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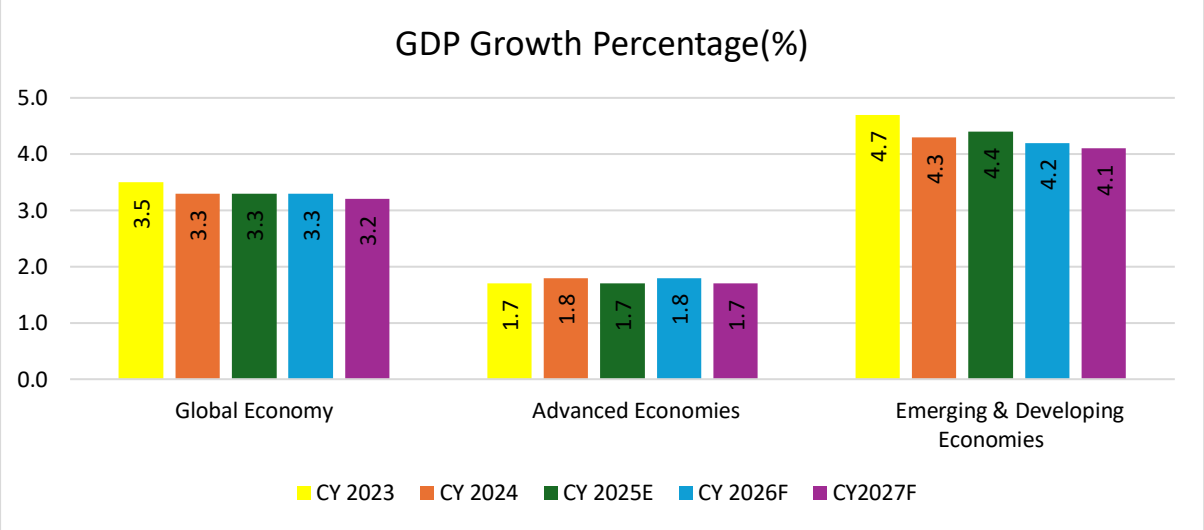
1. Global Economic Outlook

As per the IMF's World Economic Outlook (WEO) published in January 2026, global growth is projected to remain resilient at 3.3 percent in 2026 and at 3.2 percent in 2027.

Global headline inflation is expected to decline from an estimated 4.1 percent in 2025 to 3.8 percent in 2026 and further to 3.4 percent in 2027. The inflation projections are also broadly unchanged from those in October and envisage inflation returning to target more gradually in the United States than in other large economies.



Note: E = Estimates, F = Forecast

Source: IMF World Economic Outlook January 2026

Note: Advanced Economies and Emerging & Developing Economies are as per the classification of the World Economic Outlook (WEO). This classification is not based on strict criteria, economic or otherwise, and it has evolved over time. It comprises of 40 countries under the Advanced Economies including the G7 (the United States, Japan, Germany, France, Italy, the United Kingdom, and Canada) and selected countries from the Euro Zone (Germany, Italy, France etc.). The group of emerging market and developing economies (156) includes all those that are not classified as Advanced Economies (India, China, Brazil, Malaysia etc.)

Growth in advanced economies is projected to be 1.8 percent in 2026 and 1.7 percent in 2027. In the United States, the economy is projected to expand by 2.4 percent in 2026, supported by fiscal policy and a lower policy rate, while the impact of higher trade barriers also gradually wanes. This 0.3 percentage point upward revision from the October forecast reflects a stronger-than expected GDP outturn in the third quarter of 2025, a rebound in activity in the first quarter of 2026 compared with that in the fourth quarter of 2025 following the end of the federal government shutdown, and the associated carryover.

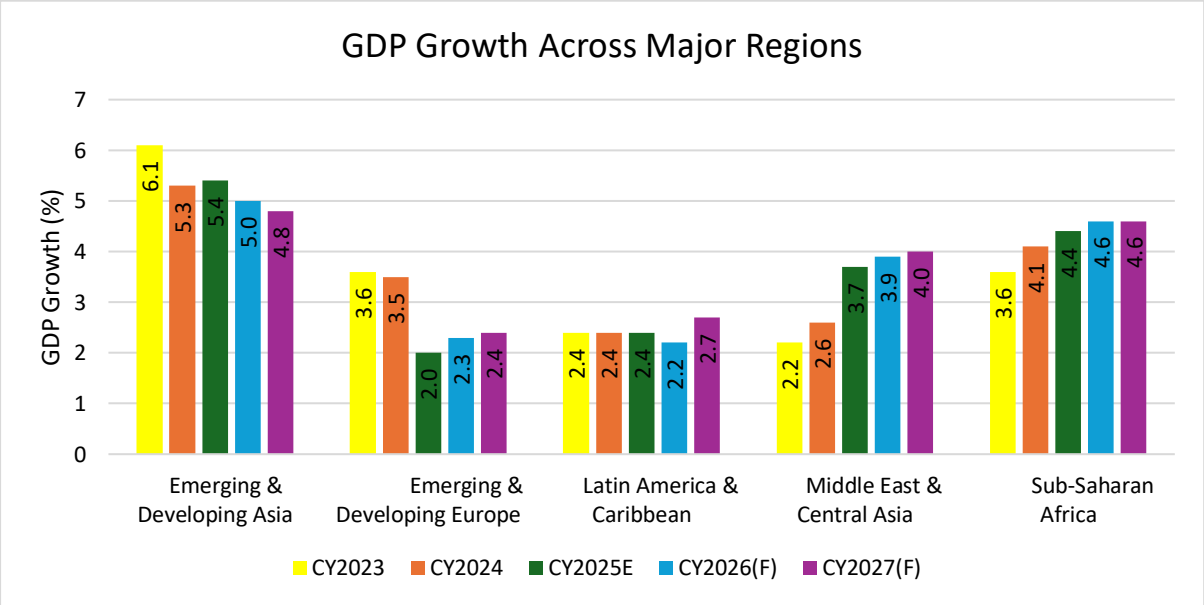
In emerging market and developing economies, growth is expected to continue to hover just above 4.0 percent in 2026 and 2027. Relative to the projection in October, growth in 2025 for China is revised upward by 0.2 percentage point to 5.0 percent. The revision reflects stimulus measures and additional policy bank lending for investment. Growth for 2026 is also revised upward by 0.3 percentage point to 4.5 percent, reflecting the lower US effective tariff rates on Chinese goods due to the yearlong trade truce agreed to in November and stimulus measures that are assumed to be implemented over two years. The economy's growth rate is expected to decelerate to 4.0 percent in 2027 as structural headwinds assert themselves.

In India, growth is revised upward by 0.7 percentage point to 7.3 percent for 2025, reflecting the better-than expected outturn in the third quarter of the year and strong momentum in the fourth quarter. Growth is projected to moderate to 6.4 percent in 2026 and 2027 as cyclical and temporary factors wane.

In the Middle East and Central Asia, growth is projected to accelerate from 3.7 percent in 2025 to 3.9 percent in 2026 and to 4.0 percent in 2027, supported by higher oil output, resilient local demand, and ongoing reforms. Growth is also expected to accelerate in sub-Saharan Africa, from 4.4 percent in 2025 to 4.6 percent in 2026 and 2027, supported by macroeconomic stabilization and reform efforts in key economies. In Latin America and the Caribbean, growth is projected to moderate to 2.2 percent in 2026 and bounce to 2.7 percent in 2027 as countries in the region approach potential from different cyclical positions. In emerging and developing Europe, a sharp slowdown in 2025 to a growth rate of 2.0 percent is expected to reverse, with economies in the region expanding at an average rate of 2.3 percent in 2026 and 2.4 percent in 2027. In most regions, the rebound also reflects the fading effect of shifting trade policies

1.1 GDP Growth Across Major Regions

GDP growth across major global regions—including Europe, Latin America & the Caribbean, Middle East & Central Asia, and Sub-Saharan Africa—continues to display varied trajectories. The global outlook presents a mixed scenario, with emerging economies continuing to outperform advanced economies.



Note: E = Estimates, F = Forecast

Source: IMF World Economic Outlook January 2026 update

In Emerging and Developing Asia, growth is projected to moderate from 5.4% in CY 2025 to 5.0% in CY 2026 and further projected at 4.8% during CY 2027. India's expected growth in 2025 has been uplifted at 7.3% in CY 2025, supported by resilient rural consumption and sustained infrastructure investments, up from 6.5% in CY2024. The growth estimate for 2026 and 2027 is kept at 6.4%. In contrast, China's growth is estimated at 5.0% in CY2025, and to further decelerate at 4.5% in 2026 and 4.0% in 2027.

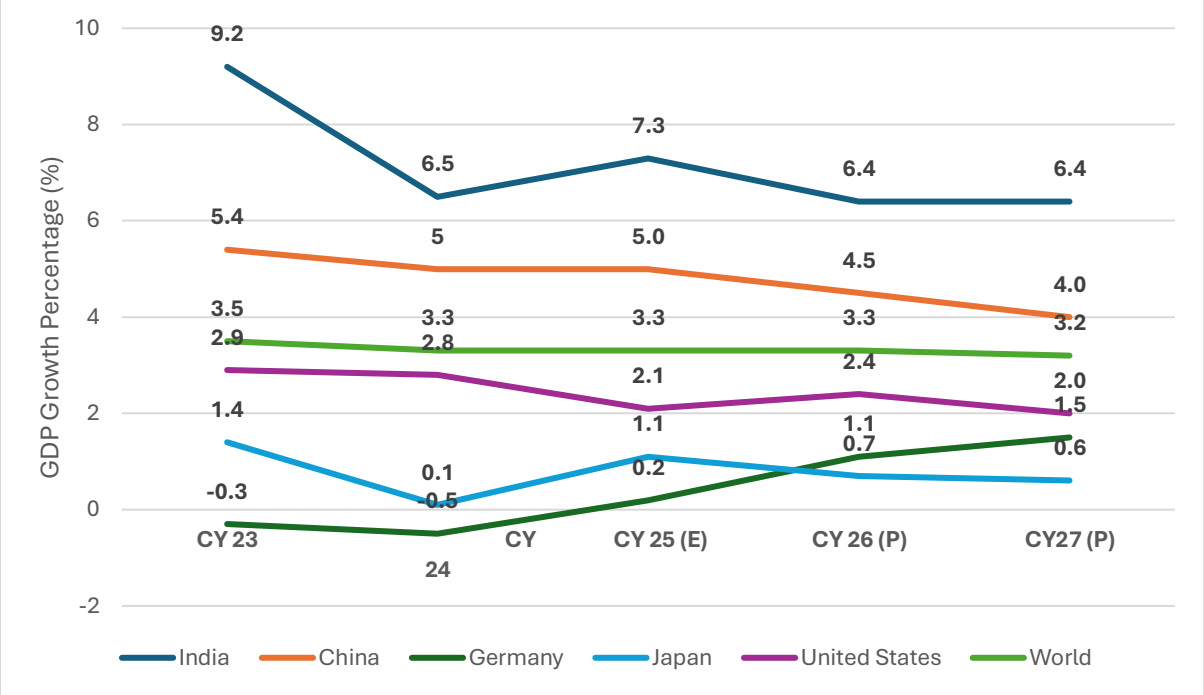
Sub-Saharan Africa is projected to grow at 4.4% in CY 2025, increased from 4.1% in CY 2024, with growth is expected to accelerate further at 4.6% in CY 2026. This gradual improvement is being supported by better weather conditions and more efficient supply chain operations.

In the Middle East and Central Asia, the economy is forecasted to expand from 3.7% in CY 2025 to 3.9% in CY 2026, and further at around 4.0% in CY 2027, driven by stabilization in oil production and ongoing economic reforms.

For Latin America and the Caribbean, the economy is expected to slow from 2.4% in CY 2025, to 2.2% in CY2026, but increase again at 2.7% in CY 2027 reflecting stable yet subdued economic momentum supported by stronger macroeconomic management across key economies.

Emerging and Developing Europe remains subdued, with growth estimated at 2.0% in CY 2025, down from 3.5% in CY 2024, expected to rise modestly to 2.3% in CY 2026 and further at 2.4% in 2027. However, the recent Greenland issue and tariff imposition by the US President has posed fresh challenges for the region. The region continues to face structural manufacturing challenges, particularly in major economies like Germany.

India and Top 4 Global Economies GDP Growth Forecast



Note: E = Estimates, P = Projections

Source: IMF World Economic Outlook January 2026 update

Overall, while global growth is expected to remain steady at 3.3% in CY 2025~CY2026 and at 3.2% in CY2027, regional disparities persist, influenced by a combination of domestic challenges, external geopolitical tensions, and fluctuating commodity prices.

2. India's Macroeconomic Scenario

2.1 Gross Domestic Product (GDP)

Real GDP is estimated to grow by 7.4% in FY 2025–26, improving from a growth rate of 6.5% in FY 2024–25. This momentum is also evident on a quarterly basis, with real GDP recording a robust growth of 8.2% in Q2 of FY 2025–26 compared to the growth rate of 5.6% during Q2 of FY25, whereas nominal GDP has witnessed a growth rate of 8.7% in Q2 of FY 2025-26. *Source – MOSPI, Press release – First advance estimates of Gross domestic product posted on January 07th,2026.*

In its latest Economic Outlook, the OECD noted that India remains one of the fastest-growing major economies, supported by strong investment activity and resilient services. OECD highlighted that India's GDP is projected to grow by 6.7% in fiscal year 2025-26, 6.2% in 2026-27 and 6.4% in 2027-28. Despite some likely impact of the US tariff on Indian exports, private consumption will be supported by rising real incomes as inflation remains soft and low consumption/indirect taxes (GST). Going forward, investment will be sustained by declining borrowing costs and strong public capital expenditure. Current low headline inflation is projected to gradually converge towards the 4% target. Notably, India's Headline Inflation drops to 0.25 % in October 2025.

India's Economic Growth Momentum Remains Strong - Surpassed USD 4 Trillion.

In June 2025, India became the fourth-largest economy in the world and retained its position as the fastest-growing major economy. The country is projected to become the world's third largest economy by 2030, with an estimated GDP of USD 7.3 trillion.
Source: PIB, Press Release - India Becoming an Economic Powerhouse posted on June 16, 2025

India achieved a significant milestone by overtaking Japan to become the *third most powerful nation in the Asia-Pacific region*, as per the Asia Power Index 2024. India's overall score rose to 39.1, reflecting a 2.8-point increase from the previous year, driven by growing influence across economic, military, and diplomatic dimensions.
Source: PIB, Press Release - India becomes 3rd Most Powerful Nation in Asia, Surpasses Japan in Asia Power Index posted on September 24, 2024

Key factors behind India's rise include its strong economic performance, expanding and youthful workforce, and increasing strategic engagement across the region. India's Economic Capability improved significantly, supported by its position as the world's third-largest economy in terms of purchasing power parity (PPP). Additionally, a notable increase in its Future Resources score highlights the demographic advantage that is expected to sustain its growth trajectory in the coming years.

2.2 Gross Value Added (GVA)

According to the First Advance Estimate of GDP for 2025-26 by MOSPI, Govt. of India (GoI), Real GVA is estimated at INR 184.50 lakh crore in the FY 2025-26, against the Provisional Estimates (PE) for the FY 2024-25 of INR 171.87 lakh crore, registering a growth rate of 7.3%. Nominal GVA is estimated to attain a level of INR 323.48 lakh crore during FY 2025-26, against INR 300.22 lakh crore in FY 2024-25, showing a growth rate of 7.7%. (*MOSPI, Press Release, 7 January 2026*).

