to make it more combustible. Coal washery uses water and industrial separators to filter shale, sand, and stones out of the raw coking coal to make it usable for steelmaking. Non-coking coals may also be washed for applications in other industries.

Sourcing iron ore: India is abundant in iron ore. Iron ore can be of two types – hematite and magnetite. India primarily uses Hematite. Hematite iron reserves are mainly found in the eastern states of Odisha, Jharkhand, Chhattisgarh, Assam, and Bihar. Magnetite is a richer source of iron ore but is mostly found in the ecologically sensitive areas of the Western Ghats. Therefore, recoverable reserves of Magnetite are roughly a third of recoverable Hematite reserves. The southern states of Goa, Karnataka, Andhra Pradesh, Kerala, and Tamil Nadu have the most Magnetite reserves in India.

Like I said earlier, cost control is critical for commodity companies. Larger steel companies have integrated backwards to control costs. Tata Steel meets 100% of its iron requirements and about 20% of its coal requirements in India from its captive mines. JSW meets ~40% of iron requirements from captive mines.

Did you know that JSW Steel has a ~24 km conveyor belt between its captive mines and the Vijayanagar plant? It is a great cost-cutting measure, but the length of the belt is astonishing.

10.3 – How is steel produced?

Setting up the raw materials

Iron ore can be in the form of sinter, pellets, and lumps – depending on the iron ore grade. A high-grade ore can be used as lumps; lower grades might go as pellets or sinter. Pellets are small oval-shaped lumps that are hardened using fuel. Sinter iron is grainy. If the extracted iron ore has high impurities, it is ground into gravel, cleansed using magnets, and processed into sinter.

Parallely, coking coal is heated in an oven to produce coke and clean it of impurities. Coke is the source of carbon required in the steel alloy. Coke comes in the form of briquettes. Gas produced in this heating process is used as fuel. The by-products, tar, and sulfur, are extracted and refined.

Making iron

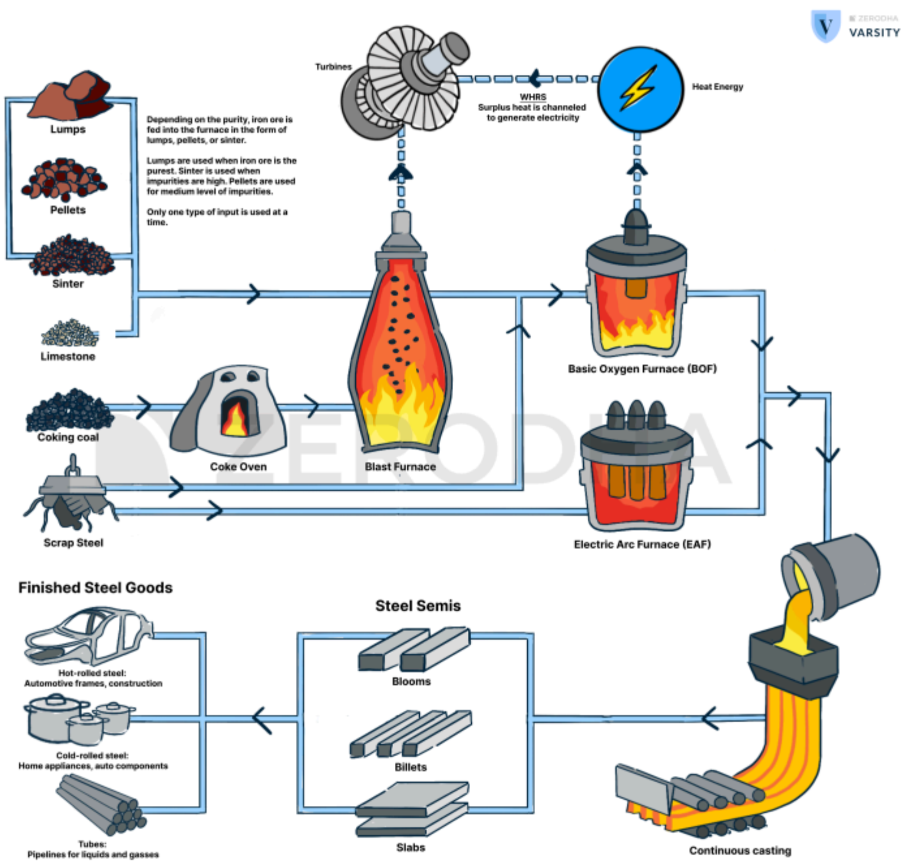
The iron ore and coking coal are now fed into a blast furnace from the top. Limestone and some other additives are also added.

The mixture is heated inside the furnace at temperatures as high as 2200 degrees Celsius.

This process creates pig iron or molten iron in the bottom half of the furnace. The limestone combines with other impurities to form slag. The slag is used as an input in road construction and cement making. We have seen in the cement chapter of this module how slag is blended with cement.

The molten iron is released from below the furnace, and the slag is skimmed off the top.

This molten iron is not pure. It is treated again to stabilize its iron content. At this stage, carbon, sulfur, phosphorus, manganese, and silicon content must be managed, and other elements must be added depending on the type of steel required. While the molten iron here can be used for casting iron goods, most of it goes into making steel.



Making steel

So far, we have just made iron out of iron ore. This is where the actual steelmaking begins. There are two common ways of making steel.

1. Basic Oxygen Furnace
   The molten iron is fed into a basic oxygen furnace (BOF). Some scrap steel (<30%) may also be added. High-purity oxygen is blown into the furnace, causing the temperature to soar above 1700 degrees Celsius. The outcome is liquid steel, carbon monoxide, and slag. Carbon content in the steel is down from 4% to 0.05%. The heat generated from oxidation creates carbon monoxide, which is cleaned and reused as fuel. Oxidized impurities combine with limestone to form slag.
2. Electric Arc Furnace
   This process does not involve iron-making. EAF primarily uses scrap steel to convert into the final product. Steelmakers using EAFs are also called mini-mills. Mini-mills are often found closer to cities.
   Let’s say an automobile company in Tamil Nadu bought sheets of steel. It will cut the sheets in the required size. The remaining sheet is scrap. Instead of sending it all the way back to Odisha or Jharkhand, where most

steel plants are, it can send the scrap steel to a mini-mill in its vicinity. This steel plant relies mainly on scrap steel as its input. It uses virgin steel semis only to balance the final composition. That way, dependency on iron mines is reduced, and proximity to clients is ensured. Since it recycles steel for reuse, the process is environmentally friendly, too.

Now, back to the EAF process. The furnace is filled with recycled steel scrap. A powerful electric current passed through the furnace creates heat to melt the mixture. Limestone and fluorspar are added to the molten steel. Carbon and high-purity oxygen are blown into it. As a result, molten steel is formed, and the impurities combine to form slag.

Steel Casting

Through either of the two methods, molten steel is now ready. It is sampled and analyzed. Other alloys may be added to ensure the desired composition. Once it reaches the correct temperature and composition, it is extracted from the bottom of the furnace.

From there, the molten steel is channeled into a caster. It comes out in the form of a slab, bloom, or billet. The steel is now ready. This steel is still not in the shape or size we can use. Therefore, these products are called semis. Semis have to be molded into the final product.

Vertically integrated steelmakers like Tata Steel and JSW Steel might carry out molding in-house. Specialist steelmakers such as APL Apollo Steel Pipes buy semis and are engaged only in value addition.

Value addition may be done using hot rolling or cold rolling of steel, depending on the type and grade of steel required. Making steel tubes will undergo different processes.

Hot rolling happens when the molten metal is molded into required shapes at high temperatures, around 900-1000 degrees Celsius. Hot rolled steel is cooled at room temperature. It is used in applications where the exact shapes and appearances may not be necessary, such as construction, automotive frames, and agricultural equipment, among other applications.

Cold rolling happens when the molten metal is molded below recrystallization temperatures, around 500-700 degrees Celsius, depending on the properties of the steel. It is used in applications where precision, smoothness, and appearance are important, such as home appliances and automotive parts. It can also be coated with zinc to protect from corrosion, with tin for cans, and with plastic/paint coating for protection and decorative purposes.

Cold-rolled steel is more expensive than hot-rolled steel as it takes longer to make and is used for more specific purposes.

Steel tubes may be welded or seamless. Welded tubes are made by rolling a flat sheet of steel and welding together its edges. Seamless tubes are made by piercing a hole through a hot billet.

I extensively referred to this video to properly understand steelmaking. Take a look if you like.

So far, we have seen how the raw material for steel is sourced and how steel is produced. In the next chapter, we will see how steel is distributed, the role of scrap steel, and the impact of external factors on the steel industry. We will also see a checklist of the parameters to compare various steel makers.

See you in the next chapter.

Key Takeaways

1. Steel is the most commonly used material in the modern world. India's per capita steel consumption of 77 kg is much lower than the world average of 233 kg. The industry is undergoing a rapid capacity addition.
2. Coal and iron ore are the primary inputs for making steel. Coal has a larger cost per ton than iron ore. Coal prices have a more significant impact on steel prices.
3. Steel is produced using two different methods.
    1. The Basic Oxygen Furnace (BOF) method primarily uses iron ore to make steel products.
    2. Electric Arc Furnace (EAF) recycles scrap steel into steel products.
4. Steel is a commodity. Therefore, manufacturers do not have much control over its pricing. They focus on vertical integration to control costs and improve margins. Large steelmakers maintain owned iron ore mines, coal mines, power plants, and shipping fleets to control costs.
5. Value addition by offering specialty steel products is another way steelmakers resort to in order to improve margins.

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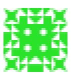
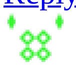
9 comments

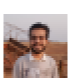
1.  *Kiran* says:
   July 19, 2024 at 3:11 pm

   Hi Vineetji, thanks. Many doubts cleared. I have some quiries :
   a. What is sponge iron & ductile iron.
   b. Where graphite electrode is used ?

   Reply
2.  *Sumantha Saha* says:
   March 3, 2024 at 11:00 am

   Hi Vineet, Amazing explanation. Can you share your framework for analyzing a sector? I mean the real stuff like where to start (Research Reports/ Annual Reports, etc.), where to get the data, and summarizing the whole value chain, etc.