Major Highlights:

- Real GDP has been estimated to grow by 7.4% in FY 2025-26 against the growth rate of 6.5% during FY 2024-25.
- Nominal GDP is estimated to grow at 8.0% in FY 2025-26.
- Buoyant Growth in Services Sector has been found to be a major driver in the estimated Real GVA growth rate of 7.3% in FY 2025-26.
- Financial, Real Estate & Professional Services and Public Administration, Defence & Other Services in the Tertiary Sector have been estimated to attain a substantial growth rate of 9.9% at Constant Prices in FY 2025-26.
- Trade, Hotels, Transport, Communication & Services related to Broadcasting Sector has been estimated to grow by 7.5% at Constant Prices in FY 2025-26.
- Manufacturing and Construction in the Secondary Sector has been estimated to achieve a growth rate of 7.0% at Constant Prices in FY 2025-26.
- Agriculture & Allied Sector (3.1%) and Electricity, Gas, Water Supply & Other Utility Services Sector (2.1%) have seen moderate growth rate in GVA at Constant Prices during FY 2025-26.
- Real Private Final Consumption Expenditure (PFCE) has been estimated to attain a growth rate of 7.0% during FY 2025-26.

Source: MOSPI, Press Release, 7 January 2026, Govt. of India (GoI).

2.3 Consumer Price Index (CPI)

The GOI published on 12 Feb'26, the retail inflation data for January 2026 with the new base year of 2024, whereas the Headline inflation has increased for the month of January 2026 over January 2025 is 2.75%.

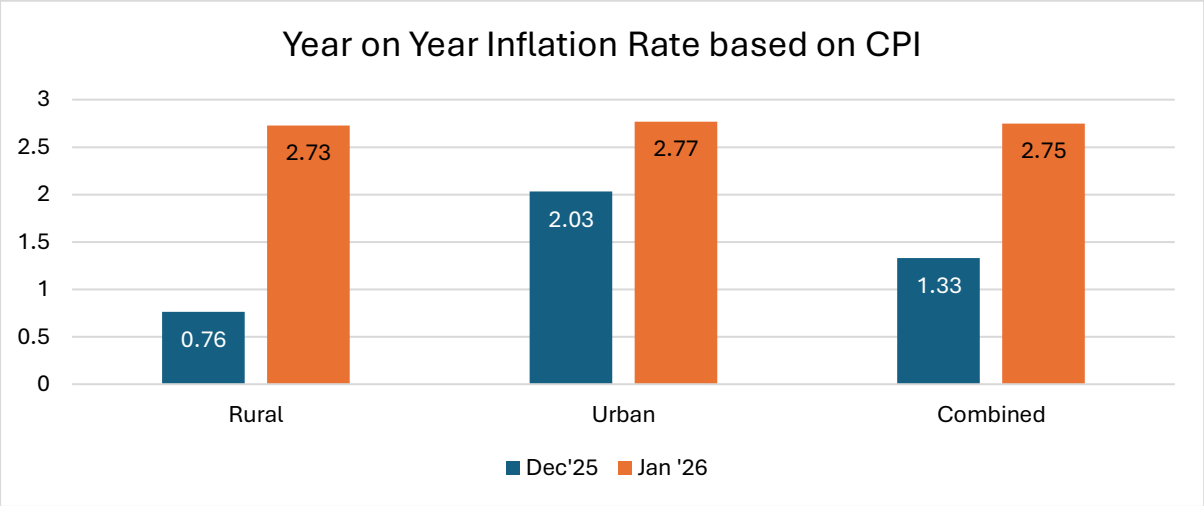
At the all-India level, the number of weighted items has increased from 299 to 358 in CPI 2024. Within this:

- Goods items are increased from 259 to 308
- Services items are increased from 40 to 50

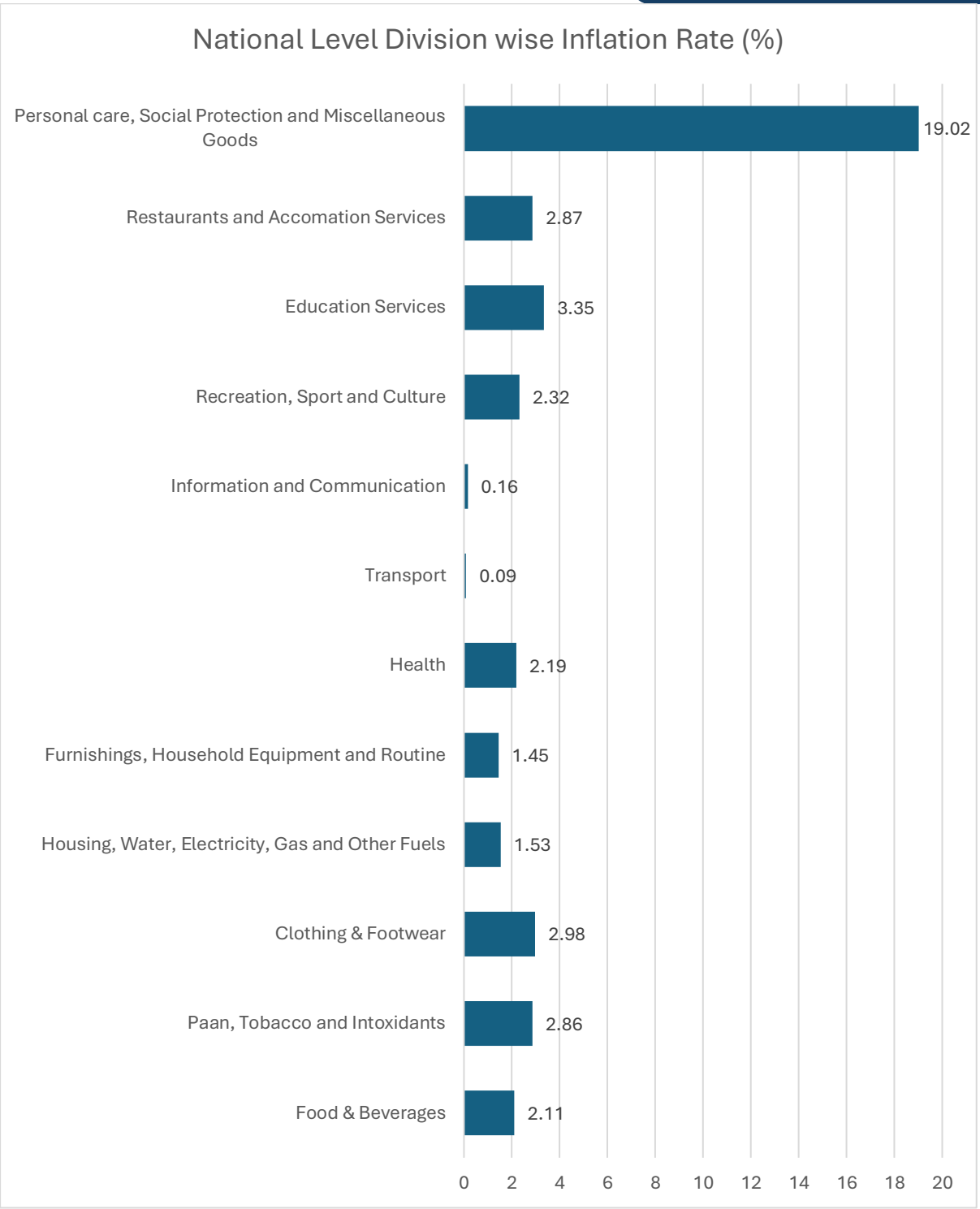
This expansion strengthens the representation of the services sector, which has assumed greater importance in household expenditure over time.

What's New:

a. Base revised from 2012 to 2024 using Household Consumption Expenditure Survey 2023-24.
b. 12 Divisions in place of 6 Groups in accordance to Classification of Individual Consumption According to Purpose (COICOP) 2018.
c. Release of All India and State level Item indices for rural, urban and combined sectors
d. New Additions: Rural housing, Online media service provider/Streaming services, value added dairy products, Barley & its product, Pen-drive & External Hard disk, Attendant, Babysitter and Exercise equipment.
e. Items Removed: VCR/VCD/DVD player and hiring charges, Radio, Tape recorder, Clothing second-hand, CD/DVD audio/video cassettes and Coir/rope.



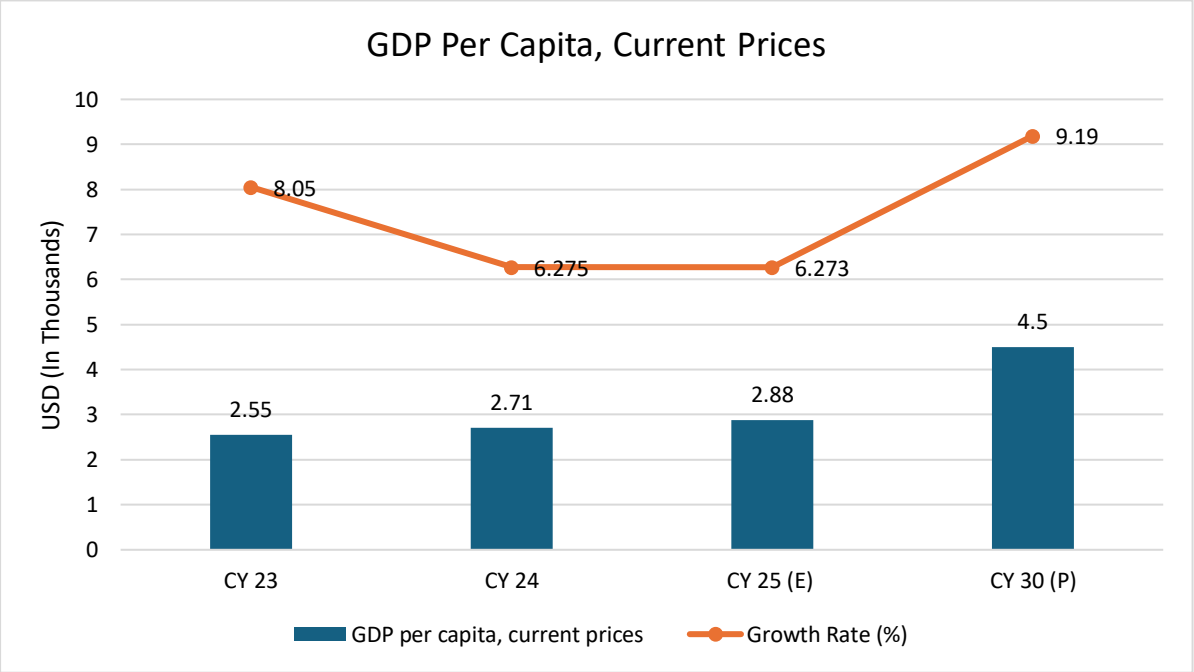
Source: MOSPI, GOI



Source - MOSPI

2.4 India Per Capita GDP Forecast

Per capita GDP growth for India is estimated at 9.19 % CAGR between CY2025-CY2030. Increased individual incomes are expected to create additional discretionary spending, which may be beneficial for the sector.



Note: E = Estimated, P = Projected

Source: IMF Data Mapper, World Economic Outlook April 2025, India, GDP Per Capita

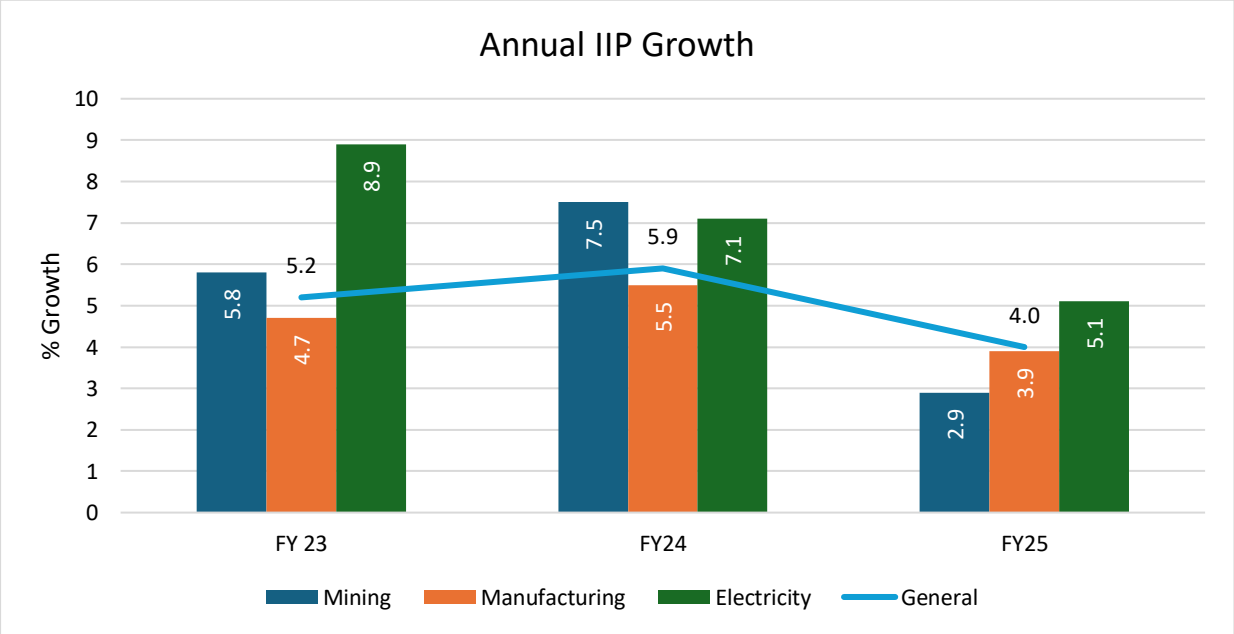
2.5 Index of Industrial Production (IIP) Growth Trends:

As per the Index of Industrial Production (IIP), the industrial sector grew by 4.0% in FY 2025, moderating from 5.9% in FY 2024 and 5.2% in FY 2023. This deceleration in overall IIP growth in FY 2025 reflects a softening of industrial momentum amidst global headwinds and tighter financial conditions.

Among key components:

- **Manufacturing** (which holds a 77.6% weight in IIP) registered a slower growth of 3.9% in FY 2025, compared to 5.5% in FY 2024 and 4.7% in FY 2023.
- **Mining** growth also moderated sharply to 2.9% in FY 2025 from 7.5% in FY 2024 and 5.8% in FY 2023.
- **Electricity** growth remained relatively stable at 5.1% in FY 2025, slightly down from 7.1% in FY 2024 and significantly lower than 8.9% in FY 2023.

This slowdown indicates tightening domestic demand and spillover effects from a weaker global industrial cycle.



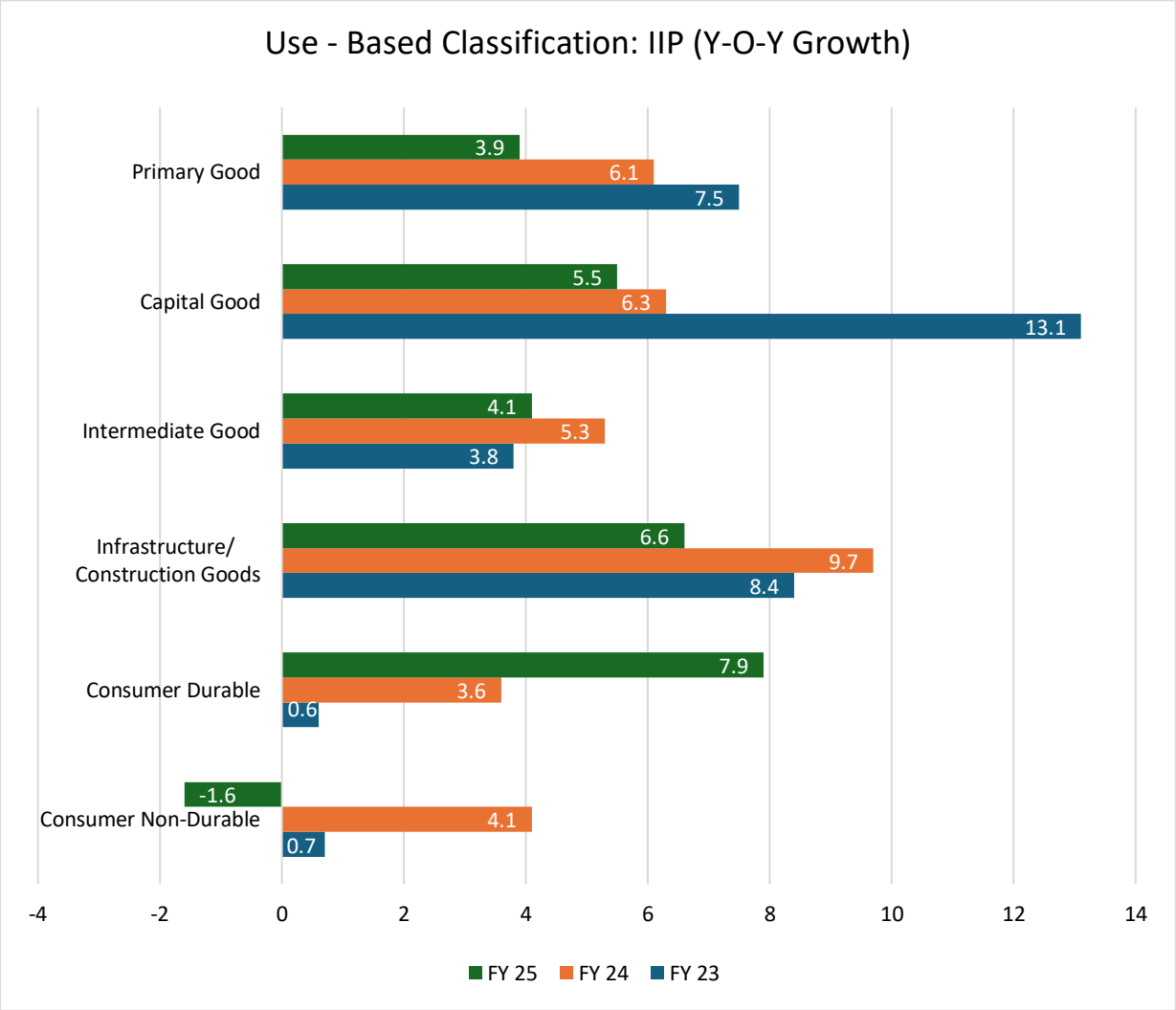
Source: Ministry of Statistics & Programme Implementation (MOSPI)

Latest IIP data in Oct'25 remains a tad low amid less activity during festival times

The Index of Industrial Production (IIP) slows a tad at 0.4% during Oct'25 due to less working days available amid festivals. The growth rates of the three sectors, Mining, Manufacturing and Electricity for the month of October 2025 are (-) 1.8 percent, 1.8 percent and (-) 6.9 percent respectively. Lower demand in October 2025 and subsequent decline in electricity generation was driven by extended rainfall season and comfortable ambient temperature across multiple States/UTs.

Source: Quick Estimate of Index of Industrial Production and Use-Based Index for the Month of October 2025, MOSPI, December 01, 2025 Release

Use-Based Classification Trends:



Source: Ministry of Statistics & Programme Implementation (MOSPI)

According to the use-based classification:

- Capital Goods segment growth slowed to 5.5% in FY 2025, down from a high of 13.1% in FY 2023 and 6.3% in FY 2024, indicating a reduction in investment momentum.
- Primary Goods also witnessed slower growth at 3.9%, compared to 6.1% in FY 2024 and 7.5% in FY 2023.
- Intermediate Goods rebounded modestly to 4.1% in FY 2025, up from 3.8% in FY 2023, although still lower than 5.3% in FY 2024.
- Infrastructure/Construction Goods slowed to 6.6% in FY 2025 from 9.7% in FY 2024 and 8.4% in FY 2023, pointing to softening construction and infrastructure activity.
- Consumer Durables grew significantly by 7.9%, rebounding from 3.6% in FY 2024 and 0.6% in FY 2023, indicating improved demand in consumer electronics and appliances.

- In contrast, Consumer Non-Durables contracted by 1.6% in FY 2025, reversing the 4.1% growth in FY 2024, likely reflecting subdued rural and essential goods demand.

  The divergence in growth across segments suggests an uneven industrial recovery in FY 2025. While certain consumer categories have rebounded, investment-related and primary sectors remain under pressure.

The latest growth rates of IIP as per Use-based classification in October 2025 over October 2024 are (-)0.6 percent in Primary goods, 2.4 percent in Capital goods, 0.9 percent in Intermediate goods, 7.1 percent in Infrastructure/ Construction Goods, (-) 0.5 percent in Consumer durables and (-)4.4 percent in Consumer non-durables. Based on use-based classification, top three positive contributors to the growth of IIP for the month of October 2025 are Infrastructure/ construction goods, Intermediate goods and Capital goods.

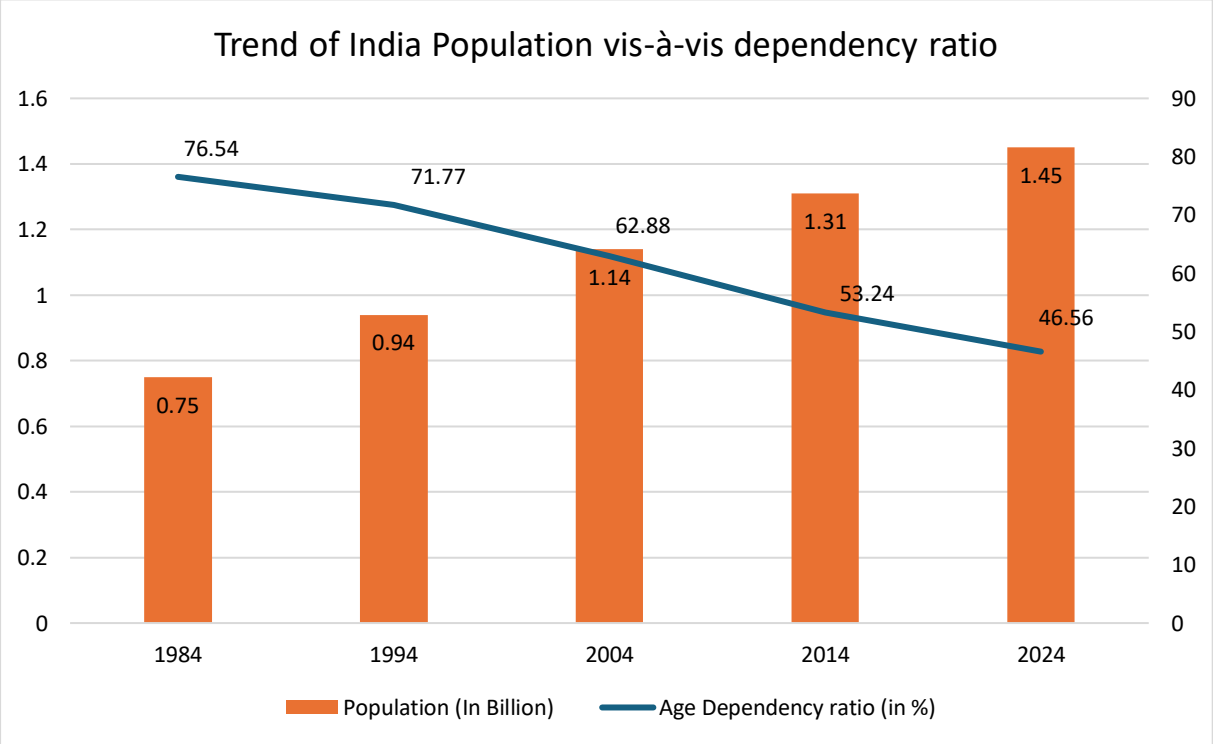
2.6 Overview on Key Demographic Parameters

2.6.1 Population growth and Urbanization

India's economic trajectory and consumption dynamics are closely tied to its demographic shifts. According to the World Bank, India's population expanded from approximately 0.75 billion in 1984 to 1.45 billion in 2024, consolidating its position as the world's most populous nation. This growth underlines the emergence of a vast labour force and consumer base, essential for driving sustained economic progress.

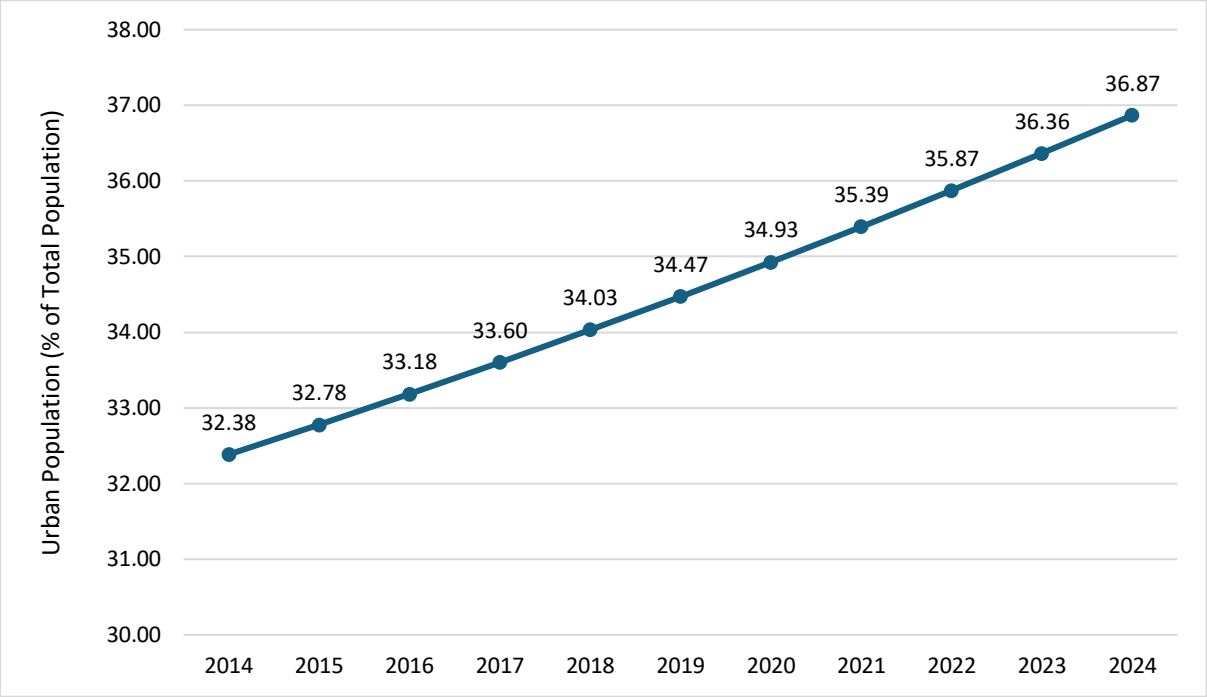
A key demographic indicator—the age dependency ratio—has witnessed a steady decline over the last four decades. From a high of 76.54% in 1984, it reduced to 71.77% in 1994, 62.88% in 2004, and 53.24% in 2014, before reaching a low of 46.56% in 2024. This downward trend signifies that for every 100 working-age individuals, there are now fewer than 47 dependents, compared to over 76 dependents in the mid-1980s. Such a shift reflects a growing share of the working-age population, unlocking India's demographic dividend—a critical driver of productivity, savings, and investment.

Together, the rising total population and declining dependency ratio provide a dual advantage: a larger workforce capable of supporting economic activity and a lower demographic burden, which allows for higher disposable incomes and consumption growth. These demographic fundamentals form a strong backbone for India's long-term economic and private consumption expansion.



Source: World Bank Database, Infomerics Analytics & Research

Urbanization Trend in India



Source: World Bank Database

Urbanization, too, is transforming India's socio-economic fabric. The urban population rose from 424.96 million in 2014 (32.38% of total population) to 522.93 million in 2023 (36.36%), and further to approximately 534.91 million in 2024 (36.87%), according to World Bank estimates. This rapid growth in urban areas underscores the need for sustainable urban planning, investment in infrastructure, and development of smart cities to accommodate and benefit from the shifting population dynamics.

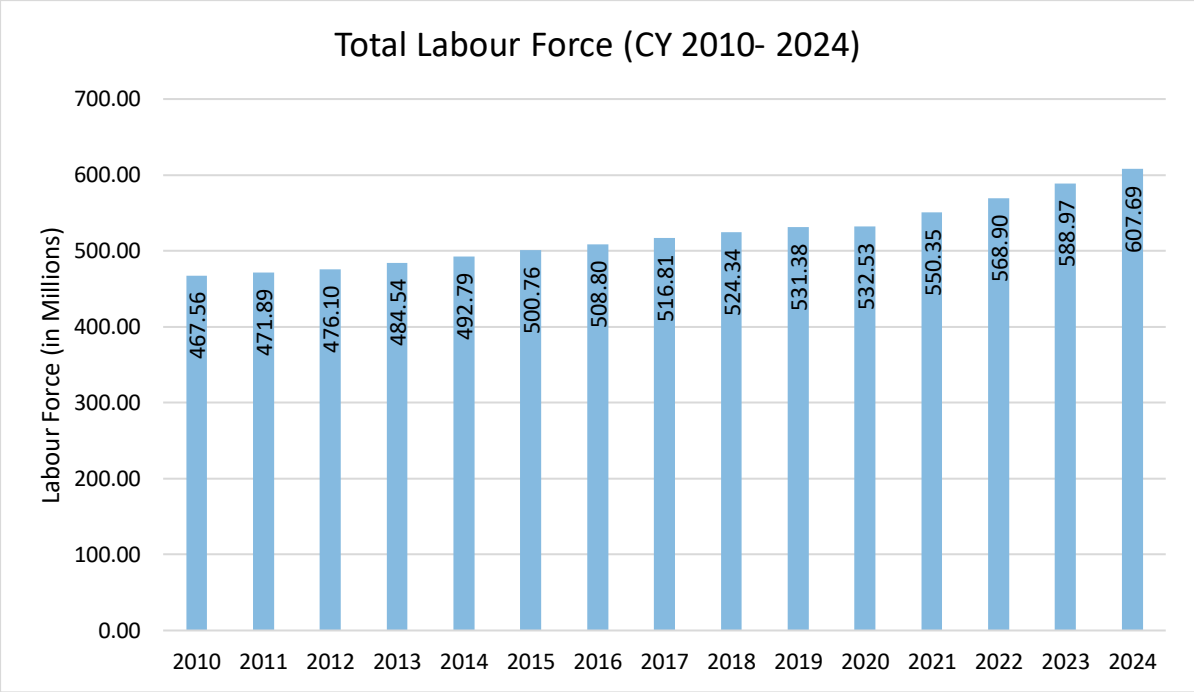
2.6.2 Labour Force in India

India's labour force has experienced significant growth over the past decade. In 2010, the total labour force was approximately 467.56 million. By 2024, this number had increased to 607.69 million, reflecting a Compound Annual Growth Rate (CAGR) of 1.89% over the 14-year period.