   Thanks and regards

   Reply
    -  *Vineet Rajani* says:
      March 4, 2024 at 12:47 pm

      Hi Sumantha, thank you. 🙂

      I usually start by looking at the \"Management Discussion & Analysis\", business-overview, and performance highlights sections of a few companies in a given sector. This gives a fairly good picture of the key parameters to look at. As for understanding the supply chain, while you can get a lot of content on Google, it is better to talk to someone from the industry to cross-check your understanding.

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11. Steel (Part 2)

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11.1 – The context

In the previous chapter, Steel (Part 1), we established that steel comes in various grades and forms and has a wide range of applications. We also saw how steel is produced and why value addition is necessary to improve profitability.

In this chapter, we delve deeper into value addition with respect to its importance in the distribution of steel. I have also created a checklist of parameters you could use to compare steelmakers. The features and the future of the industry will conclude the chapter.

11.2 – How is steel distributed?

Who buys steel?

Steel is not a retail product. But steel products may be retail products. Let me elaborate. We do not buy a steel rod or slab, but we buy furniture, appliances, utensils, cars, and other products made of steel. So, the manufacturers of these products are buyers of steel. Steel is a raw material for them.

Let's say a car manufacturer wants steel for its cars. It can buy steel sheets from a steel manufacturer. It will cut and mold the sheets in the required shapes and sizes. Some carmakers might get a third party to do the cutting and molding. Old and established carmakers might do this function in-house, but newer manufacturers could use a third-party service. Even the newer plants set up by established carmakers might want this service.

Some steel makers might offer to do the cutting and molding jobs also. They do so by setting up "service centers" closer to their client locations. These service centers are generally set up as independent subsidiaries. They may be free to buy steel sheets from the parent company or any other steelmaker.

JSW Steel has several such downstream JVs and subsidiaries. Some of its subsidiaries are Anjar Works (steel plates and coils), Kalmeshwar Works (color-coated products), and JSW Vallabh Tinplate Pvt. Ltd. (tinplate), among many others. Tata Steel was awarded an order for a complete seating system for 22 rakes of Vande Bharat Express, which will be delivered from its Khopoli facility in Maharashtra.

Remember how steel manufacturers are always looking to sell value-added products to increase their margins? This is probably the farthest they can go to offer value-added products. Involvement beyond this in the value chain might make them a car or appliance manufacturer.

Reiterating here that since steel is a commodity, pricing power is low. Value-added products are an easy target to achieve differentiation and pricing power, which leads to better profitability. However, going far down the value chain can be risky. They may not have the know-how to add value. Figuring out could require massive investments and dilute management focus. Creating subsidiaries is a good way out, as the subsidiary's management will have the sole focus on adding value.

Whether value-addition is adding to a steel company's competitive advantage and profitability is for you to figure out through your analysis. A simple way would be to look at how the steelmaker's product mix has evolved over the years. Have the sales of value-added products grown? Has the profitability from those products improved? Has the overall profitability improved?

If the answer to these questions is yes, perhaps value addition is improving the company's performance. If the answer is no, there could be two possibilities – the company is still figuring out its value-addition endeavors or has failed at them.

Transportation of steel

Large steelmakers maintain a fleet of containers, trucks, and rail wagons. This fleet is used for both bringing in scrap and raw materials and sending out finished goods. The decision to own logistics is again driven by the possible cost savings it could deliver.

- Tata Steel's logistical infrastructure handles more than 100 mtpa of materials, including raw materials, finished products, and by-products. Its entire material movement is handled through a combination of seven ports, 24 stockyards, and 37 steel processing units.
  Tata Steel has long-term contracts with two ports and is building one captive port. It is also investing in the private freight train schemes of the Indian Railways to improve rake availability. Tata Steel is transporting about 22% of raw materials and 11% of finished goods through private wagons and rakes.

- JSW is also investing in its own rakes to improve shipping capacity via rail. Its recently listed subsidiary, JSW Infrastructure, is the second-largest commercial port operator in terms of cargo handling capacity. It operates 9 ports in India and 2 in UAE.

- APL Apollo's distribution channel includes warehouses and branch offices across 29 cities. Beyond that, it has a three-tiered distribution network that consists of over 800 dealers.

Depending on the type of steel product and the quantity of purchase, the channel of distribution and mode of transfer will differ. The ownership of the distribution channel further depends on the scale of operations and the demand for value-added products.

11.3 – The Scrap Economy

The advent of Electric Arc Furnace (EAF) technology in steelmaking has led to several mini-mills cropping up across the country. These mini-mills depend on scrap steel as their primary source of raw material.

They are called mini-mills for two reasons. First, they operate at a really small scale to cater to the needs of local businesses. Second, scrap availability is limited. When the primary raw material is limited in supply, the operating scale also will be limited.

Why is scrap supply limited? Scrap is not produced; it is generated.

- Previously, steel sheets, bars, and rods came in standard sizes. So, cutting them in the required shape and size would generate about 15-20% scrap. Now, appliance manufacturers, carmakers, real estate companies, and other large steel buyers demand steel with custom specifications. Therefore, wastage per sheet or tube has come down to almost 7-10%.

- Scrap collection happens locally. Collecting more scrap would mean going to farther places, which could increase logistics costs.

- Competing with other scrap buyers in the same locality would mean offering higher prices, thereby adding to operating costs.

- As noted at the beginning of this chapter, India's per capita steel consumption is too low. Only in recent decades our consumption has picked up. Since we did not consume a lot of steel in the earlier decades, there is not a lot that could become scrap today. Even when our consumption has picked up, the lifeline of our steel products is likely to be higher than our Western counterparts. This is because Indians generally do not replace cars, furniture, appliances, or utensils very frequently.

Scrap economics is strange. The more you buy, the higher the prices go. This is unlike other products or materials where bulk buying is generally associated with cost savings.

Why am I discussing scrap so much in detail? Because the larger steel players have also been investing in EAFs. It may not be big today, but it will likely become a primary steel production method in the decades to come. Recycling is imperative in a carbon-neutral world that we are trying to achieve.

11.4 – Features of the steel industry

Several features can be observed while trying to understand the production and application of steel. These features also throw light on the parameters you could look at when studying a steelmaker. Here is a list of features that I observed.

- Steel is an **asset-heavy business**. Setting up a steel plant requires massive infrastructure. Spending on this infrastructure happens before any revenues are made. Therefore, steel companies usually have a high level of borrowings on their balance sheets. Maintaining the infrastructure is a major cost. The life of these assets has a bearing on the long-term performance of the business.
  If you are looking for a deeper analysis, you could attempt a cost-benefit analysis of the existing and upcoming plants of a steel company. This exercise could tell you whether or not the markets have assigned a fair value to its assets.

- **Limited pricing power –** Being a commodity, steel companies are largely price takers and not price makers. China's global dominance with over 54% market share further pressurizes Indian steelmakers to maintain competitive prices. Owing to customs, shipping costs, and other levies, Indian steelmakers can sell steel at a premium price to Chinese steel, but pricing decisions cannot be untethered to China's moves.

- The **focus on value-added products** is high to improve profit margins. Value addition gives a steelmaker a chance to differentiate its product from peers. Differentiated offerings can command a premium. Therefore, steelmakers have been investing in value-additive processes.

- **Cyclical nature, core industry** – Economic growth improves the purchasing power of consumers. More people buy houses, cars, appliances, and furniture when the economy is growing. Economic growth also motivates businesses to expand and invest in plants and machinery. The inverse is true when the economy is slowing. These products are major consumers of steel. The performance of these products, and thus steel, is significantly linked with the level of economic growth.

- **Energy intensive –** The coking coal required in steelmaking needs to be imported. Shipping consumes energy. This coal is burnt to produce heat in first making iron and then steel. The entire process consumes a lot of energy. We have already seen how coal prices impact steel prices more than iron ore prices. Clearly, power and fuel are a major cost center for steelmakers. To control costs better, many have started maintaining captive power plants.
  Steel companies also set up Waste Heat Recovery Systems (WHRS) to channel the tremendous heat emitted from the process into generating electricity. WHRS serves two purposes – cost savings and

sustainability goals.

- **Shipping costs –** Shipping or freight costs are enormous. Therefore, larger steelmakers own their fleet of trucks, railway wagons, and shipping containers. Some even operate ports. The steelmakers that do not own their distribution might have to offer higher margins to their channel partners by keeping smaller margins for themselves. That is also a cost indirectly.

- **Vertical integration is considered an advantage** – With several considerable cost centers along the value chain, vertical integration allows steelmakers a wider scope to control costs. Captive iron ore mines, coal mines, power plants, distribution centers, and transportation are commonplace for larger players. Smaller players might not be able to afford so many captive facilities, so their primary focus would likely be on value-added products.

11.5 – The Checklist

Now that we have discussed the process of steelmaking and the features of the steel industry, let us consolidate all of it into a checklist of factors that could be used as a reference for studying the steel industry.

FY2022-23	Tata Steel	JSW Steel	SAIL	APL Apollo Tubes*	Jindal Steel & Power
EBITDA / Ton	14,606	7,814	13,805	4,481	12,630
Production Capacity (MnTPA)	35.0	27.7	20.2	3.6	9.6
Production Volume (MnT)	30.7	23.6	17.2	2.3	7.9
Sales Volume (MnTPA)	28.8	21.9	16.2	2.3	7.7
Captive Iron Ore Supply	100%	41%	100%	--	60%
Captive Coal Supply	22%	--	<7%	--	50%
Input Cost Ratio	46.5%	56.2%	41.2%	86.7%	46.9%
Power and Fuel Cost Ratio	3.9%	10.5%	6.6%	1.3%	14.4%
Freight Cost Ratio	5.2%	4.8%	3.5%	2.9%	4.7%
Debt-Equity Ratio	80.7%	120.6%	31.9%	29.0%	33.4%

** APL Apollo is a specialty steel product manufacturer while all others are ingrated steelmakers.*

The first few ratios are about capacity, production, and sales. You must find out how much a steelmaker can produce, how much it produced, and how much it sold. If a steelmaker sold more than it produced, it could be due to two likely scenarios – one, it had excess stock from the previous year or it also or two, it bought from other steelmakers to meet customer demand.

Having captive coal and iron mines is to understand the level of backward integration and, thus, the scope of cost control.

You will notice that input cost ratio, power and fuel cost ratio, and freight cost ratio are the same parameters we studied in the Cement chapter of this module.

While you have studied the debt-equity ratio in the Fundamental Analysis module, I have added it to this checklist because asset-heavy businesses like steel tend to carry large debts. You might want to study other leverage ratios, too.