This upward trend underscores the expanding working-age population and the country's ongoing economic development. However, it also highlights the need for effective employment policies to ensure that the growing labour force is adequately absorbed into productive sectors.

The labour force participation rate (LFPR) has also seen fluctuations, influenced by various socio-economic factors. As of 2024, the LFPR stood at 45.1%, indicating the percentage of the working-age population that is either employed or actively seeking employment.

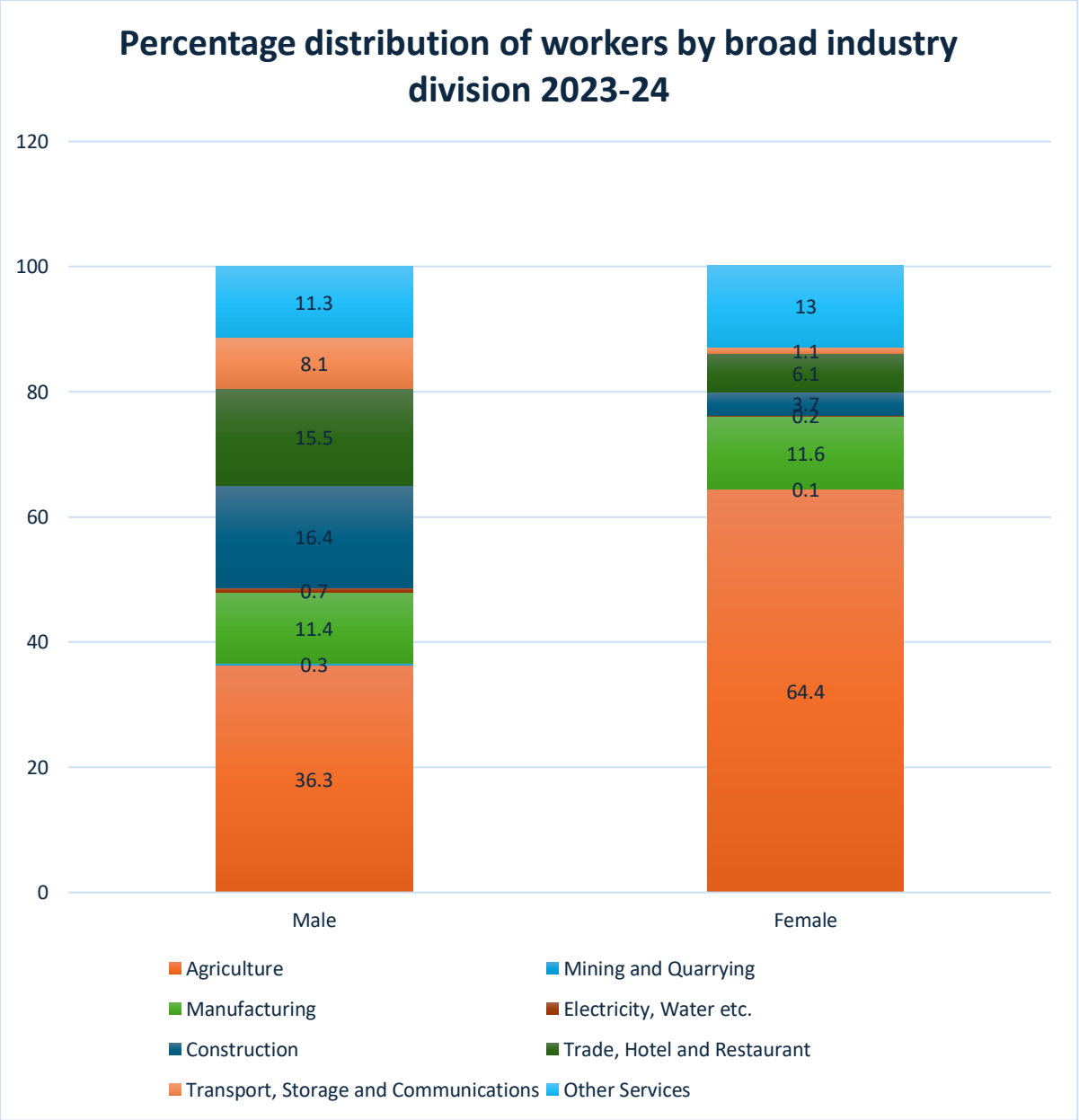
These statistics emphasize the importance of implementing strategies that not only create employment opportunities but also enhance the quality and inclusivity of jobs across different sectors of the economy.



Source: World Bank Database

2.6.3 Breakdown of Employment by Sector

According to the Periodic Labour Force Survey (PLFS) 2023–24, the employment distribution across various sectors exhibits distinct gender-based patterns. A significant portion of male workers are engaged in agriculture, followed by notable participation in construction, manufacturing, and trade-related activities. In contrast, female workers are predominantly employed in agriculture, with considerable involvement in manufacturing and other services sectors. While female representation in trade and construction is lower compared to males, Additionally, a substantial proportion of employed women are self-employed, often contributing as unpaid helpers in household enterprises or operating small businesses, indicating a reliance on informal employment avenues.

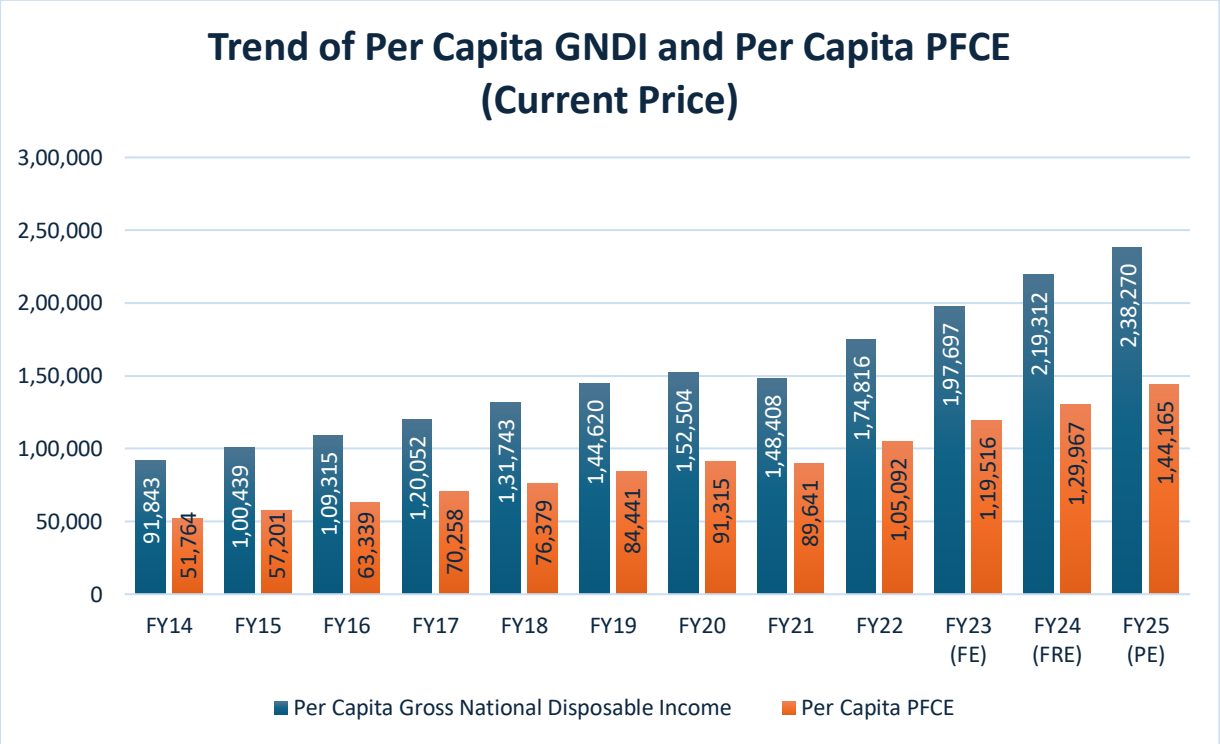


Source: Annual Report 2023-24, Periodic Labour Force Survey

2.6.4 Disposable Income and Consumer Spending

Gross National Disposable Income (GNDI) represents the total income available to a nation's residents for consumption and saving after accounting for income transfers with the rest of the world. In FY24, Per capita GNDI grew by 10.9%, followed by a moderate growth of 8.6% in FY25. This steady increase indicates that households and businesses had more income at their disposal, which is critical for supporting both consumption and savings—key components of economic resilience and expansion.

The rise in GNDI has translated into higher consumer spending, as reflected in the growth of Private Final Consumption Expenditure (PFCE), which measures the total value of goods and services consumed by households. Per Capita PFCE grew by 8.7% in FY24 and further accelerated to 10.9% in FY25, highlighting strong consumer confidence and robust domestic demand.



Note: Data mentioned is in INR, FE – Final Estimates, FRE – First Revised Estimates, PE – Provisional Estimate

Source: PIB, *Provisional estimates of GDP 2024-25 released on May 30th, 2025*

2.7 Union Budget FY26-27 Highlights

The Union Budget FY 2026–27, presented by Finance Minister Nirmala Sitharaman, introduces a comprehensive set of measures aimed at stimulating economic growth, enhancing infrastructure, and fostering inclusive development. With a focus on sectors such as agriculture, MSMEs, infrastructure, innovation, and exports, the budget seeks to create a conducive environment for sustained economic expansion.

- **Capital Expenditure and Infrastructure Development**
  In FY2026-27, the Union Budget has increased the public capex towards to INR 12.2 lakh crore from the previous INR 11.21 lakh crore (3.1% of GDP) which was earmarked in FY 2025–26. To strengthen the confidence of private developers regarding risks during infrastructure development and construction phase, the budget proposed to set up an Infrastructure Risk Guarantee Fund to provide prudently calibrated partial credit guarantees to lenders.
- **Support for MSMEs**
  Recognizing the pivotal role of Micro, Small, and Medium Enterprises (MSMEs) in India's economic landscape, the budget introduced a three-pronged approach to support the sector. The budget introduced a dedicated INR 10,000 crore SME Growth Fund as well as proposed to top up the Self-Reliant India Fund set up in 2021, with INR 2,000 crore to continue support to micro enterprises and maintain their access to risk capital. With TReDS, more than INR 7 lakh crore has been made available to MSMEs. To leverage its full potential, the budget further proposed four measures: (i) mandate TReDS as the transaction settlement platform for all purchases from MSMEs by CPSEs, serving as a benchmark for other corporates; (ii) introduce a credit guarantee support mechanism through CGTMSE for invoice discounting on TReDS platform; (iii) link GeM with TReDS for sharing information with financiers about government purchases from MSMEs, encouraging cheaper and quicker financing; (iv) introduce TReDS receivables as asset-backed securities, helping develop a secondary market, enhancing liquidity and settlement of transactions. Moreover, Government will facilitate Professional Institutions such as ICAI, ICSI, ICMAI to design short-term, modular courses and practical tools to develop a cadre of 'Corporate Mitras', especially in Tier-II and Tier-III towns, which will help MSMEs meet compliance requirements at affordable costs.
- **Establishment of dedicated Rare Earth Corridors**
  A Scheme for Rare Earth Permanent Magnets was launched in November 2025. In line with that, the budget proposed to support the mineral-rich States of Odisha, Kerala, Andhra Pradesh and Tamil Nadu to establish dedicated Rare Earth Corridors to promote mining, processing, research and manufacturing.

- **Integrated Programme for the Textile Sector**

  The following Schemes have been announced:

  (a) The National Fibre Scheme for self-reliance in natural fibres such as silk, wool and jute, man-made fibres, and new-age fibres.

  (b) Textile Expansion and Employment Scheme to modernise traditional clusters with capital support for machinery, technology upgradation and common testing and certification centres.

  (c) A National Handloom and Handicraft programme to integrate and strengthen existing schemes and ensure targeted support for weavers and artisans.

  (d) Tex-Eco Initiative to promote globally competitive and sustainable textiles and apparels.

  (e) Samarth 2.0 to modernize and upgrade the textile skilling ecosystem through collaboration with industry and academic institutions.

- **Carbon Capture Utilization and Storage (CCUS)**

  Aligning with the roadmap launched in December 2025, CCUS technologies at scale will achieve higher readiness levels in end-use applications across five industrial sectors, including, power, steel, cement, refineries and chemicals. An outlay of INR 20,000 crore is proposed over the next 5 years.

- **Municipal Bonds**

  To encourage the issuance of municipal bonds of higher value by large cities, the budget proposed an incentive of INR 100 crore for a single bond issuance 10 of more than INR 1000 crore. The current scheme under AMRUT which incentivises issuances up to INR 200 crore, will also continue to support smaller and medium towns.

- **Ease of Doing Business**

  Individual Persons Resident Outside India (PROI) will be permitted to invest in equity instruments of listed Indian companies through the Portfolio Investment Scheme. It is also proposed to increase the investment limit for an individual PROI under this scheme from 5% to 10%, with an overall investment limit for all individual PROIs to 24%, from the current 10%.

- **Hubs for Medical Value Tourism**

  To promote India as a hub for medical tourism services, the budget proposed to launch a Scheme to support States in establishing five Regional Medical Hubs, in partnership with the private sector. These Hubs will serve as integrated healthcare complexes that combine medical, educational and research facilities. They will have AYUSH Centres, Medical Value Tourism Facilitation Centres and infrastructure for diagnostics, post-care and rehabilitation. These Hubs will provide diverse job opportunities for health professionals including doctors and AHPs.

- **Agriculture Related Schemes**

  To diversify farm outputs, increase productivity, enhance farmers' incomes, and create new employment opportunities, the budget announced support schemes related to high value crops such as coconut, sandalwood, cocoa and cashew in coastal areas. Agar trees in Northeast and nuts such as, almonds, walnuts and pine nuts in hilly regions will also be supported. India is the world's largest producer of coconuts.

  About 30 million people, including nearly 10 million farmers, depend on coconuts for their livelihood. To further enhance competitiveness in coconut production, the Budget proposed a Coconut Promotion Scheme to increase production and enhance productivity through various interventions including replacing old and non-productive trees with new saplings/plants/varieties in major coconut growing States. A dedicated programme is proposed for Indian cashew and cocoa to make India self-reliant in raw cashew and cocoa production and processing, enhance export competitiveness and transform Indian Cashew and Indian Cocoa into premium global brands by 2030.

  Further, the Central Government will partner with State Governments to promote focused cultivation and post-harvest processing to restore the glory of the Indian Sandalwood ecosystem. To rejuvenate old, low-yielding orchards and expand high-density cultivation of walnuts, almonds and pine nuts, the budget announced to support a dedicated programme to enhance farmer incomes and in bringing value addition by engaging youth.

The Union Budget FY 2026–27 presents a balanced approach to economic growth by addressing immediate consumption needs and laying the foundation for long-term sustainability. Through targeted investments in infrastructure, support for MSMEs, and sector-specific initiatives, the budget aims to foster an inclusive and resilient economy. These measures are expected to create new opportunities for financial institutions, as the growing demand for investment products will provide avenues for expansion and innovation in the financial services sector.

3. Industry Overview – Global Plastic Film Packaging Industry

3.1 Introduction

As global demand shifts toward convenience, sustainability, and enhanced product safety, the plastic film packaging industry has emerged as a vital component of modern packaging solutions. This segment, which forms the backbone of the broader flexible packaging industry, focuses on the use of thin polymer-based films to deliver high-performance, versatile, and cost-efficient packaging across sectors such as food & beverage, pharmaceuticals, personal care, home care, agriculture, and industrial goods.

Plastic films are typically manufactured using materials such as polyethylene (PE), polypropylene (PP), polyester (PET), polyvinyl chloride (PVC), and advanced multilayer laminates. These films are valued for their lightweight properties, mechanical strength, moisture and gas barrier capabilities, printability, and recyclability. Key formats include shrink films, stretch films, barrier films, metallized films, co-extruded films, and biodegradable or compostable films tailored for diverse applications ranging from snack packaging to pharmaceutical blister packs.

The industry has transitioned from producing basic mono-layer films to complex multi-layered structures engineered for specific performance attributes—such as high barrier protection, temperature resistance, and product shelf-life enhancement. Innovations such as anti-fog coatings, antimicrobial layers, and recyclable mono-material structures are reshaping product portfolios in line with ESG norms and circular economy principles.

Driven by the global shift toward e-commerce, sustainable sourcing, and value-added packaging, companies are now integrating AI-based defect detection, automation, digital printing, and smart packaging features (like QR codes and NFC tags) into their production lines. These advancements support both branding and logistical traceability, improving end-user experience and supply chain visibility.

Furthermore, with regulatory frameworks tightening around single-use plastics, many players are investing in chemical recycling, closed-loop manufacturing, and bio-based alternatives. The rise of Extended Producer Responsibility (EPR) in markets like India and the EU is also compelling firms to offer recyclable and compostable alternatives to traditional plastic films.

Emerging economies such as India, Vietnam, and Mexico are fast becoming global manufacturing hubs for plastic film packaging, benefiting from competitive production costs, raw material availability, and export-friendly policies. Strategic partnerships between multinational consumer brands and regional film converters are accelerating innovation and expanding global reach.

In summary, the plastic film packaging industry is at the confluence of material science, digital transformation, and sustainability leadership. Its future will be shaped by the industry's ability to balance performance, cost, environmental compliance, and consumer-centric innovation in an increasingly dynamic global landscape.

3.2 Market segmentation for Plastic Film packaging Industry

Segmentation Category	Sub-Segments / Details
1. Material Type	• Polyethylene (LDPE, LLDPE, HDPE) • Polypropylene (BOPP) - Polyester (PET) • Polyvinyl Chloride (PVC) • Polystyrene (PS) • Nylon, EVOH • Bio-based Films
2. Packaging Type	• Pouches (stand-up, zipper, spouted) • Bags & Sacks (retail, garbage, industrial) • Wraps (cling, shrink, stretch) • Laminates (multi-layer)
3. End-Use Industry	• Food & Beverage • Pharmaceuticals • Personal Care & Cosmetics • Homecare Products - Industrial Applications • Agriculture • Retail & E-Commerce
4. Technology	• Blown Film Extrusion • Cast Film Extrusion • Biaxially Oriented Film Tech (BOPP, BOPET) • Digital & Flexographic Printing • Lamination (solvent-less/solvent-based)

Detailed Overview of the segments

1. **By Material Type**
   - **Polyethylene (PE) -** Widely used due to cost-effectiveness, flexibility, and barrier properties. Includes: LDPE (Low-Density PE) for squeeze bottles and film wraps, LLDPE (Linear Low-Density PE) for stretch films, and HDPE (High-Density PE) for rigid and strong films.
   - **Polypropylene (PP) -** Especially BOPP (Biaxially Oriented Polypropylene), preferred for high clarity, strength, and moisture resistance. Used in snack, confectionery, and tobacco packaging.

- **Polyester (PET) -** High tensile strength, clarity, and thermal stability. BOPET films are used in food, pharma, and industrial packaging for their superior barrier properties.
- **Polyvinyl Chloride (PVC) -** Offers good shrink properties and clarity. Used in blister packs and shrink sleeves, though declining due to environmental concerns.
- **Polystyrene (PS), Nylon, EVOH -** Used for specialty applications—PS for transparency, Nylon for puncture resistance, EVOH for superior gas barrier in food packaging.
- **Bio-based Films -** Made from renewable sources like PLA or starch. Gaining traction due to sustainability mandates and consumer preference for eco-friendly options.

2. **By Packaging type**
   - **Pouches -** Includes stand-up, zipper, and spouted varieties. Offers convenience, resealability, and shelf appeal. Popular in foods, beverages, and personal care**.**
   - **Bags & Sacks -** Used in retail, grocery, and industrial bulk packaging. Includes garbage bags, courier bags, and rice or cement sacks.
   - **Wraps -** Includes cling films, shrink wraps, and stretch films. Used for bundling, pallet wrapping, and food preservation.
   - **Laminates -** multi-layer films that combine materials for enhanced performance. Widely used in food and pharma for extended shelf life and barrier needs**.**

3. **By End Use Industry**
   - **Food & Beverage -** Largest consumer segment. Demands moisture-proof, hygienic, and oxygen-barrier films for snacks, dairy, ready-to-eat, frozen foods, and beverages.
   - **Pharmaceuticals -** Requires high-barrier laminates and films with tamper-proof and anti-contamination properties. Used in sachets, blister packs, and medical pouches.
   - **Personal Care & Cosmetics -** Flexible packaging for shampoos, face masks, wipes, and lotions. Focus on aesthetic appeal and premiumization.
   - **Homecare Products -** Packaging for detergents, floor cleaners, and disinfectants. Emphasis on strength and spill-proof features.
   - **Industrial Applications -** Includes films for automotive parts, electronics, building materials, and agrochemical packaging. Requires high durability and protective features.
   - **Agriculture -** Mulch films, silage wraps, and seed packaging with UV protection and biodegradability.
   - **Retail & E-Commerce -** Courier bags, tamper-evident pouches, and branded packaging for last-mile delivery. Growing segment driven by online shopping.

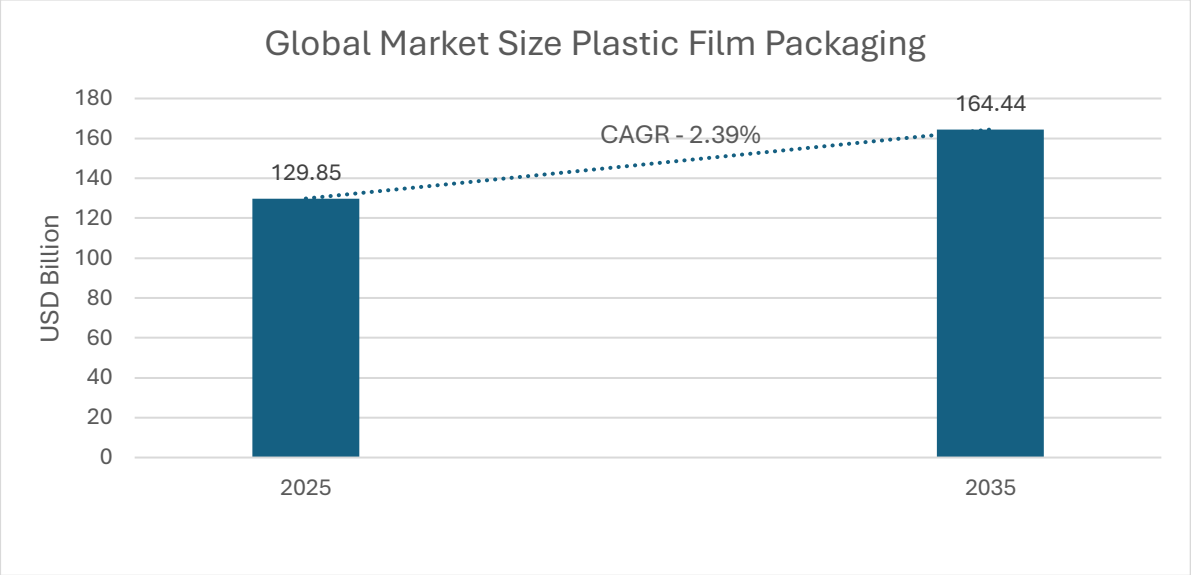
4. **By Technology**
   - **Blown Film Extrusion -** Cost-effective for high-volume films. Used in bags, liners, and agricultural films. Allows multilayer co-extrusion.

- **Cast Film Extrusion -** Offers better clarity and thickness control. Used for stretching wrap, lamination films, and hygiene products.
- **Biaxially Oriented Film Technology (BOPP, BOPET) -** Increases strength, transparency, and barrier performance. Common in snack and pharma packaging**.**
- **Digital & Flexographic Printing -** Used for branding, barcoding, and QR-enabled packaging. Flexo is high-speed, while digital allows short runs and personalization.
- **Lamination -** Solvent-less or solvent-based adhesives used to bind multiple layers. Critical for combining barrier, strength, and printability.

3.3 Global market Size and growth

3.3.1 Plastic Film Packaging Market Size and Forecast

The global Plastic Films industry is estimated to be USD 129.85 billion in 2025. It is further expected to reach USD 164.44 billion by 2035, registering a Compound Annual Growth Rate (CAGR) of 2.39% over the forecast period. This growth is primarily driven by increasing demand for lightweight, flexible, and sustainable packaging solutions across end-use industries such as food and beverage, pharmaceuticals, personal care, and industrial goods.



Source – Infomerics Analytics & Research

Growth will be propelled by rising food and beverage packaging demand, regulatory push for sustainability, rising e-commerce volumes, and advancements in packaging technology. The increasing use of high-barrier, bio-based, and smart packaging solutions—particularly in pharmaceuticals and retail—will remain key sector growth drivers. Manufacturers are expected to accelerate investments in recyclable and biodegradable films to align with environmental commitments and regulatory mandates. In addition, the down-gauging trend and regional customization of packaging formats will contribute to enhanced material efficiency and improved consumer relevance.

Regional Insights

- **North America –** North America is one of the most mature and innovation-driven markets for flexible packaging. Growth in this region is primarily led by increasing demand from the food and beverage, pharmaceutical, and personal care sectors. The widespread adoption of e-commerce has amplified the need for durable, tamper-evident packaging solutions that ensure product integrity during shipping. Furthermore, consumer

preference for convenience and environmentally responsible packaging has encouraged the use of recyclable and biodegradable materials. Regulatory emphasis on sustainability and waste reduction, coupled with advancements in material science and design, continues to drive innovation in the region.

- **Europe –** The flexible packaging market in Europe is shaped by stringent environmental regulations and circular economy mandates. The European Union's Circular Economy Action Plan requires 55% of plastic packaging to be recyclable by 2025, encouraging manufacturers to innovate in compostable and bio-based films. Flexible packaging dominates food packaging in Western Europe due to its light weight and extended shelf-life benefits. The pharmaceutical industry is also a key driver, supported by increasing demand for flexible blister packs and sachets. An annual trade surplus of approximately EUR 109.4 billion in pharmaceutical exports further underscores its importance. Growth in private-label brands and increased on-the-go food consumption also contribute to market expansion.
- **Asia pacific –** Asia-Pacific represents the largest and fastest-growing market for flexible packaging globally, supported by rapid urbanization, rising disposable incomes, and growth in food processing, personal care, and e-commerce sectors. According to UN-Habitat, the region's urban population is expected to increase by 50% by 2050, driving the demand for convenience-based packaging formats such as stand-up pouches and sachets. Government-led initiatives such as India's PLI Scheme and China's Made in China 2025 program are encouraging technological advancements in the flexible packaging sector.
- **Latin America** – In Latin America, market growth is led by the food and beverage sector, cost-effective raw material sourcing, and rising demand for sustainable packaging. Brazil and Mexico are the key markets, with increasing consumption of processed foods and expansion in the personal care industry. E-commerce adoption and regulatory measures such as Chile's plastic ban are propelling the shift toward recyclable and compostable flexible materials.
- **Middle east and Africa** – The flexible packaging market in the Middle East and Africa is growing steadily due to increasing urbanization, food security initiatives, and rising e-commerce activity. More than 50% of the region's demand originates from the food and beverage sector, particularly for vacuum-sealed packaging of perishable exports. Saudi Arabia's Vision 2030 and related policy frameworks encourage the adoption of sustainable and recyclable packaging. The pharmaceutical industry is expanding rapidly, with national localization programs driving the production of blister packs and flexible medical-grade packaging.

3.4 Market Trends

- **Increasing emphasis on Environmental Sustainability** - There is a growing global emphasis on reducing environmental impact, which is driving the demand for sustainable and eco-friendly packaging solutions. Consumers are increasingly opting for packaging formats that contribute to lower greenhouse gas (GHG) emissions and support circular economy goals. Flexible packaging, by design, uses less material and energy during production compared to rigid alternatives, making it inherently more sustainable. Additionally, regulatory bodies across key markets are promoting the adoption of sustainable packaging practices. These initiatives are focused on reducing plastic waste, energy usage, and carbon emissions associated with single-use plastic packaging, thereby reinforcing the momentum for sustainable flexible packaging solutions globally.
- **Rising Demand for Consumer Convenience** - Changing consumer lifestyles and a preference for convenience have led to increased adoption of flexible packaging formats that are portable, resealable, and easy to use. The demand for single-serve and on-the-go packaging solutions in the food and beverage sector continues to rise, as these formats help reduce food waste and enhance portion control. In response, industry participants are introducing portion-sized packaging to cater to diverse consumption patterns. As an example, Berry Global Group, Inc. partnered with Mars, a global snack and treats manufacturer, to introduce pantry-sized treats in polyethylene terephthalate (PET) jars. These jars, launched in September 2022, are designed to be lightweight and contain 15% post-consumer recycled (PCR) content, aligning with both convenience and sustainability goals.
- **Technological Advancements in Packing Material** - Continued innovation in packaging materials and design is enabling manufacturers to deliver enhanced product protection, extended shelf life, and improved functionality. Developments in barrier film technology and recyclable substrates are key enablers in the flexible packaging industry. Leading players are investing in R&D and strategic collaborations to bring novel solutions to market. For example, On October 3, 2022, Mondi collaborated with Norwegian pet food company Felleskjøpet to introduce a recyclable high-barrier packaging solution under the brand name 'FlexiBag Recyclable'. This solution provides high barrier performance to preserve product quality while meeting recyclability requirements, reflecting the industry's shift towards combining functionality with sustainability.
- **Volatility in Raw Material Prices -** Global prices of key polymers (like LDPE, HDPE, PP, and PET) remain volatile due to geopolitical tensions, supply chain disruptions, and crude oil fluctuations. As a result, manufacturers are focusing on material efficiency, downgauging, and circular sourcing strategies to manage costs and reduce dependency on virgin resins.

3.5 Flexible packaging – Leading the way in packaging innovation

Technology Innovation and Product Advancement

The flexible packaging industry continues to evolve through sustained innovation and cross-sector collaboration. Technological advancements in material science have led to the development of flexible packaging with improved barrier properties against moisture, oxygen, Odors, and bacteria. These innovations have enabled flexible packages to be more durable, printable, and compatible with sterilization and heating applications, while simultaneously reducing the environmental impact. When compared to traditional formats such as metal cans or glass jars, flexible packaging offers significantly lower greenhouse gas emissions, water and energy consumption, and transportation costs.

For instance, the production of a flexible food service pouch requires up to 75% less energy and results in approximately one-tenth of the CO_2 emissions generated during the manufacture of a metal can for an equivalent product quantity. Additionally, 1.5 pounds of flexible packaging can contain the same volume of liquid food as 50 pounds of glass, and transporting these pouches requires substantially fewer truckloads.