11.6 – Future of the steel industry

Upon completing 50 years in 2017, World Steel Association laid down three major challenges for the steel industry for the next 50 years.

- The world is using steel more efficiently in terms of production and application. Efficiency could eventually taper off the demand for steel. The industry will then have to get used to consistently slower growth.

- The circular economy pushes for recycling. The industry will have to absorb technologies that are efficient at recycling.
- Carbon emissions will have to be significantly reduced. Steel will have to prove its commitment to environmental sustainability.

As I write this chapter in 2023, these challenges still remain relevant.

Efficiency in steel could be because of

- Better production methods that have minimum wastage,
- Optimum product designs that use minimum steel, and
- Recycling of steel.

Currently, about 30% of the world's steel is produced using the Electric Arc Furnace (EAF) method, the one used in producing steel from scrap steel. Rapid industrialization at the global level in recent decades has increased steel usage considerably. In the decades to come, more steel will be available for recycling. The share of recycling will most likely only go up. Existing companies will have to be ready with the technology and capacity to produce recycled steel.

Happy learning. 🙂

Key Takeaways

1. The distribution of steel goods is a function of the size, nature, location, and requirements of the buyer.
2. Large steelmakers own the distribution channels far deep into the value chain.
3. Value-addition can add to the competitive advantage and profitability of a steelmaker. However, going deep into value-addition could create inefficiencies.
4. Steelmaking is an asset-heavy business. Therefore, steelmakers might carry huge debt.
5. The process of steelmaking is a massive polluter. Steel companies are always looking to control emissions by optimizing their processes. Installing Waste Heat Recovery Systems (WHRS) is one of the most common measures towards sustainability.
6. The share of recycling will likely increase as the world moves towards a circular economy.

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24 comments

1.  *Omkar Mistry* says:
   October 8, 2024 at 12:40 pm

   so steel producer company or Specialty steel producer like APL Apollo…on what terms do they sell…I mean is it absolute markup amount per ton or some % markup per ton above cost. If it is Markup % then Margins would been stable….right? And will EBITDA per ton or EBITDA % is the right way to look all steel company. Appreciate your view in this:)

   Reply

   -  *Vineet Rajani* says:

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12. Hotels (Part 1)

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12.1 Why the Hotels sector?

The past few chapters have been about heavy industries – cement and steel, banking and insurance. These are the building blocks of an economy. We will study more building blocks, but let's slow down a bit. Let's explore a few sectors that are indicators of an economy's growth and prosperity.

We will explore the analysis of the hospitality sector, more specifically, the hotel industry. How can hotels indicate economic prosperity? Hotels are essentially a discretionary spend. People spend on hotel stays after they have fulfilled their necessities. When more and more consumers can spend on things other than necessities, the economy is said to be growing. Remember how consumers continued to spend on groceries but stopped traveling during the Covid lockdowns?

As I write this chapter towards the end of 2023, hospitality is said to be the strongest employment generator, as other sectors are going through a slowdown. Post-Covid travel boom, destination weddings, business travel and events, and the opening up of new airports under the UDAN scheme are all said to be the demand drivers for hotels and hospitality at large.

12.2 – The hotel industry in India

- The hospitality sector is arguably one of the largest employers in the world and in India. It employs about 10% of India's workforce directly and millions indirectly.
  The housekeeping staff, servers, concierge, etc, are direct employees of a hotel. Laundry staff, security staff, cab drivers, etc, are indirect employees.
- India's hospitality sector is valued at ~$24 billion in 2023. It is expected to reach $29 billion in 2028. Note that this is a forecast for the hospitality sector, not just the hotel industry. Hotels are a large part of the hospitality sector. Restaurants are another large part. I plan to cover restaurants separately as they have different economics and key performance indicators.
- International tourist arrivals were under 11 million in 2019 and over 6 million in 2022, as per the Ministry of Annual Report 2022-23. India Brand Equity Foundation (IBEF) expects this number to surpass 31 million in 2028.

12.3 – Features of the sector

Hotels are a service industry. Unlike salons, movies, laundry, or plumbing, where a service could take only a few hours, hotels offer a longer form of service that could last a day, a few days, or even weeks. Therefore, the sector harbors some peculiar features.

People-intensive – Hotels are people-intensive on both customer and employee fronts. How customers experience their stay can determine whether they would like to return in the future.

Throughout their stay, a customer would interact with the valets, security guards, receptionists, concierge, bellhop, butlers, servers, and housekeepers, among others. Each of these professionals has different skills. Each one of them is expected to have great soft skills too.

For that, employees have to be adequately trained in their respective responsibilities. Keeping employees motivated in the hotel industry is a challenge. Angry or demanding customers could hurt employee morale. Training them to handle such situations is imperative.

You will notice that these aspects are qualitative. There are ways to measure customer satisfaction, but none is definite. Every hotel or organization will have its own way of measuring customer satisfaction. Two customers can rate the exact same experience differently.

The involvement of so many people in delivering a service makes it an operational challenge. Margins are difficult to maintain. Large hotel chains become large by establishing standard operating procedures and controlling wastage and costs.

Experience is the product – Like any service industry, a hotel stay is an experience. And experience is an outcome of several elements – decor, staff demeanor, staff's level of knowledge, quality of the bed, cleanliness of the room and common areas, goodies or freebies in the room, facilities on the property, etc.

Again, the effectiveness of all these offerings may be difficult to measure but they do collectively build a customer's experience. Certain offerings may improve customer experience while others may not. The factors that do not improve experience are very important. They are the bare minimum factors. For example, having drinking water in the room does not improve your experience, but not having it could seriously annoy you.

As the price point inches up, the level of the bare minimum also moves up. As more hotels start offering added services, very soon, those services will become the standard norm or bare minimum. Therefore, hotels charging a high price must keep innovating to augment and differentiate customer experience.

Offering differentiated experiences comes at a cost. Employee training also has to be more frequent and regular. Experiences can drive revenues as well as costs. In doing so, an efficient business is one that can balance profits.

New daily inventory – Suppose your local fruit vendor intends to sell 50 kilos of fruit every day. But today, he could sell only 40 kilos. He can try to sell the remaining 10 kilos the next day on top of the daily target of 50 kilos. He might even succeed. Can the same happen with a hotel? If a hotel with 50 rooms could sell only 40 rooms in a day, it cannot sell 60 rooms the next day. The next day's inventory will again be 50 rooms only. This is similar to airlines – unsold seats cannot be carried forward to the next flight.

However, only room inventory gets reset every day. Most other things and services that a hotel sells are not limited by a daily inventory. Restaurants can sell more food than their tables can accommodate by offering deliveries and room service.

Seasonal business – Children's vacations, wedding season, monsoons, festivals, etc., are major determinants of the level of business a hotel will get. Families often plan their holidays during their children's vacations. Hotel properties in tourist destinations often see a large influx of customers around vacations. Rooms rates also surge accordingly.

Most weddings in India take place between November and April. Destination weddings have also become popular. Therefore apart from driving the demand and prices of banquet halls and party lawns, weddings also boost the demand for hotel stays. Increasingly, most large hotels now have wedding venues as part of their offerings.

Many tourist destinations are open only for a few months during the year. Ladakh, Kedarnath, Badrinath, and Doodhsagar are some examples. Hotels in such places do not have business all year round.

Seasonality may often be reflected in the quarterly revenues of the businesses most affected by it. To mitigate this, hotels offer special discounts on room stays. The idea is to offer cheaper rooms and get customers to spend on food and beverages. Price competition is usually high in a dull season.

There are businesses that enlarge their target market by altering their offerings and marketing efforts. I am talking about Airbnb here. By popularizing homestays, Airbnb practically created this working class of people who call themselves “digital nomads”. They travel places for weeks and months. They work out of Airbnb’s homestays. Then the terms “staycation” and “workcation” came up.

This new category of travellers inspired conventional hotels to offer similar arrangements. Boutique and business hotels started offering weekly and monthly plans. Lemon Tree is now offering “day-cation” or day rooms between 7.00 am and 5.00 pm.

These innovations in room plans, price points, and overall offerings are meant to improve the return on asset ratio. The next point discusses this extensively.

Capital-intensive – Picture this. There is a wedding in your family. You will probably be buying clothes, gifts, and jewellery worth lakhs. You and a few family members would spend a few hours at each store choosing and buying these things.

It is going to be a destination wedding. The stay and wedding venue at a hotel will also cost lakhs. The hotel stay would be for a few days. You will need rooms for your guests and venues for all rituals and functions.

The point I am trying to make here is that the hotel will need much more space to deliver its offerings. This space, or real estate, is often a fixed cost. Space requirements are relatively smaller for a store.

Therefore, return on assets, or return on fixed assets, is an important metric for hotels. Hotels will always try to maximize their **revenue per square foot** to improve their return on asset ratio. They offer many add-on services to get their customers to spend more. Salons, spas, fitness classes, drawing classes for kids, bicycle rentals, gaming centers, etc., are a few such services I can think of. There can be many more.

A fixed-cost business often has a long gestation period. This means that if you are looking to develop a new resort, it could take a few years between the time you buy a land parcel, begin construction, and start serving customers. The money you employ will yield no returns for these years. Ratios such as return on equity and assets are impacted.

Many hotel chains run a mix of owned, managed, and franchised properties. There are various combinations. Let us see a few examples to understand these types of properties.

- IHCL owns and operates the Taj Mahal Palace & Tower, Mumbai. EIH owns The Trident Nariman Point in Mumbai.
- IHCL does not own but manages the Umaid Bhawan Palace in Jodhpur.
- Chalet and SAMHI own and operate hotel properties, but they take brand franchises from the likes of Marriott and IHG.

- Club Mahindra may own or lease its properties under its brand name. It also has short-term inventory arrangements with the local players at many destinations.
- Lemon Tree has a mix of owned, leased, managed, and franchised properties under its own brand name.

Managed or franchised properties enable a hotel company to grow its capacity without investing much in fixed capital.

If a large chunk of properties are owned, the chances of high debt on the balance sheet are also high.

Large unorganized sector – According to an estimate from Nov-2022, about 1.5 lakh hotel rooms are in the branded category or organized sector. Compared to that, independent hotels in the unorganized sector collectively had 29 lakh rooms. The unorganized sector may have rooms ranging from economy to luxury. Therefore, the level of competition arising from the unorganized sector may be difficult to ascertain. Nevertheless, the organized sector can attract more customers by virtue of their brands.