Sustainability and Circular Economy Alignment

Sustainability is a central theme in the ongoing transformation of the flexible packaging industry. Flexible packaging solutions offer several environmental benefits including:

- Source reduction and lower packaging waste
- Decreased carbon footprint during transportation and storage
- Extended shelf life and reduced food spoilage
- Compatibility with renewable materials and compostable formats
- Consumer convenience and portion control

Brands, retailers, and packaging manufacturers are increasingly aligning with these objectives by investing in sustainable materials and technologies. Initiatives include the incorporation of post-consumer recycled (PCR) content, bio-based polymers, and readily recyclable mono-material structures. Bio-based plastics made from renewable resources such as corn, sugarcane, and vegetable oils are also being developed and commercialized. Compostable flexible films are gaining traction in select applications where end-of-life management infrastructure is available.

Advanced packaging formats are now designed to be compatible with commercial recycling and composting systems, reducing landfill dependence. Intelligent packaging, which includes sensors and indicators for shelf-life and freshness, is being introduced to further minimize food waste and improve supply chain efficiency.

4. Indian Plastic Films Packaging Industry

4.1 Overview of the Plastic Films Packaging Industry in India

The plastic films packaging industry in India represents a dynamic and indispensable segment of the nation's broader packaging sector. It plays a crucial role in serving high-growth industries such as food and beverages, pharmaceuticals, personal and home care, FMCG, industrial chemicals, and Agri-products, by providing cost-effective, durable, and efficient packaging formats. Plastic films used in packaging are primarily produced from polymers like polyethylene (PE), polypropylene (PP), polyester (PET), polyvinyl chloride (PVC), and nylon, offering a combination of flexibility, barrier properties, and mechanical strength.

India's plastic films segment includes a wide array of formats such as laminated rolls, multilayer films, stretch and shrink films, pouches, wraps, and thermoformed films. These are extensively used for packaging snacks, dairy products, ready-to-eat meals, condiments, personal care items, and over-the-counter pharmaceuticals. Their lightweight nature, customizability, shelf-life extension, and adaptability to high-speed packaging lines have made them a preferred packaging medium for both domestic consumption and export-oriented industries.

Over the past decade, the Indian market has witnessed a shift from unorganised, low-value converters to organised, integrated manufacturers offering advanced, value-added packaging. This includes solvent-free lamination, high-barrier metallized films, recyclable mono-materials, and compostable film technologies. The sector's evolution is being spurred by rising urbanisation, growing retail penetration, the proliferation of e-commerce, and the increasing demand for hygiene-focused packaging post-COVID.

Additionally, government regulations such as the Plastic Waste Management Rules (PWM) and Extended Producer Responsibility (EPR) are pushing the industry toward sustainable innovation. Many leading players are developing recyclable, biodegradable, and reusable plastic films, aligning with global sustainability goals and India's climate commitments. This is further catalysed by the growing emphasis on circular economy practices, plastic credit systems, and the preference for source-reduced, lightweight packaging formats.

As packaging preferences evolve and industries demand higher performance and compliance, the Indian plastic films packaging industry is poised for robust growth. With innovation, sustainability, and automation at its core, it is expected to play a strategic role in India's journey toward becoming a global manufacturing and packaging hub.

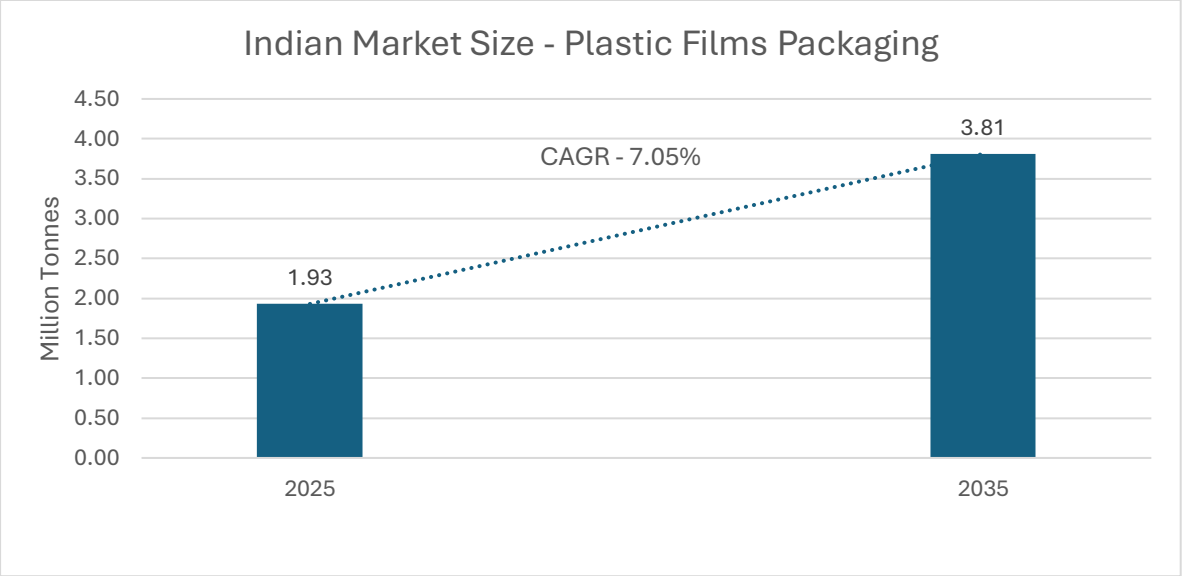
Plastic Types: Applications and Environmental Benefits

Plastic Type	Typical Applications	Reduced Environmental Impact / Benefits
PET (Polyethylene Terephthalate)	•Food jars for jelly, jam, and pickles •Plastic bottles for soft drinks, water, juice •Ovenable film and microwavable food trays	•Excellent resistance to most solvents • High impact capability and shatter resistance • Clear and optically smooth surfaces
HDPE (High-Density Polyethylene)	• Cereal box liners •Reusable shipping containers • Bottles for non-food items (shampoo, detergent, cleaners, motor oil)	• Relatively stiff material •Useful temperature capabilities • Higher tensile strength
PVC (Polyvinyl Chloride)	• Rigid packaging (blister packs, clamshells) •Packaging film, sheet, and loose-leaf binders • Flexible packaging for bedding and medical products	• High impact strength • Brilliant clarity •Excellent processing performance
LDPE (Low-Density Polyethylene)	• Container lids • Shrink wrap and stretch film •Squeezable bottles (e.g., honey, mustard)	•Excellent resistance to acids, bases, and vegetable oils. •Toughness, flexibility, and relative transparency.
PP (Polypropylene)	• Medicine bottles • Bottle caps and closures • Bottles for ketchup and syrup	•Low moisture vapor transmission •Inertness toward acids, alkalis, and most solvents

PS (Polystyrene)	• Protective foam packaging (furniture, electronics, delicate items) • Compact disc cases • Aspirin bottles	• Low thermal conductivity •Excellent insulation properties • Excellent moisture barrier for short shelf-life products

4.2 India Plastic Films Packaging Market Size and Forecast

India's plastic film packaging industry has emerged as a vital segment within the broader flexible packaging ecosystem, playing a pivotal role in the preservation, transportation, and aesthetic presentation of products across food and beverages, pharmaceuticals, FMCG, agriculture, and e-commerce. The market has shown steady growth, with its estimated value increasing from 1.93 million tonnes in FY 2025, indicating consistent demand growth across sectors. As the industry estimates, the Indian plastic film packaging market is projected to reach around 3.81 million tonnes by FY 2035, growing at a CAGR of 7.05% during the forecast period FY 2025–FY 2035.



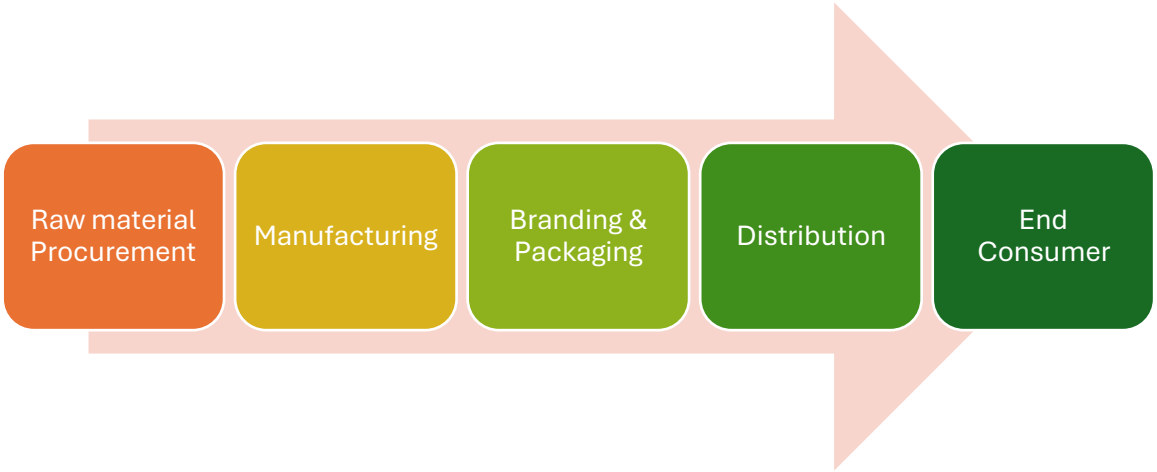
Source – Infomerics Analytics & Research

This growth trajectory is underpinned by increasing demand for hygienic, lightweight, and cost-effective packaging, rising disposable incomes, and expanding modern trade networks. Plastic films such as polypropylene (PP), polyethylene (PE), polyethylene terephthalate (PET), and PVC are extensively used for flexible laminates, barrier packaging, shrink and stretch wraps, and specialty films, making them indispensable across multiple applications. The sector is also benefitting from increased use of multilayer films and biodegradable variants in response to regulatory pressure and consumer preference for eco-friendly alternatives.

India's strong polymer production base, government support for manufacturing (such as under the PLI scheme), and relatively lower operational costs provide a competitive advantage to domestic players. Furthermore, advancements in extrusion and co-extrusion technologies have enhanced film performance, enabling extended shelf-life, better printability, and improved recyclability.

However, the industry faces critical challenges including plastic waste accumulation, lack of robust collection and recycling systems, and regulatory uncertainties surrounding single-use plastics. Moving forward, the sector's sustainability will depend on the scale-up of circular economy practices, development of recyclable mono-material films, and collaborative efforts between industry and government to build integrated waste management frameworks. Despite these hurdles, the plastic film packaging industry in India is expected to maintain its growth momentum, driven by innovation, regulatory alignment, and the evolving needs of a consumption-driven economy.

4.3 Industry Value Chain Analysis



1. Raw Material Procurement: -

The value chain in the Indian Plastic Films packaging industry begins with the procurement of base raw materials, primarily comprising polyethylene (PE), polypropylene (PP), polyester (PET), aluminium foil, adhesives, inks, and in some cases, bioplastics. The selection and quality of these inputs directly impact the mechanical strength, barrier properties, and recyclability of the final packaging material. Sourcing is a mix of domestic procurement from petrochemical firms and global imports, particularly for specialty films or aluminium laminates. Backward integration is common among larger players who maintain in-house extrusion, ink formulation, and adhesive coating lines to ensure consistency, cost control, and formulation flexibility.

2. Manufacturing: -

The manufacturing stage includes a series of integrated processes such as film extrusion or lamination, metallization, printing (flexographic, rotogravure, or digital), slitting, pouching, and converting. Depending on the final application, packaging formats may undergo value additions like resealable zippers, spouts, or laser scoring. High-speed automated machines ensure precision and scalability, while stringent quality checks are deployed to comply with FSSAI, pharma-grade, or export specifications. Technological advancements such as high-barrier mono-material films, solventless lamination, and recyclable structures have improved production efficiency and environmental compliance.

3. Branding & Packaging: -

With increased competition and direct-to-consumer (D2C) engagement, branding and packaging aesthetics have gained strategic importance. Beyond structural integrity, packaging now conveys attributes such as sustainability (recyclable, compostable), health safety (BPA-free, food-grade), convenience (resealability, microwave compatibility), and product differentiation. Labels often highlight certifications, product claims, and usage instructions. Brand owners are also demanding minimalist, sustainable, and digitally interactive packaging (e.g., QR codes for traceability). Premium FMCG and personal care brands invest heavily in customized packaging that enhances shelf appeal and reinforces brand identity.

4. Distribution: -

Distribution of flexible packaging materials in India is facilitated through a multi-channel network, including:

- Direct sales to FMCG, pharma, and agro-input manufacturers (bulk buyers)
- B2B dealers and packaging converters who serve MSMEs and smaller brands
- Online B2B platforms and export agents for global trade
- OEM supply chains aligned with multinational brands or private-label programs. With the growing prominence of e-commerce and D2C models, flexible packaging suppliers are increasingly aligning with fast-moving brands seeking agile, small-batch, and custom packaging. Efficient logistics, warehousing, and just-in-time (JIT) delivery capabilities are vital to meeting short turnaround times and maintaining packaging supply continuity.

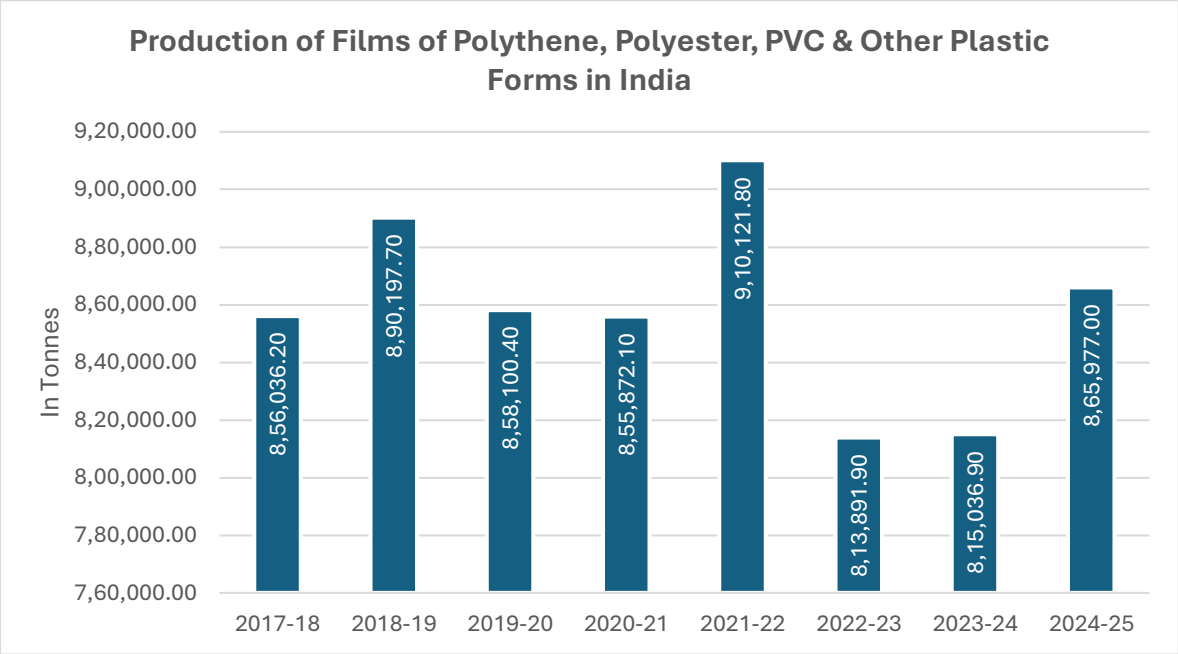
5. End Consumer: -

The final users of Plastic Films packaging are diverse and span across:

- **FMCG brands** (snacks, ready-to-eat, dairy, frozen foods, beverages)
- **Pharmaceutical companies** (blister foils, medical-grade laminates, unit-dose sachets)
- **Personal and home care brands** (shampoo sachets, face wipes, detergent packs)
- **E-commerce retailers** (courier bags, protective films)
- **Agri-input companies** (seed pouches, fertilizer bags, pesticide sachets)

Consumer preferences for sustainability, convenience, and hygiene continue to shape demand across all segments. The growth of urban households, QSR chains, and rural consumption is further broadening the scope of end-use applications for flexible packaging in India.

4.4 Production Trends



Source - CMIE

The production of polythene, polyester, PVC, and other plastic films in India has exhibited a resilient and adaptive upward trend from FY 2017–18 through FY 2024–25, despite intermittent pressures. Starting at around 856,036 tonnes in FY 2017–18, it climbed to a peak of 910,122 tonnes in FY 2021–22—driven by strong demand in food processing, pharmaceuticals, and personal care, particularly during the post-COVID recovery phase.

Although volumes dipped slightly in FY 2022–23 due to raw material price volatility and inventory adjustments, a synchronized rebound in FY 2024–25 reflects a robust recovery. This upswing is buoyed by accelerated FMCG consumption, accelerated Make-in-India initiatives, and strengthened e-commerce logistics, even as manufacturers adapt to regulatory mandates like Extended Producer Responsibility (EPR). It Continued adoption of high-barrier and multi-layer films in food, dairy, and pharmaceutical packaging, combined with lightweighting trends and sustainability-driven innovations like bio-based films, will underpin long-term production growth. Moreover, supportive regulatory shifts and capacity expansions among key players will further enhance the industry's resilience and forecasting visibility

4.5 WPI of Plastic films & Flexible Packaging: Base area 2011-12

Year	Polypropylene Film	Plastic Film	Polythene Film	Polyester Film (Metalized)	Polyester Film (Non- Metalized)
2011-12	100	100	100	100	100
2012-13	99.8	105.1	105.1	101.5	103.8
2013-14	109.9	113.9	114.6	114.3	119
2014-15	112.7	116.2	123.8	114	114.6
2015-16	101.2	111.8	118.5	111	103.3
2016-17	97.4	110.3	116.2	105.9	96
2017-18	96.3	107.4	125.3	107.6	95.4
2018-19	98.2	111	130.5	117.7	107.9
2019-20	99.5	109.2	125.8	117.5	101.3
2020-21	103.7	113.7	125.5	114.2	96.8
2021-22	128.7	130.4	143.8	126.7	111.1
2022-23	128	134.7	146.7	132.5	114.9
2023-24	116.8	125.1	144.4	123.6	105.7
2024-25	121.3	124.8	145.5	129	109.6

Source - CMIE

The Wholesale Price Index (WPI) for various plastic and adhesive film products reflects dynamic pricing trends across key polymer-based categories and packaging materials over the years. The overall index has demonstrated a clear upward trajectory, signalling sustained increases in input costs, market demand, and value-added applications.

Several segments such as Polythene film and Plastic film have witnessed consistent inflationary movement, reflecting heightened demand from packaging industries and broader usage in food, pharmaceutical, and consumer goods sectors. Polythene film saw its WPI climb from 100 in 2011–12 to 145.5 in 2024–25 (~45% increase), underscoring its rising significance and value elasticity.

Categories like Polypropylene film, Polyester film (metalized), also show notable increases, aligning with global demand for specialty and barrier packaging materials. For example, metalized polyester rose to 129.0—both significant advances from their base levels.

Conversely, Polyester film (non-metalized) has shown more moderate growth—reaching 109.6—possibly due to competitive pricing and substitution by other film types. Its relatively subdued index compared to metalized variants reflects product differentiation and market dynamics. Traditional polymer segments like Polypropylene film have recorded progressive, steady increases (121.3 by 2024–25), pointing to their ubiquitous role in packaging with controlled but consistent cost pressures. Essential and supportive product categories continue to exhibit stable, moderate increases. Plastic film, for instance, rose steadily to 124.8.

Overall, the WPI trends mirror the shifting cost structures and evolving demand landscape in polymer and packaging materials. Differential growth across film types highlights varying levels of value addition: higher-end or metalized films have seen stronger inflation, while bulk commodity films show gradual increases.

4.6 Trade Dynamics

Country wise exports & Imports of Sheets, Film, Foil and Strip of Plastics

Metric	Apr – Mar (Revised Final) FY24	Apr – Mar (Final) FY25	Growth (%)
Exports (US $. Million)	361.18	423.79	17.33%
Imports (US $. Million)	518.34	517.00	-0.26%

Net Trade Deficit: Rs. -93.21 million in FY25

The plastic films, Sheets, Foil and Strip sector exhibited a nuanced performance in FY25. Exports grew by a healthy 17.33%, reflecting stronger penetration in key international markets and improved competitiveness of domestic players. On the other hand, imports registered a slight decline of 0.26%, suggesting a marginal reduction in external dependency, though demand for specialized raw materials and high-grade inputs from global suppliers continues to persist. Despite the positive export momentum, the sector recorded a net trade deficit of $93.21 million, underscoring structural imbalances between domestic production capacities and value-added requirements. The widening gap highlights both an opportunity to enhance local manufacturing capabilities and the need for strategic policies to reduce dependency on imports while sustaining export growth.

Top Export Destinations FY 2025

Major Countries	FY 2024–25(in $ Million)	Market Share (%)
USA	110.03	**25.96%**
South Africa	35.88	**8.47%**
Canada	24.01	**5.67%**
U Arab Emts	20.07	**4.74%**
UK	10.86	**2.56%**
Others	222.94	**52.60%**
Total	423.79	**100.00%**

Top Import Destinations (FY 2025)

Major Countries	FY 2024–25(in $ Million)	Market Share (%)
China	257.24	**49.76%**
USA	49.01	**9.48%**
Turkey	33.06	**6.39%**
Germany	21.21	**4.10%**
Vietnam	19.83	**3.84%**
Others	136.65	**26.43%**
Total	517.00	**100.00%**

Source – Ministry of Commerce and Industry

The plastic films, Sheets, Foil and Strip sector in FY25 reflected a balanced mix of opportunities and challenges in global trade. On the export front, India achieved double-digit growth, with the USA emerging as the dominant market (25.96%), reaffirming strong demand for Indian plastic films across packaging-intensive industries such as FMCG, pharmaceuticals, and industrial applications. Secondary markets like South Africa, Canada, and the UAE also contributed meaningfully,

while the significant share of "Others" (52.60%) highlights a diversified export base and growing penetration into smaller but expanding markets.

On the import side, dependency on China remained substantial, with the country contributing nearly half of total imports (49.76%), underscoring India's reliance on Chinese raw materials and intermediate films. Other key suppliers such as the USA, Turkey, Germany, and Vietnam reflect India's efforts to diversify sourcing, though the concentration risk with China persists.

Overall, the sector's trade pattern indicates resilient export competitiveness alongside a structural import dependency, particularly for specialized grades of plastic films not manufactured domestically. This creates both a challenge and an opportunity—encouraging domestic capacity expansion and technological upgrades could gradually reduce reliance on imports while sustaining export momentum.

Country wise Exports & Imports of Liner Low Density Polyethylene (LLDPE)

LLDPE, a key raw material used in stretch films, shrink wraps, agricultural films, and multilayer flexible packaging**.**

Metric	Apr – Mar (Revised Final) FY24	Apr – Mar (Final) FY25	Growth (%)
Exports (US $. Million)	51.96	65.44	25.94%
Imports (US $. Million)	433.12	207.61	-52.07%

Net Trade Deficit: Rs. -142.17 million in FY25

Top Export Destinations FY 2025

Major Countries	FY 2025(in $ Million)	Market Share (%)
Kenya	21.99	**33.60%**
Bangladesh	7.92	**12.10%**
Tanzania	5.39	**8.23%**
Ghana	3.73	**5.70%**
China	3.65	**5.58%**
Others	22.76	**34.79%**
Total	65.44	**100.00%**

Top Import Destinations (FY 2025)

Major Countries	FY 2025(in $ Million)	Market Share (%)
Saudi Arab	46.25	**22.28%**
U Arab Emts	33.83	**16.29%**
Malaysia	29.75	**14.33%**
Singapore	28.69	**13.82%**
Oman	14.86	**7.16%**
Others	54.23	**26.12%**
Total	207.61	**100.00%**

Source – Ministry of Commerce and Industry

In FY25, India's LLDPE exports were largely directed to African and South Asian markets, led by Kenya (33.60%) and Bangladesh (12.10%), together accounting for nearly half of total shipments. Imports, however, remained concentrated in the Gulf and Southeast Asia, with Saudi Arabia (22.3%), UAE (16.3%), and Malaysia (14.3%) as top suppliers. This reflects a

widening dependence on imported raw materials even as export growth remains geographically concentrated in emerging markets.

5. Market Dynamics

5.1 Growth Drivers

The plastic films packaging industry is witnessing steady growth driven by increasing demand from food and beverages, pharmaceuticals, personal care, and e-commerce sectors. Rising consumption of packaged foods, urbanisation, and changing lifestyles are supporting the adoption of flexible packaging. Additionally, the lightweight nature, cost efficiency, and shelf-life extension properties of plastic films, along with the expansion of organised retail and online commerce, are further driving industry growth.

Market Drivers and Impact Assessment

(All values represent directional impact based on industry estimates and qualitative analysis)

Driver	1–2 Years	3–4 Years	5–7 Years
1. Surge in E-Commerce and Last-Mile Delivery Packaging Demand	**High**	**High**	**Moderate**
2. Rising Demand for Retort Pouches and High-Barrier Films In F&B Packaging	**Moderate**	**High**	**Moderate**
3. Growing Adoption of Sustainable, Mono-Material Films due to EPR and Green Regulations	**Low**	**Moderate**	**High**
4. Expansion In Pharmaceutical and Biologics Flexible Packaging (E.G., Cold-Chain, Blister)	**Moderate**	**High**	**High**
5. Investments in Digital Printing and Smart Packaging for Cosmetics and Branding	**Moderate**	**High**	**High**
6. Urbanization-Driven Shift to Convenience Formats (Stand-Up, Resealable, Easy-Peel)	**Moderate**	**High**	**High**

Detailed Overview

- **Surge in E-Commerce and Last-Mile Delivery Packaging Demand -** The explosive growth of e-commerce has driven high near-term demand for lightweight and durable plastic films used in courier bags, mailers, and protective wraps. While this momentum is expected to continue in the short to medium term, it may plateau over the long run as packaging norms stabilize, and reuse solutions gain traction.
- **Rising Demand for Retort Pouches and High-Barrier Films in F&B Packaging -** The shift toward convenience foods, ready-to-eat meals, and on-the-go consumption is pushing food brands to adopt high-barrier, retortable plastic films. This trend is especially strong in the mid-term, fuelled by urbanization and lifestyle changes, though adoption may stabilize as technology matures.

- **Growing Adoption of Sustainable, Mono-Material Films due to EPR and Green Regulations -** Environmental mandates like EPR are prompting FMCG brands to transition to recyclable, mono-material plastic films. While adoption is currently limited, regulatory pressures and brand sustainability goals are expected to drive strong growth over the medium to long term.
- **Expansion in Pharmaceutical and Biologics Flexible Packaging - Rising** global demand for temperature-sensitive biologics and vaccines is leading to higher consumption of specialized films for blister packs and cold-chain pouches. While currently moderate, this driver is set to strengthen over time as the pharmaceutical sector expands, and product safety regulations tighten.
- **Investments in Digital Printing and Smart Packaging for Cosmetics and Branding -** Brands, especially in cosmetics and personal care, are increasingly adopting digital printing and smart packaging technologies for short-run, customized film packaging. This trend is expected to accelerate, driven by marketing differentiation and rising consumer preference for premium packaging.
- **Urbanization-Driven Shift to Convenience Formats -** Changing lifestyles and a growing urban middle class are fuelling demand for easy-to-use formats such as stand-up pouches, resealable packs, and peel-off films. This trend is gaining traction steadily and is projected to grow further as convenience continues to be a key consumer priority.

5.2 Challenges

The plastic films packaging industry faces several challenges, including volatility in raw material prices such as polyethylene and polypropylene, which directly impacts production costs and margins. Increasing environmental concerns and stringent regulations on single-use plastics are also creating compliance pressures and driving the need for sustainable alternatives. Additionally, intense price competition, dependence on petrochemical-based inputs, and the need for continuous investment in recyclable and eco-friendly technologies pose operational and financial challenges for industry participants.

(All values represent directional impact based on industry estimates and qualitative analysis)

Restraint	1–2 Years	3–4 Years	5–7 Years
1. Regulatory uncertainty in plastic waste and EPR enforcement	**High**	**High**	**Moderate**
2. Volatility in raw material prices (e.g., crude-linked polymers)	**High**	**Moderate**	**Moderate**
3. Capital-intensive nature of recycling and mono-material infrastructure	**High**	**High**	**Moderate**
4. Margin pressures from FMCG price sensitivity and retailer consolidation	**Moderate**	**High**	**High**
5. Lack of uniform collection and segregation systems for flexible waste	**High**	**High**	**Moderate**
6. Dependence on imported barrier resins and specialty films	**Moderate**	**Moderate**	**Low**
7. Limited awareness of sustainable packaging benefits among small brands	**High**	**Moderate**	**Low**
8. Recycling infrastructure gaps, especially for multi-layer flexible formats	**High**	**High**	**Moderate**
9. Technical challenges in developing biodegradable alternatives with equivalent performance	**Moderate**	**High**	**High**
10. Supply chain disruptions due to geopolitical events and trade policy uncertainty	**High**	**Moderate**	**Moderate**

Detailed Overview of Restraints

- **Regulatory Uncertainty in Plastic Waste and EPR Enforcement -** Frequent changes and ambiguity in environmental policies, including the Plastic Waste Management Rules and Extended Producer Responsibility (EPR) mandates, create compliance complexities for packaging manufacturers. Variability in state-level enforcement and lack of clear frameworks for recyclability classifications lead to increased legal and operational risks.

This remains a high-impact restraint in the short to medium term, with some stabilization expected over time.