Having discussed these features, we are all set to dive into the key performance indicators of the hotel industry. But I will take it up in the next chapter for the sake of brevity.

Key Takeaways

- Hospitality, especially hotels, is one of the largest employers in the country.
- Hotels are a people-intensive business with respect to both customers and employees.
- Experience is the product that hotels sell. Rooms, food, and other services are a part of that experience.
- Room inventory cannot be carried forward. Today's unsold rooms do not increase inventory for tomorrow.
- Hotels are a seasonal business. Children's vacations, wedding season, business travel, etc, can drive the demand for hotel stays.
- The industry is capital-intensive. Investment in real estate is large. Therefore, some hotel operators may take properties on lease or rent instead of acquiring properties.

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10 comments

1. *Abhishek Kumar* says:
   January 5, 2025 at 2:07 pm

   Please gives a option for translation in hindi

   Reply
2. *Raja* says:
   December 31, 2024 at 12:54 pm

   Thank you for the excellent content, sir! Just like in the insurance sector, geographical presence is important here as well, right? For instance, cities where business activities are high matter too. Thank you!

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13. Hotels (Part 2)

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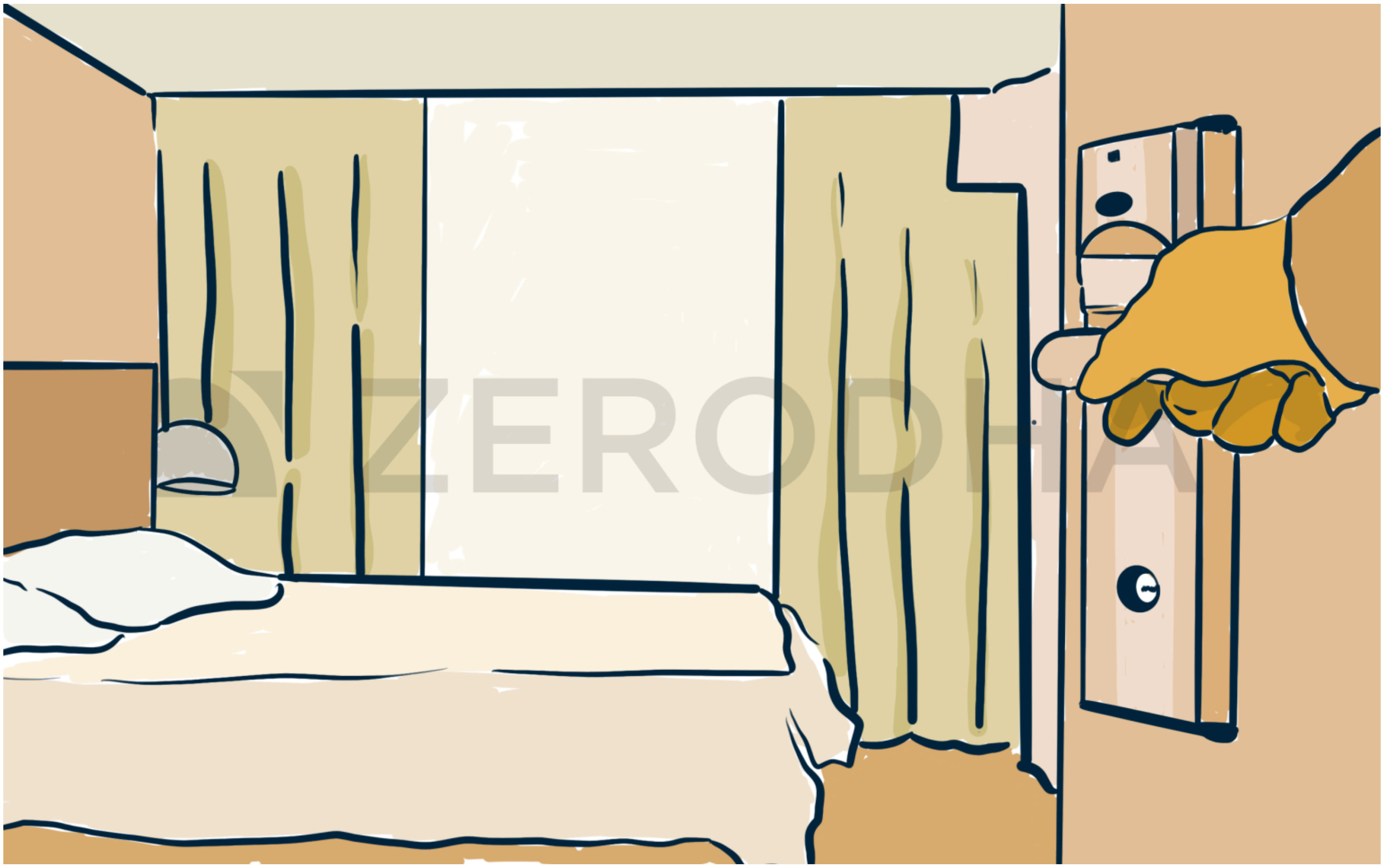
13.1 The aspirational value of hotels

I was once talking to someone researching the brand position of five-star hotels in India. And it occurred to me that while people may not be able to use or afford to stay at luxury hotels, they are still aware of some names. These names carry aspirational value for them. They might want to visit such five-star hotels with their first salary, on a date, or for some special occasion.

In the previous chapter, I spoke of hotels selling experiences and not just rooms or food. The price they charge is for the richness of experience they provide. To be able to afford that experience is a matter of pride for most. Hotels have to live up to the feeling of pride customers expect to have.

You could form a judgement of how well a hotel company is delivering experiences by studying the key performance indicators of the industry.



13.2 – The checklist

Considering the industry's peculiar features and the existing generally accepted standards, I have collated this checklist that one could use when analyzing the industry.

You will see in the table below that I have collated these numbers for different segments of hotels – five-star hotels, operators of five-star hotels, business or boutique hotels, and even a vacation seller. In your analysis, try comparing companies within the same segment.

Let me reiterate that this checklist must be used along with fundamental analysis and valuation models for holistic research of the hotel industry.

March-23	IHCL	Chalet Hotels	Club Mahindra	EIH	Lemon Tree
Number of properties	263	9	102	30	88
Number of keys	31,483	2,802	4,940	4,269	8,382
Owned/leased or Managed properties	50-50	100%	NA	25-50	40-48
Occupancy rate	72%	72%	84%	83%	68%
Average Daily Rate (ADR)	13,736	9,169	NA	14,308	5,340
ADR 2019-20	10,734	8,482	NA	11,705	4,347
ADR 3-year CAGR	8.57%	2.63%	NA	6.92%	7.10%
Revenue Per Available Room (RevPAR)	6,322	6,605	NA	11,247	3,936
RevPAR 2019-20	4,528	6,022	NA	7,874	3,058
RevPAR 3-year CAGR	11.77%	3.13%	NA	12.62%	8.78%
Room revenue to other sources	104.57%	149.16%	103.33%	95.50%	342.14%
EBITDA Margin	32.70%	42.60%	29.30%	33.44%	51.90%
Club Mahindra has 102 owned/managed/leased properties and access to 4300+ resorts through exchange network					
Club Mahindra does not have per room metrics. Its members get access to free room nights every year as part of their membership.					
Vacation rental revenues are considered as room revenues for Club Mahindra					
EIH's ADR and RevPAR are a simple average of four quarters					

Number of properties – This is a good proxy for understanding how geographically distributed a hotel company's operations are. A large number can help cushion the financial performance against seasonality. Seasonality bears on different regions at different times and in different ways. Impact on properties in one region can be compensated for by properties in other regions.

If a hotel company offers hotels in various categories, you can try to break this number down to understand its composition. For example, IHCL offers Taj branded luxury hotels, Vivanta branded premium hotels, Ginger branded business hotels, and Seleqtions branded experiential hotels. Such a hotel portfolio enables IHCL to cater to luxury tourism, business travel, wedding tourism, etc.

Number of keys – This is basically the number of rooms. So why not call it rooms? A suite or villa having multiple rooms for group travellers cannot be called a room. But such suites or villas are sold as a single unit. Hence, to avoid confusion, they are called keys.

Hotel properties with a larger number of rooms (or keys) have certain advantages – they can host conferences or weddings having large numbers of guests. Too many rooms can also become a fixed cost burden if there is not enough demand.

Having a large number of rooms also adds to the grandeur and aspirational value of a hotel.

Occupancy rate – If a hotel with 200 available rooms has guests in 150 rooms today, it is said to have a 75% occupancy rate today. The occupancy rates that hotels report are aggregated for the whole year for all properties collectively. Let's go step-by-step.

- A hotel company has 50 properties.
- It has 2000 rooms across these properties. So, in a day, it can sell 2000 room nights.
- Throughout the year, it can have 7,30,000 room nights (2000 rooms * 365 days).
- Practically, it will have fewer room nights than that. Repairs, maintenance, seasonal shutdowns, etc., can make rooms unsellable.
- Let's say 10% of the room inventory is usually unavailable. Therefore, available room nights will be 6,57,000 (7,30,000 – 10%).

- If the hotel company sells 5,00,000 room nights throughout the year, it will have a 76.1% occupancy rate (5,00,000 / 6,57,000).

A higher occupancy rate is better. It might be practically impossible to have a 100% occupancy rate. A hotel with 30-40% occupancy can also be profitable if it can charge a high price and control costs. However, comparison of occupancy with peers gives a better perspective on how well a hotel company is doing to attract customers.

Improving occupancy rates year after year could suggest improving brand strength. A declining occupancy rate could also result in deteriorating financial performance.

Average Daily Rate (ADR) – It is the total room revenues divided by the total number of rooms sold.

Let's carry forward with the example of the occupancy rate. The hotel company had sold 5,00,000 room nights during the year. Assume that it earned ₹315 Cr in room revenues. So, its ADR would be ₹6,300 (₹315 Cr / 5,00,000 room nights).

Improving ADR year after year implies improving revenue per square foot. How is ADR growth better than revenue growth? Revenues could grow by adding more rooms. In fact, revenues could improve even when ADR is falling. It will be using more assets to generate the same level of revenue. This may not be an optimal situation for the hotel. Let us look at a few examples in this table.

	Example 1	Example 2	Example 3	Example 4	Example 5
Room revenue for the year (a)	3,150,000,000	3,150,000,000	3,500,000,000	3,000,000,000	3,600,000,000
Number of rooms sold (b)	500,000	525,000	590,000	400,000	525,000
ADR (a/b)	6,300	6,000	5,932	7,500	6,857

Example 1 is what I used to explain ADR. Let us take that as the base example, and we will build upon that.

- In example 2, revenues did not change, but the hotel had to sell more rooms to maintain the revenues. Therefore, ADR fell. Perhaps more discounts were offered.
- In example 3, revenues have grown, but the number of rooms sold has grown faster. As a result, ADR fell. Continuously declining ADR could suggest declining brand strength.
- Revenues have decreased in example 4, and the number of rooms sold has decreased further. The ADR is higher. Such a phenomenon can occur due to an external shock like economic slowdown, pandemics, or natural calamities. Fewer people are willing to spend on hotels, and those who do spend are affected little by higher prices.
- The best situation is in example 5. Revenues have grown, and the ADR has grown faster. Continuously improving ADR along with growing revenues could suggest improving brand desirability.

Comparing ADR with peers shows a hotel company's pricing power. Stronger pricing power is usually an outcome of a strong brand. However, ADR must be analyzed deeper. Lemon Tree offers mid-priced rooms. Its ADR will be lower than that of EIH, which operates in the luxury segment.

For a hotel's management, ADR can help make business decisions. A study of ADR across quarters can help identify the impact of seasonality. Accordingly, the management can devise promotional or pricing strategies.

Revenue Per Available Room (RevPAR) – It is the total room revenues divided by the total number of rooms available.

Let's alter the previous example in the following table to understand RevPAR better.

	Example 1	Example 2	Example 3	Example 4	Example 5
Room revenue for the year (a)	3,150,000,000	3,150,000,000	3,500,000,000	3,000,000,000	3,600,000,000
Number of rooms sold (b)	500,000	525,000	500,000	400,000	525,000
ADR (a/b)	6,300	6,000	7,000	7,500	6,857
Number of rooms available (c)	600,000	600,000	600,000	450,000	650,000
RevPAR (a/c)	5,250	5,250	5,833	6,667	5,538
Occupancy Rate (b/c)	83%	88%	83%	89%	81%

Here again, example 1 is the base, and we will build scenarios on top of it. I have added the occupancy rate in this table to give more context.

- In example 2, the number of rooms sold increased, but ADR decreased. RevPAR did not change because the factors affecting it – room revenue and number of rooms available did not change.
- In example 3, the number of rooms sold and available were constant. The occupancy rate also did not change. RevPAR increased due to an increase in room revenues. Therefore, ADR was also higher.
- Revenues have decreased in example 4. Available rooms have decreased more. This could be due to external factors. Remember how hotels were ordered to operate at reduced capacity during Covid? The rooms that a hotel cannot sell are not included in the number of available rooms. A higher occupancy rate and higher ADR have resulted in higher RevPAR.
- The number of available rooms in example 5 has increased. Revenues have increased more. Therefore, RevPAR is higher. The effect of a lower occupancy rate was negated by a higher ADR.

In simple terms, ADR and occupancy rate positively impact RevPAR.

Note that RevPar will usually be lower than ADR because the occupancy rate is generally less than 100%. The number of rooms available will be more than the number of rooms sold.

The ratio of room revenue to other sources – Hotels charge their customers for the multiple services and experiences they offer. Restaurants, spas, salons, laundry, cabs, etc, are all sources of revenue on top of room revenues. A higher share of revenue from other sources indicates that customers like and are willing to spend on other services and experiences.

In dull seasons, a hotel may offer big discounts to attract customers. The idea is to earn revenues by getting them to spend on other services and experiences.

EBITDA – EBITDA is Earnings Before Interest, Tax, Depreciation, and Amortization. We have learned this is Fundamental Analysis. So why am I discussing this here?

We know that hotel companies use various combinations of portfolio ownership. Some properties are owned, and some are leased, managed, or franchised. A company having mostly owned/leased properties will tend to have a higher asset base and, hence, a higher depreciation charge on the P&L. A company using borrowed funds to acquire or develop properties will tend to have a higher interest charge on the P&L.

Let's look at these two hypothetical companies, A and B.

	Company A	Company B
ADR	6,000	6,000
Revenues	50,000,000	50,000,000
Operating Expenses	20,000,000	20,000,000
EBITDA	30,000,000	30,000,000
Interest Expense	5,000,000	0
Depreciation	5,000,000	0
Total Expenses	30,000,000	20,000,000
Profit Before Tax (PBT)	20,000,000	30,000,000
Tax Expenses (25%)	5,000,000	7,500,000
Profit After Tax (PAT)	15,000,000	22,500,000

While both A and B have the same level of revenues and expenses, B has higher profits because it does not own the properties. A's profits are lower because it has taken loans to own properties.

This is a very simplistic example. B could have higher operating expenses due to the rent it would pay to acquire the property. It could also have a revenue-sharing arrangement with the property owner.

The point here is to establish an apple-to-apple comparison between peers and not just to compare their reported profits.

13.3 – Concluding remarks

Many moving parts work in tandem to deliver service in the hotel industry. Experiences are crucial but difficult to quantify.

Differentiated services improve brand strength. Brand strength improves KPIs. Strong KPIs should ideally lead to robust financial performance. This is where management acumen becomes important. As someone studying the industry, your ability to identify quality management will set your analysis apart.

Key Takeaways

- A hotel company's network and capacity can be ascertained by the number of properties and keys.
- Its ability to sell rooms is determined by occupancy rates.
- Higher ADRs suggest higher pricing power.
- A higher RevPAR could be an outcome of an improved occupancy rate or ADR.
- Apart from rooms, hotels also make revenues from restaurants and other services.
- EBITDA is an important tool in comparing hotel companies with different asset-ownership models.

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14. Retail (Part 1)

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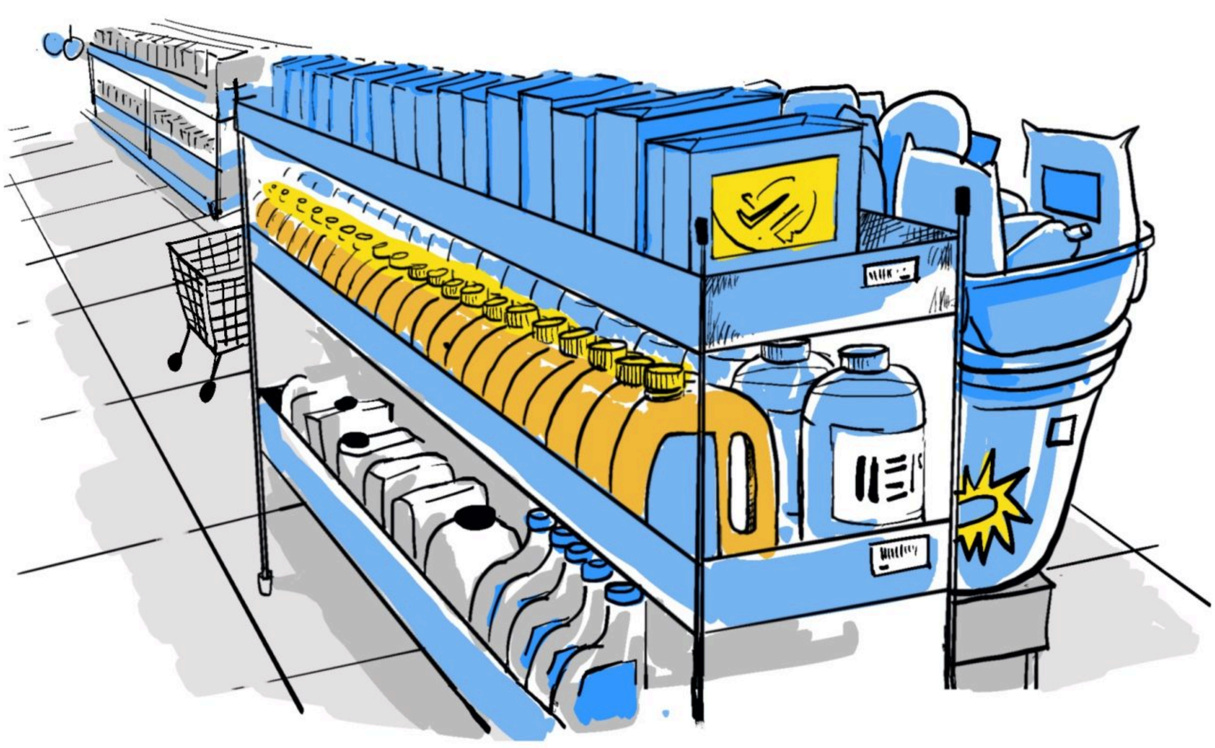
14.1 Before we begin

I must apologize for the long delay between this chapter and the previous one. I was occupied with other projects. I know some of you have been waiting for far too long for me to write this chapter. So, let's begin. 🙂

Try recalling the last time you were buying groceries at a supermarket.

- Where were items like rice, wheat, and oil kept?
- Where were instant noodles, sauces, biscuits, shampoos, and soaps displayed?
- And lastly, did you pick a chocolate or two? From where did you pick it?



From what I have observed at most supermarkets,

- Groceries like rice, wheat, cereals, and oil are kept in a far corner.
- Noodles, sauces, biscuits, shampoos, and soaps are placed on the shelves in the middle lanes.
- Chocolates are usually placed near the billing counter.

Is there any reason behind this? Is this some strategy by retailers? Let's explore the retail sector!

14.2 Introduction

Retail is a vast sector. When we buy something for personal or domestic use, it is usually through a retailer. Groceries, clothes, shoes, medicines, furniture, jewelry, toys, cars, and bikes are all sold through retailers. All these products are produced by businesses in different sectors but sold by retailers. Even a fuel pump is a retail store. Cafes and restaurants constitute the retail sector, too.

Strange that we have our first conclusion in the introduction, but it is that when you analyze a company in the retail sector, make sure you compare it with a business in the same retail category. You may compare an apparel retailer with another apparel retailer, not with a chemist. In fact, comparing a value apparel retailer with a luxury apparel retailer may not help.

There is more – there are multi-brand outlets and single-brand outlets. Shoppers Stop, Reliance Trends, and Pantaloons are examples of multi-brand apparel retailers. Louis Philippe, Allen Solly, Jockey, Nike, and Puma have single-brand outlets. You will find these brands in multi-brand stores, too.

E-commerce has given rise to many digital retailers. Amazon, Flipkart, and Nykaa are multi-brand digital retailers. Boat, Mama Earth, and The Souled Store started as single-brand digital retailers. We call them Direct-to-Consumer (D2C) brands. They sell through Amazon and Flipkart as well. Now, they also sell in physical stores.

E-commerce also gave rise to quick-commerce retailers like Blinkit, Zepto, and Instamart. These retailers take pride in 10-minute deliveries. They may not have a vast variety of products like Amazon or D-mart, but they have all the essentials and more products that you might need urgently. Quick-commerce is mainly available in large cities.

Physical retail stores can be traditional or modern-format. The grocery store in your neighborhood is a traditional retail store. Dmart and Reliance Mart are modern-format retail stores. Almost every modern retailer now has a digital presence. Traditional stores have digital visibility by selling on Jio Mart. Local electronics stores also sell digitally through Amazon and Flipkart.

A large part of the retail sector is unorganized. The local jewellery or apparel stores, shoe shops, and salons in your town or city are part of the unorganized sector. Chain stores such as Tanishq, Kalyan Jewellers, Bata, Jawed Habib, and Lakme Salon constitute the organized sector.

14.3 The retail sector in India – some numbers

A joint report by Boston Consulting Group (BCG) and Retailers Association of India (RAI) estimates India's retail sector to grow ~10% every year to reach a total market size of $2 trillion by 2032.

The average Indian consumer still spends almost 50% on essential items such as food and groceries. India has over 1.3 Cr grocery retail stores and 90% of those are traditional stores. While modern-format stores can offer a much wider variety and range of products, traditional stores offer neighborhood convenience. Traditional stores also offer credit facilities, which modern retail stores simply cannot.

India has the third-largest pool of e-retail shoppers. Although online retail makes up less than 10% of total retail sales in India, it is expected to constitute over 15% by 2030. If you live in a city, you might think 10% is a very small number. If you live in small towns or villages, the same 10% miight look too big to you.

When I first saw the figure, I thought 10% was a very small number. But then I looked around my apartment and noticed all the things I bought online or offline. There are still a lot of things we buy offline.

Now, let's get to exploring how to analyse a retail company.

14.4 What to look for in a retail company?

Retail companies have different approaches to:

- Where and how they want to be visible
- How they sell their products
- How they display their products
- Design the shopper's experience both online and offline. Some have even tried to integrate the two modes

Therefore, when you are studying a retail business, check its strategies with respect to the following.

14.4.1 Merchandising:

Merchandising is mostly a qualitative term and not a quantitative term. It involves any activity meant to present or place products in a manner that influences the buying behavior of shoppers.

The placement of groceries, packaged food items, and chocolates that I discussed at the beginning of this chapter is a merchandising activity.

The supermarket operator knows that rice and wheat are essential items. You mostly don’t buy rice and wheat at a whim. These are mostly planned purchases. You will buy them if you have planned to buy them even if they are placed in the far corner of the store. The retailer hopes that you will notice all other products placed before the essentials and remind you of other products you might need but didn’t remember or even tempt you into buying stuff you do not need.

Chocolates are mostly unplanned purchases. You buy them on an impulse. If you are waiting in a queue at the billing counter and spot some chocolates placed next to the queue, you will likely buy some. Better still, if you have gone with a kid, the kid will ask for the chocolate. Even if you want to discourage your kids from eating chocolate, it becomes difficult when you are stuck in a queue with a crying kid.

Items like instant noodles, sauces, biscuits, shampoos, and soaps are primarily sold in branded packaging. There are multiple brands for each product. And each product comes in various flavors, types, and tastes. You would usually have a specific preference for the brand of shampoo or instant noodles you want to buy.

You will observe that the popular or most-liked brands may be placed not at eye level but on the lower or higher shelves. The retailer knows that popular brands will be sold even if they are not optimally displayed. Therefore, in order to add visibility, the not-so-popular or new brands are placed at the eye level on the shelves.

An average grocery retailer usually sells milk, a perishable and very thin-margin product. The absolute profit on milk is so low that even large quantities do not make much of a difference. So why do they sell milk?

Milk is an essential item, and people like to buy it fresh every day. Every time a shopper walks in to buy milk, the retailer has the chance to interest them into buying other, higher-margin products. The logic here is the same as placing essential groceries in the far corner of the store. The shopper might themselves remember items they need when they see them on the shelves. Not selling milk means missing out on the opportunity to sell other products.

Retailers sell biscuits, shampoos, matchboxes, and chocolates in thin-margin packets worth INR 1, 5, or 10 on the same principle. These are called loss-leader products. They may bring absolute losses but attract profitable customers.

Ever seen a local supermarket offering potatoes at INR 2 per kilo, or sugar at INR 5 per kilo? Such offers are limited by conditions such as a minimum purchase of INR 1500. The retailer will basically sell the potatoes or sugar at a loss to attract customers to buy other products. These are loss-leader strategies.

Merchandising assumes a more complex position in e-commerce. When you open Amazon or Myntra or any other shopping app, what products you see on the home screen and how they are placed on the home screen are all a function of merchandising.

A vendor might also pay these e-commerce platforms to appear higher on search results.

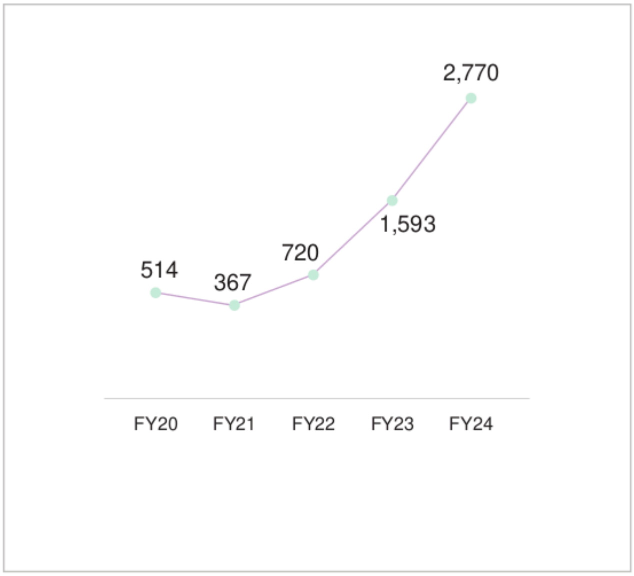
14.4.2 Shrinkage:

Shrinkage suggests loss of inventory. It occurs whenever inventory declines without a corresponding increase in revenues. Accidents, shoplifting, or reporting errors could cause inventory to decline.

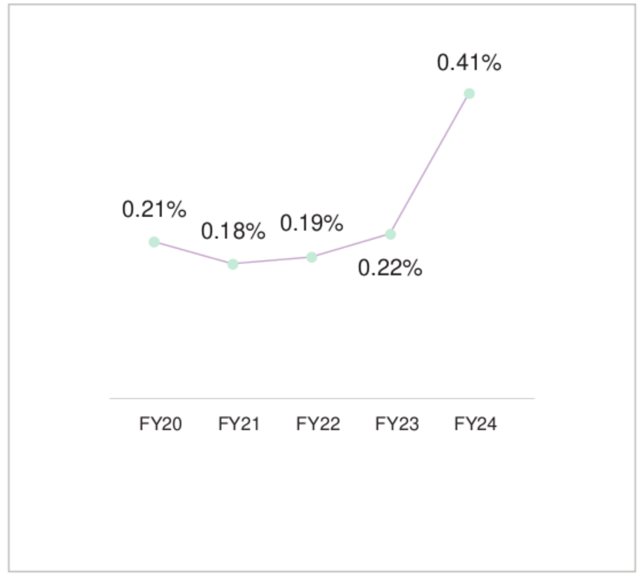
Retailers don’t seem to have a standard way of reporting shrinkage, but you can still look at each retailer’s shrinkage numbers over the years. It could be reported as a percentage of revenues or in absolute numbers. You can see how this percentage or absolute number has moved over the years. A declining shrinkage figure is always good. It suggests better control over operations and security.

This is how Trent reported the shrinkage of its fashion and lifestyle retail business in FY24.

Volume sold (Lakhs)



Shrinkage (% to sales)[3]



1 Includes all fashion and lifestyle concepts (Westside, Zudio, Utsa, Samoh and Misbu)

14.4.3 Private Labels:

Have you seen some brands that you will find exclusively at Reliance Smart, Vijay Sales, or amazon.com?

- Reliance Smart has some in-house brands for tea, coffee, ketchup, cosmetics, etc.
- Vijay Sales' in-house electronics brand, Vise, sells TVs, refrigerators, washing machines, etc.
- Amazon sells groceries under its Vedaka brand and furniture and household items under its Solimo brand.

From being just a retail company, Reliance Smart and Amazon have dabbled into becoming an FMCG company. Vijay Sales has become an electronics maker apart from an electronics retailer. The brands that these retailers own are called private labels.

Is there any motivation behind having private labels?

You will see that most private labels have packaging very similar to that of a popular competitor and maintain prices below those of their competitors. Their instant noodles pack will perhaps be comparable to and cheaper than Nestle Maggi's pack. Or they might have chocolates that look very similar to Cadbury's. Private label goods don't spend on marketing. They just piggyback on the marketing efforts of the leading brands.

So, they do not have to spend on branding and distribution, and there is no intermediary, either. Effectively, retailers can sell their private labels at slightly lower prices and much larger margins.

It is a different discussion that only some retailers have been successful with their private labels. When you are studying a retail company, check out its presentations and annual reports to see if it has private labels. Next, determine how much private labels contribute to total revenues and profits. If their contribution is substantial, it is worth analyzing further.

14.4.4 Business Model

While KPI numbers tell you a lot, you must also study what differentiates a retail business from its peers. They may have different target markets or ways of communicating with current and potential customers. Some might cut costs, while others might use premium pricing to achieve profitability.

Some retail stores, such as Shoppers Stop and Reliance Mart, use loyalty points to draw repeat customers. Others, like D-Mart, offer discount pricing. Some focus on markets—V-Mart mainly operates in tier-2 and tier-3 towns. The Collective, a chain of multi-brand luxury stores, mainly operates in tier-1 cities.

As someone studying this sector, you might want to understand the macro trends in the sector. Historically, a premium retailer might have higher profits, but better monsoons and an agricultural harvest last season could indicate higher volumes at a discount retailer in a tier-3 town.

Reading the Management Discussion & Analysis section of a retail business's annual report could give you insights into its target market and business approach.

We will next look at the Key Performance Indicators (KPIs) of retail businesses. However, for the sake of brevity, I will discuss them in the next chapter. See you. 🙂

Key Takeaways

- Retail is a vast sector. There are modern-format retail stores and neighborhood convenience stores, as well as multi-brand retailers and single-brand retailers. Retail stores can be physical and online. Fuel pumps, salons, and cafes are also retail stores.
- When studying the retail sector, compare only grocery stores with grocery stores or jewellery retailers with jewellery retailers.
- While India is the third largest market for online retail, offline retail still forms a significant majority of the market.
- Merchandising is a critical function for any retailer. It involves any activity meant to present or place products in a manner that influences the buying behavior of shoppers.
- Shrinkage occurs whenever inventory declines without a corresponding increase in revenues. Accidents, shoplifting, or reporting errors could cause inventory to decline.
- Many retailers sell private-label goods to piggyback on the marketing efforts of the leading brands.
- Retailers within a sector could have different business models. Some grow by focusing on geographies, while others grow by focusing on a particular type of customers.

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13 comments

1. *Gerald Pullan* says:
   October 29, 2025 at 9:11 am

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15.1 A story

Legend has it that beer and diaper sales go up on Friday nights in the US. Wait what?

Apparently, a retail company ran some data analytics on its sales data and found this correlation between the sales of beers and diapers. Parents did not buy many diapers throughout the week because the babysitters would take care of their kids. They would only spend the weekend with their kids, which is when they had to buy diapers. And they needed beers for themselves because it was a weekend.

They say that the retailer, upon finding this correlation, placed diapers and beers next to each other, and sales of both items went up. Others argued that both items should have been placed far apart. A shopper would buy both items no matter what. You might as well make them pass through other shelves between beers and diapers to lure them into buying other products.

Anyway, I am sharing this story because I found it interesting when I first heard it in my retail sector class, which was my minor in post-graduation. 🙂

Let's pick where we left the Part-1 of this sector and start discussing the Key Performance Indicators (KPIs) of a retail business.

15.2 Key Performance Indicators for the companies in the retail sector

The efficiency of a retail business is commonly judged at a per-square-foot level. This is because:

- Retail stores offer several products in multiple categories and sizes.
- The price points of the products also vary considerably. A ₹1 chocolate with a 50% margin may not be as important to a retailer as a ₹500 chocolate with a 20% margin.
- Two retailers offering the same products through similar stores might see a difference in revenues and profits simply because one of them uses the available space more optimally than the other.

Having said that, there are several other key performance indicators (KPIs), too.

15.2.1 Average Daily Footfall: It is the average number of people visiting a store in a day. A higher footfall could suggest that people are interested in what the store offers.

If you were looking at a digital store, average daily visitors could be considered an equivalent of footfalls. Since checking something online is easier, web stores might see a much higher number of average daily visitors.

15.2.2 Average Conversion Rate: This is expressed as a percentage of the average daily footfall. If a store sees an average footfall of 1000 people, and 750 people actually buy something from the store, it has a 75% conversion rate.

Grocery stores are likely to have a higher conversion rate than apparel stores because of the very nature of their products. If you want to buy rice and dal, you won't go looking for them in five different stores; you will mostly buy them from the store you are visiting. But if you want to buy clothes, you might visit five stores before buying from one.

The website conversion rate can be lower as people might visit the web store multiple times before buying.

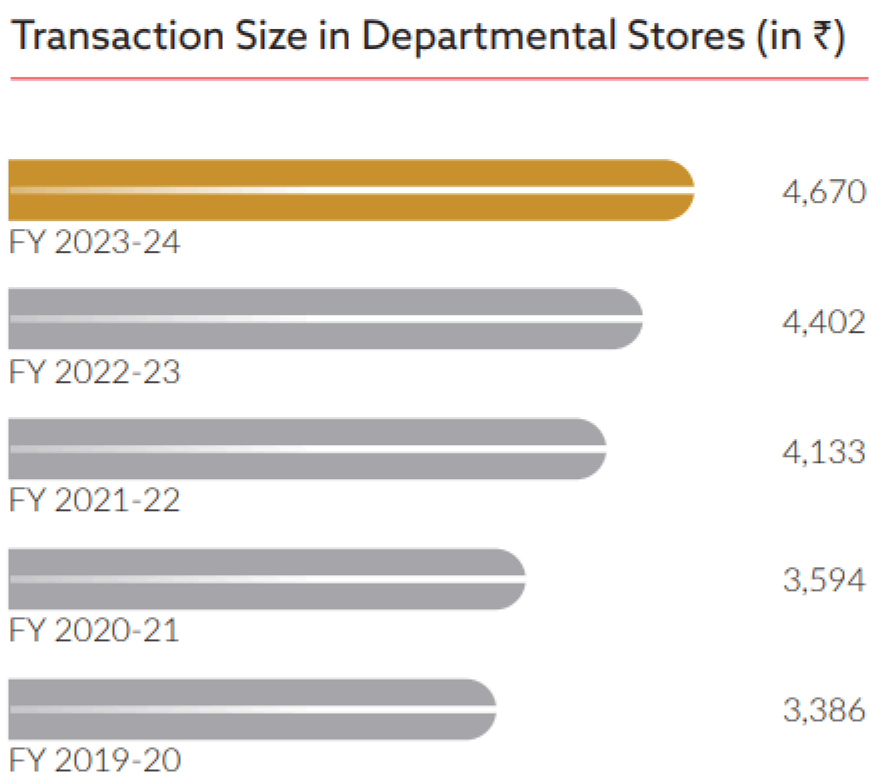
15.2.3 Average Bill Value: Let's say a store sold goods worth ₹1.5 lakh in a day. In total, 750 people bought from the store that day, or the store issued 750 receipts that day. So, the store has an average bill value of ₹200 for the day (150,000/750).

A store with a high conversion rate but low average bill value could be selling low-priced products or attracting customers who can afford to buy smaller packs or pay smaller sums.

A consistently increasing average bill value suggests that customers are spending more in the store.

If you are analyzing a retailer, you could compare the GDP per capita growth with the average bill value growth. If the ABV is growing at a rate similar to the GDP's, perhaps the business' economics have not improved. It is just keeping up with the economy's level. A faster growth in ABV could suggest that the store is offering a better variety of products, running offers or the general spending power of its customers is rising.

This is how Shoppers Stop has reported average bill value or transaction size in its FY24 annual report.



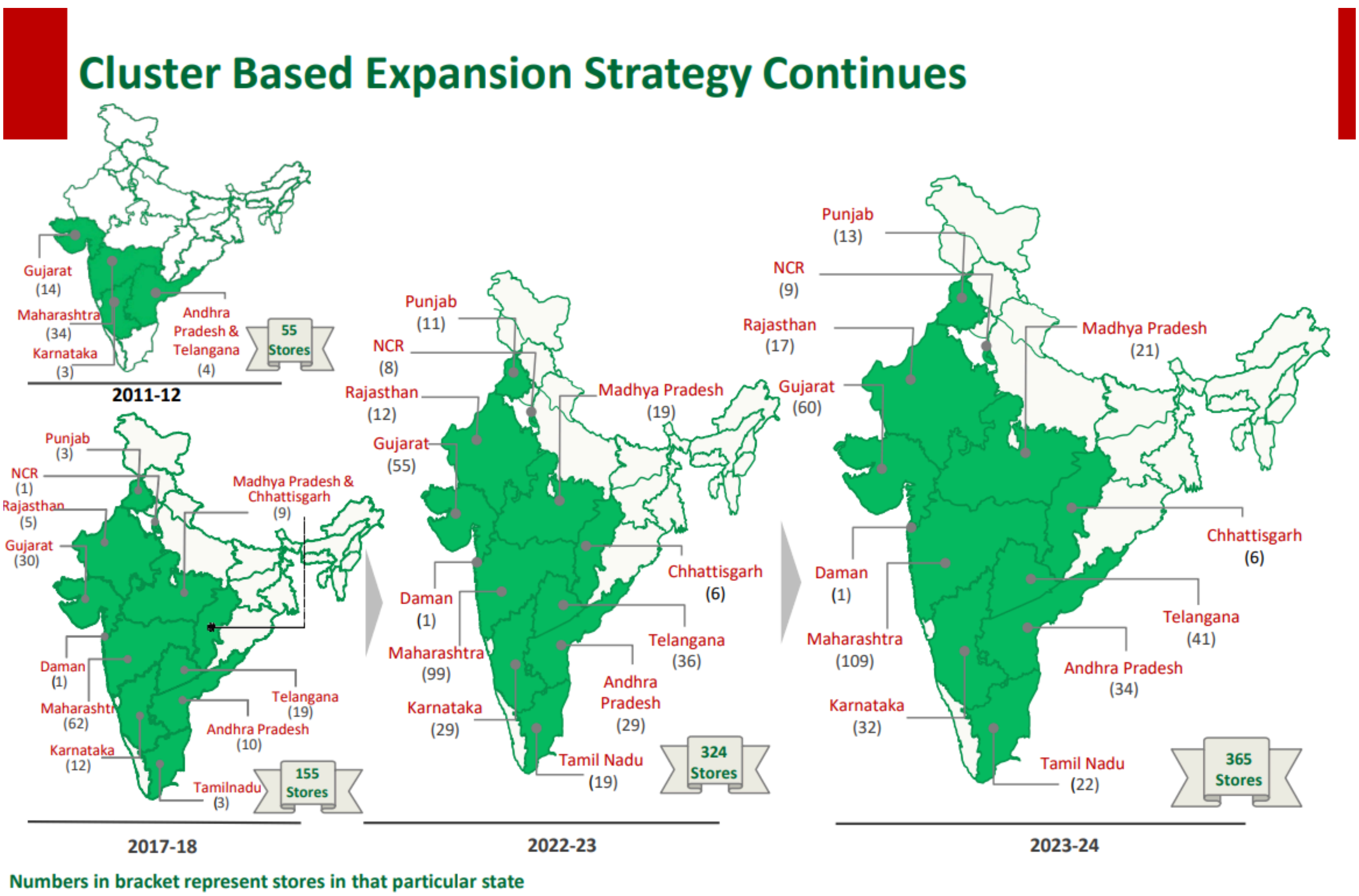
15.2.4 SKUs: It covers the width and depth of a retailer's product portfolio. The product range is wide if it includes everything from shampoos and soaps to groceries, clothes, and furniture. Width represents the variety of products. Depth is the number of options available for a particular product. For example, a retailer sells shampoos of 10 different brands, each with five flavors, each in 5 sizes. So, the retailer has 250 (10*5*5) unique packs of shampoos. It could have an inventory of 10 units of each pack. That’s a total of 2500 (250*5) SKUs of shampoos alone.

15.2.5 Number of stores: More stores can cater to a larger market and increase sales. Adding more stores is useful if profitability or the path to profitability is visible. One also needs the capital to set up new stores.

Each retailer could have a different strategy for growing their stores. Dmart started its stores in Mumbai, then in neighboring cities and towns, then in neighboring states. Starbucks began its outlets in the metro cities before going to tier-2 and tier-3 cities. This depends on the type and nature of the products a retailer is selling.

The product portfolio can also influence the number of stores. Consider this example. Shoppers Stop stores house multiple brands and cater to all kinds of clothing needs under one roof. So it has large but fewer stores. Van Heusen stores sell a single brand and cater to a few clothing needs. So they have small but many stores. In a metro city, you could have 8-10 Shoppers Stop outlets but 25 Van Huesen outlets. Smaller cities might have just one Shoppers Stop and perhaps 3-4 Van Huesen stores.

Look at this snapshot, which shows D-mart’s comprehensive approach to showing store counts. It also shows the cluster approach that they have used to expand their footprint over the years. They initially started with Maharashtra, then moved to its neighboring states, and then further.



15.2.6 Same-store sales growth: At the organization level, sales growth can be on account of sales at new stores and sales growth at existing stores (same-store sales growth).

Same-store sales growth is tracked also to see if new store sales are adding to overall sales or just compensating for a decline in the existing stores' sales.

Let's understand with an example. Assume that a retailer company registered a 20% sales growth.

- If same-store sales grew 10%, the other 10% came from new stores
- If same-store sales declined 10%, sales from new stores compensated for the decline in existing store sales and also added to it
- If same-store sales grew 25%, the company may have shut some old stores, which would have led to a smaller number of company-level sales growth.

Look at this snapshot of Titan's Q4 presentation. Like-to-like sales growth represents same-store sales growth.

Retail Sales (Secondary UCP) Growth

Q4FY24	TANISHQ	CARATLANE	TITAN WORLD	fastrack	HELIOS	Watches LFS	TITAN EYE+
Total	19%	31%	12%	6%	30%	4%	4%
Like-to-Like	14%	3%	7%	(4)%	14%	(8)%	0%

FY24	TANISHQ	CARATLANE	TITAN WORLD	fastrack	HELIOS	Watches LFS	TITAN EYE+
Total	20%	39%	9%	0%	36%	16%	6%
Like-to-Like	15%	6%	5%	(6)%	18%	6%	0%

Note:
1. *Retail UCP (Uniform Consumer Price) growth captures secondary sales in Titan branded retail stores (including franchisees) and Large Format Stores; Whereas the reported revenue (net of discounts, payouts & GST) comprises of secondary sales to consumers in L1 and L2 stores and primary sales to L3 stores, distribution partners and institutional clients*
2. *All growth numbers referred to are of Titan's domestic retail business*

15.2.7 Revenue per square foot: Whether purchased outright or taken on rent, a retail store is a fixed cost for the company. Let's say a store's monthly rent is ₹1 lakh. This rent usually won't change whether its revenues are ₹5 lakhs or ₹10 lakhs. But naturally, the company is more efficient at ₹10 lakhs in revenues than at ₹5 lakhs.

However, every store size is different, and the rent paid is different. Therefore, you look at the per-square-foot matrix. That way, you can compare two stores of different sizes equitably.

How do you calculate a store's revenue per square foot? Divide a store's total revenue by its total square foot area. At the company level, you calculate it by dividing the total revenues by the total collective square footage of all its stores.

Since e-commerce is becoming an increasingly crucial part of a retail business, revenue per square foot should ideally be total revenues divided by the total square footage of its retail stores and warehouses.

Adding retail stores and warehouses in this calculation is necessary because retailers could service e-commerce orders from their stores as well as warehouses. Do note that the warehouse area information is not easily available for all retail companies.

Growth in per-square-foot sales suggests improving sales efficiency. This could come from higher sales volume or a larger share of higher-priced products in the overall sales.

15.2.8 Net profit per square foot: You calculate net profit per square foot by dividing the total net profit by the total square foot area of the stores and warehouses.

If net profit per square foot is rising faster than revenue per square foot, you could say that costs are coming down. This could be because inputs are generally cheaper or because the management has figured out ways of controlling costs. A lower tax rate could also increase net profit per square foot faster than revenue per square foot.

15.2.9 EBITDA per square foot: Wonder why we need to look at EBITDA per square foot when we have already explored revenue and net profit per square foot? We know EBITDA enables easier comparisons between two companies with different asset and capital structures.

Look at the table below. It compares two retailers, A and B. Assume they have the same square footage. A has a higher EBITDA per square foot than B but a lower net profit per square foot. Perhaps A has more owned stores, leading to a higher depreciation. And B has more rented stores, leading to a higher rent expense. Moreover, A's higher interest expense suggests it borrowed funds to acquire assets.

	A	B
Revenues	1000	1000
Cost of Goods Sold	400	400
Rent	50	100
Admin, Selling, & General Expenses	100	100
EBITDA	450	400
Depreciation	200	50
Interest expense	100	50
Profit before tax	150	300
Tax @20%	30	60
Profit after tax	120	240
**All figures are on a per square foot basis.*		

While the core business operations of both retailers are quite similar, their profitability differs due to their different asset bases and capital structures.

In fact, if you talk to a store manager at a supermarket near you, they will probably tell you that achieving positive store-level EBITDA is the key performance metric for their job. EBITDA profitability indicates cash profits. Non-cash expenses may still not be covered, but a store manager cannot be held responsible for the depreciation charge on the store purchased by the company. Even the rent expense is not in their control. But it is a cash expense, so they have to manage it.

Once EBITDA profitability is achieved, scaling up the business can lead to net profitability. Also, EBITDA profitability gives room to pay for administrative and marketing expenses at the corporate level.

15.2.10 Inventory turnover:

This ratio is useful for any sector or business that sells goods. However, it gives some additional insights into the retail sector.

First things first, the inventory turnover ratio has two formulae:

1. Total Sales / Average Inventory
2. Cost of Goods Sold / Average Inventory

I prefer to use the second one because the first one can seriously distort the ratio depending on the pricing power a business commands. You may choose to use either or both.

Inventory turnover is a useful metric when comparing different companies within a sector or industry. In the retail sector, you could compare the inventory turnover of Titan Industries with Kalyan Jewellers or of Reliance Retail with Trent.

Grocery retailers will have a higher inventory turnover as they mostly sell perishable, fast-moving goods. And by the same logic, an electronics or jewellery retailer will have a slower inventory turnover.

A grocery retailer having a low inventory turnover could suggest that:

- It does not have the right product mix – more capital is stuck in the not-so-fast-selling products
- It is unable to sell its goods maybe because it is inconveniently located or lacks quality, or does not have adequate options for shoppers
- It is maintaining a much larger inventory than it needs to maintain, leading to inefficient capital allocation

15.3 Comparing the KPIs of some retailers

Of all the KPIs I mentioned above, not all will be reported by a company. Perhaps it does not make sense for an apparel retailer to report SKUs. Apparels entail fashion. Fashion is non-standard and constantly evolving.

Anyway, I have tried to compile some standard information that all retail companies report. Here goes.

	D-Mart	Shoppers Stop	Titan	Trent Ltd
Retail business area (mn sqft)	15.1	4.3	4.1	10.0
Number of stores	365	249	3,035	875
New stores added in FY24	41	55	325	275
Sales per sq. ft	33,635	10,039	113,449	12,375
EBITDA per sq. ft	2,815	1,797	14,070	2,211
Net profit per sq. ft.	1,679	180	8,444	394
Inventory Turnover	12.1	1.9	2.0	4.7
Sales per sq.ft. is operating revenues divided by retail business area. These numbers differ from those reported by the respective companies.				

If you examine the numbers above closely, it is natural for D-mart to have more retail business areas because it sells a much wider range of goods. Jewellery, eyewear, and watches perhaps explain Titan's large number of stores.

D-mart's high inventory turnover is on account of its grocery-focused operations, although it also sells kitchen appliances and other consumer durable goods. A consumer does a lot of thinking, planning, research, and trials before buying clothes or jewellery. That's why Shoppers Stop, and Titan have a low inventory turnover. Trent's Star Bazaar competes with D-mart and its Westside and Zudio compete with Shoppers Stop, and hence, has an inventory turnover ratio somewhere in the middle.

I usually mark the business showing the biggest or strongest numbers in tables like this. But I refrained this time because Titan outperforms the others specifically on these metrics. Titan sells jewellery and watches, which are large-ticket or high-value products. But if you compare its profit margins with the rest, they are all at a comparable level. It is for this reason that you should:

1. Always compare retail businesses within their categories – a jewellery business with another jewellery business and a grocery business with another grocery business.
2. Complement sector analysis with fundamental analysis – net margins, inventory turnover, ROE, etc are indispensable.

Now, that is a wrap for the retail sector.

I will next cover the FMCG sector, which draws many parallels with retail. Stay tuned. 🙂

Key Takeaways

- The efficiency of a retail business is commonly judged at a per-square-foot level because retail stores offer several products in multiple categories and sizes in stores that again vary in size and layout. Scaling every metric to a per-square-foot level makes comparison easier.
- Revenue per square foot equitably compares the revenues of retailers of different scales. Net profit per square foot and EBITDA per square foot are profitability measures. A retail store manager's primary job is to achieve and maintain a positive EBITDA per square foot.
- Average daily footfall, average conversion rate, and average bill value are good measures to judge the kind of customer interest a store can attract.
- A Stock Keeping Unit or SKU represents a unique product specific to its size and variant.
- Retail businesses grow by growing the number of stores as well as the sales in the existing stores.
- The inventory turnover ratio gives insights into the speed of sales, types of products being sold, customer behavior, a retailer's capital management efforts.

← Previous Chapters

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28 comments

1. *Reethesh* says:
   November 1, 2025 at 7:21 pm

   when will you resume articles on more sectors. we are waiting from a long time