- **Volatility in Raw Material Prices (Crude-Linked Polymers) -** The Plastic films packaging sector is heavily dependent on petrochemical derivatives such as polyethylene (PE) and polypropylene (PP). Fluctuations in global crude oil prices directly impact raw material costs, squeezing margins—especially for converters with limited pricing power. This is a high-impact challenge in the short term, though companies may mitigate it through strategic sourcing and long-term contracts.
- **Capital-Intensive Nature of Recycling and Mono-Material Infrastructure -** Transitioning to recyclable mono-material packaging and investing in advanced recycling or compostable film production requires significant capital. This presents a major barrier for small and mid-sized manufacturers, particularly in a price-sensitive market. As sustainability regulations tighten, this restraint will continue to exert high impact through the medium term, before infrastructure scales up and costs normalize.
- **Margin Pressures from FMCG Price Sensitivity and Retailer Consolidation -** Large FMCG brands and organized retailers increasingly demand lower unit costs, while expecting higher sustainability, print quality, and innovation in packaging. With limited ability to pass on input cost increases, manufacturers face ongoing margin compression, especially in high-volume, low-margin categories. This challenge is expected to intensify over time.
- **Lack of Uniform Collection and Segregation Systems for Flexible Waste -** The absence of structured municipal and private collection systems for packaging waste hinders India's ability to build a circular economy. Without reliable segregation, even recyclable materials end up in landfills. This systemic constraint is high impact in the short and medium term, limiting EPR compliance and recyclability targets.
- **Dependence on Imported Barrier Resins and Specialty Films** - India currently imports significant volumes of high-barrier films, metallized laminates, and PVDC-coated substrates from countries like China and South Korea. This supply dependence increases vulnerability to trade disruptions, currency fluctuations, and policy barriers. Over time, domestic capacity additions may reduce this risk, making it a moderate-to-low impact in the long term.
- **Limited Awareness of Sustainable Packaging Benefits Among Small Brands -** Many small and regional FMCG or pharma brands continue to prioritize cost over environmental responsibility, delaying the adoption of sustainable packaging formats. Limited customer demand, regulatory enforcement, and awareness contribute to this challenge, which will likely diminish over time as awareness and regulations improve.
- **Recycling Infrastructure Gaps for Multi-Layer Packaging -** The lack of commercial-scale infrastructure for recycling multi-layer packaging—especially those combining plastic, foil, —remains a major hurdle to achieving circularity. While pilots exist, scalable models are limited. This remains a high-impact barrier in the short to medium term, with some progress expected through industry partnerships and government-backed projects.

- **Technical Challenges in Developing Biodegradable Alternatives with Equivalent Performance -** While bio-based and compostable packaging is gaining traction, current materials often lack the mechanical strength, barrier properties, or shelf-life performance of conventional plastics. This limits adoption, particularly in high-barrier applications like snacks, dairy, and pharmaceuticals. Over the long term, R&D may mitigate this gap, but near-term performance trade-offs remain a key restraint.
- **Supply Chain Disruptions Due to Geopolitical and Trade Policy Events -** Trade conflicts, import bans, and logistics bottlenecks (e.g., post-COVID and Russia–Ukraine impacts) continue to pose risks to raw material availability and export logistics. These macro-level uncertainties result in volatile delivery timelines, inventory costs, and procurement risks, especially in an industry highly reliant on imported materials and global clients. This remains a high-impact constraint in the near term with some expected normalization in future years.

6. PESTEL Analysis of the Industry

Factor	Key Insights and Implications
Political	• The Indian government supports local packaging manufacturing through initiatives like Make in India and PLI schemes. • Ban on single-use plastics and other waste rules are pushing companies to make more eco-friendly products. • Import duties on some packaging materials help Indian manufacturers compete against cheaper imports. • Trade deals with countries like UAE and Australia are opening new export opportunities. • Some state-level rules on plastic waste and recycling may differ, adding complexity for manufacturers.
Economic	• Growing sectors like FMCG, e-commerce, and pharma are increasing demand for flexible packaging. • Prices of raw materials like plastic change often, which can affect manufacturing costs. • Small packaging companies benefit from government credit schemes that help them grow. • Currency changes and dependence on imports for special films and inks can impact profits. • Exporters benefit from government incentives like RoDTEP.
Social	• Consumers want safe, easy-to-use, and hygienic packaging, especially for food and personal care items. • There's a trend toward ready-to-eat meals, snacks, and single-use packaging due to busier lifestyles. • Online shopping and home delivery are increasing demand for durable courier bags and pouches. • People, especially in cities, prefer eco-friendly and recyclable packaging. • Packaging design and quality influence brand image and customer trust.
Technological	• New packaging materials like mono-material films and biodegradable plastics are becoming popular. • Technologies like QR codes, digital printing, and smart labels help improve traceability and customer interaction. • Modern factories use automation, robotics, and solventless lamination for better quality and efficiency. • Companies are using ERP software and D2C tools to manage inventory and reach customers directly. • These technologies are important for meeting the expectations of global brands.

Environmental	• New rules and public demand are encouraging companies to use recyclable and sustainable packaging. • Non-recyclable materials like multi-layer laminates face more restrictions. • Big brands want green packaging with low environmental impact. • Companies need to focus on energy saving, reducing waste, and getting eco-certifications to win large contracts. • Reducing the environmental footprint of packaging is now a business priority.
Legal	• Packaging for food and medicine must follow FSSAI, BIS, and CPCB safety standards. • Exporters need to meet international packaging laws like FDA (USA) and EU safety norms. • The Consumer Protection Act requires proper labelling, recyclable symbols, and truthful product claims. • Greenwashing (misleading eco-claims) can lead to penalties. • Companies must also protect their designs, materials, and trademarks to stay competitive.

7. Government Initiatives and Policy Support

The Government of India has introduced various regulatory, infrastructure, and sustainability-focused initiatives that directly or indirectly support the Plastic films & flexible packaging sector. These programs aim to improve domestic manufacturing capabilities, encourage circularity, support MSMEs, and enhance global competitiveness. The following key initiatives are particularly relevant for stakeholders in the packaging value chain:

- **Plastic Waste Management Rules (Amendment), 2022 -** Under the Plastic Waste Management (Amendment) Rules, 2022, the Government of India has implemented a robust Extended Producer Responsibility (EPR) framework specifically targeting flexible plastic packaging—such as films, pouches, and sachets. From FY 2024–25 onwards, all producers, importers, and brand owners must register on the CPCB's centralized EPR portal, adhere to phase-wise recycling and reuse targets for plastic waste, and ensure packaging is clearly labelled with material type and thickness. These regulations significantly benefit the flexible packaging industry. They drive investments in recyclable mono-material films, enhance supply chain traceability through mandatory registration, and ensure compliance with both domestic FMCG requirements and international sustainability norms.
- **Make in India & Atmanirbhar Initiative -** Under the **Make in India** and **Atmanirbhar Bharat** initiatives led by DPIIT, flexible packaging manufacturers are receiving significant government support aimed at boosting domestic manufacturing and reducing import reliance—especially for essential inputs like petrochemicals and film-grade polymers. The PM Gati Shakti National Master Plan, launched in October 2021, is enhancing infrastructure development by improving multimodal connectivity, logistics efficiency, and last-mile delivery through a centralized digital platform.
- **Single-Use Plastic Ban & Minimum Thickness Notification -** Under the Plastic Waste Management (Amendment) Rules, 2021–22, the Ministry of Environment, Forest and Climate Change enforced a phased ban on single-use plastic items—such as cutlery, straws, and films—effective July 1, 2022, and mandated that plastic carry bags be a minimum 120 microns thick by December 31, 2022 to enhance their reusability and recyclability. These regulations eliminate low-quality packaging, promote higher-quality, recyclable substrates, and require mandatory labelling of material and thickness—measures aimed at boosting sustainable innovation, improving plastic sorting across urban local bodies and aligning India's packaging sector with global environmental standards.
- **Anti-Dumping Duties on Polyester and BOPP Films -** India has long protected its domestic flexible packaging film industry through anti-dumping duties on imports of BOPET (polyester) films, particularly from countries like China, India, and Thailand. These

measures help safeguard Indian film manufacturers against undercutting, promote investment in local extrusion capacity, and provide pricing stability essential for flexible packaging converters.

- **National Packaging Policy -** The National Packaging Policy (NPP) is under consideration by the Indian government to address packaging waste. It aims to establish standards for packaging, promote recycling, and encourage the use of eco-friendly materials. Encourage processes to reduce packaging waste by establishing material recovery facilities (MRFs).

8. Technology and Digital Transformation

The plastic films flexible packaging industry in India is undergoing a significant transformation driven by advancements in technology, a growing emphasis on sustainability, and rapidly changing consumer expectations. From smart packaging solutions to digital process integration, these innovations are revolutionizing the industry's manufacturing, functionality, and environmental impact.

1. **Smart Packaging** - Smart packaging technologies are becoming increasingly prevalent in plastic films, incorporating elements such as QR codes, RFID tags, and embedded sensors. These features enable real-time tracking, product authentication, and consumer engagement. In food and pharmaceutical packaging, sensors can monitor freshness and spoilage, enhance quality control and reduce waste.
2. **Digital Printing** - Digital printing is reshaping how plastic film packaging is produced, enabling high-resolution, customizable graphics without the need for traditional plates or cylinders. This allows for shorter production runs, faster time-to-market, and reduced material waste. It is especially valuable for promotional packaging and personalized product offerings.
3. **Automation and Robotics -** Robotics and automated systems are being integrated into plastic film packaging production lines to enhance efficiency, accuracy, and consistency. AI-powered inspection systems can detect defects in film printing or sealing in real-time, significantly improving quality assurance and minimizing rejections.
4. **3D Printing** - 3D printing enables quick prototyping of packaging designs, cutting down on time and costs compared to traditional methods. This technology allows brands to develop tailored solutions while reducing plastic waste.
5. **Sustainability through technology** - As regulatory pressures mount, including India's Plastic Waste Management Rules, technology is playing a pivotal role in sustainability. Companies are innovating with biodegradable and compostable films derived from seaweed, cornstarch, or agricultural waste like rice stubble. Recyclable mono-material films and downgauged multilayer structures are also gaining traction.
6. **Digital Transformation in Sales and Customer Engagement -** The rise of e-commerce and direct-to-consumer models is reshaping how brands approach packaging. Plastic film packaging is now expected to be not only protective but also visually compelling. Digital technologies enable mass customization and personalized designs, catering to consumers seeking unique, limited-edition, or interactive packaging experiences.

9. Competitive Landscape of Plastic Films Packaging Players in India

The Indian Plastic films packaging industry, a vital component of sectors like food, pharmaceuticals, and consumer goods, is undergoing significant transformation. This evolution is propelled by technological advancements, regulatory shifts, and changing consumer preferences, leading to heightened competition and innovation within the sector.

9.1 Key Factors Shaping Competition

- **Infrastructure and Cold-Chain Capabilities -** The increasing demand for temperature-sensitive products like frozen foods, dairy, and pharmaceuticals has highlighted the need for reliable cold-chain infrastructure in the plastic films packaging sector. However, the industry faces gaps such as outdated storage systems, poor last-mile connectivity, and insufficient trained personnel. Government initiatives like the National Logistics Policy and development of Multi-Modal Logistics Parks (MMLPs) aim to strengthen the logistics backbone, improving efficiency and enabling timely delivery of film-based packaging solutions across the country
- **Regulatory Compliance and Licensing -** Plastic films packaging companies must navigate a complex regulatory environment, particularly with the enforcement of the Plastic Waste Management Amendment Rules, 2023. These regulations promote biodegradable, recyclable, and mono-material films, requiring substantial investment in R&D and material innovation. Inconsistencies in state-level policies further challenge unified compliance strategies, making agility and localized adaptation critical to staying compliant and competitive.
- **Manufacturer and Retailer Tie-ups -** Strategic alliances between packaging film producers and FMCG, pharmaceutical, or retail companies have become essential for maintaining stable demand and enhancing product customization. Manufacturers that offer integrated services—ranging from design to distribution—gain a competitive edge through long-term contracts and exclusive product lines, enabling better resource planning and customer retention.
- **Geographic Reach and Network Penetration -** Wider distribution networks and local market presence play a vital role in reducing lead times and logistics costs in the plastic films packaging space. Companies with extensive geographic coverage are better equipped to meet just-in-time delivery models, especially for large-scale clients across multiple sectors. Infrastructure investments under government schemes are further expected to support deeper market penetration.
- **Digital Infrastructure and Technology Adoption -** The rapid adoption of digital tools—such as IoT sensors, real-time tracking systems, and AI-driven quality control—is revolutionizing production and logistics in plastic films packaging. Players investing in automation and

blockchain-based traceability systems can ensure higher product integrity and operational transparency. Additionally, rising e-commerce volumes have led to increased demand for intelligent, tamper-evident packaging film formats.

- **Service Differentiation and Value-Added Offerings - T**o move beyond commoditization, plastic film manufacturers are increasingly offering value-added services like bespoke branding, sustainable material consulting, and streamlined supply chain management. These offerings not only enhance customer satisfaction but also create stronger, loyalty-based partnerships with both upstream (raw material suppliers) and downstream (brand owners, retailers) stakeholders.

In conclusion, the Indian plastic films packaging industry is shaped by a blend of infrastructure development, evolving regulatory norms, digital transformation, and rising expectations for customization and sustainability. Companies that proactively invest in innovation, compliance, and customer-centric services are best positioned to lead in this highly competitive landscape.

9.2 Competitive Strategies

The Indian plastic films packaging industry is witnessing intensifying competition, driven by innovation, environmental mandates, and changing end-user needs. Companies are transitioning from traditional volume-driven models to more agile, tech-enabled, and value-driven strategies. Below is a structured analysis of key competitive approaches adopted by leading players:

1. Product & Market Differentiation - Functional Innovation Brands are offering stand-up pouches, resealable zippers, spouts, microwave- and puncture-proof packaging—meeting consumer demand for "on-the-go" convenience. Advanced UV and digital printing allow small-batch, high-design packaging tailored for brands, especially in food, cosmetics, and healthcare.

2. Sustainability – Led Positioning - Leading players are adopting sustainability-first strategies by developing biodegradable films, recyclable mono-material laminates, and down-gauged film structures. Examples include the use of agri-waste-based materials and integration of 20–30% recycled content in packaging. These efforts align with India's Plastic Waste Management Rules and support brand ESG commitments, providing a strong market differentiator.

3. Scale & Infrastructure Expansion - Companies are adding plants across regions (e.g., UFlex's Dharwad plant, PET chip unit in Panipat) and leveraging Maharashtra's industrial infrastructure to serve diverse sectors. Jindal Poly Films' (JPFL) recent capacity augmentation exemplifies the aggressive scale and infrastructure expansion shaping India's packaging sector.

4. Digital & Smart Packaging Integration - Integration of QR codes, NFC/RFID tags, anti-counterfeit tech not only strengthens consumer engagement, but also improves traceability—especially vital for pharmaceuticals. AI/IoT-supported production lines, robotics, and ERP systems are being implemented in smart manufacturing setups to increase flexibility, reduce downtime, and support small-batch customization.

5. Strategic Collaboration and Acquisition - Partnerships such as Amcor acquiring Phoenix Flexibles and Polymateria teaming with Indian film producers for biodegradable masterbatches showcase strategic scaling. Collaboration with bodies like CCRI-VNIT and Indian Institute of Packaging (IIP) yields sustainable material innovations and high-quality packaging design.

6. Supply chain & Logistics Optimization - Investing in logistics parks, cold/multi-temp chain facilities, and regional hubs to ensure safe distribution across metros and tier-II/III cities, crucial for e-commerce and pharma demand. Down-gauging films, using space-saving packaging, and light-weighting material all contribute to cost-cutting and lower carbon footprint.

7. Regulatory Compliance & Quality Assurance - Players invest to meet India's Plastic Waste Management Amendment Rules (2023), along with state regulations, ensuring traceability and audit readiness. Adherence to FSSAI, pharma-specific packaging guidelines, and certifications that enhances credibility and reduces compliance risk.

8. Value – Added Ecosystem Services - Beyond packaging, vendors provide branding support (design, digital printing), packaging consultancy via IIP, and track/trace solutions leveraging smart packaging technology. Through AR-enabled packaging experiences, QR-based loyalty schemes, and freshness sensors—enhancing brand interaction and awareness.

9.3 Barriers to Entry

The plastic films packaging industry in India presents significant entry challenges due to its capital-intensive infrastructure, regulatory complexity, and high levels of technical and operational expertise. Unlike basic packaging segments, plastic films packaging demands sophisticated machinery, skilled labour, and compliance with stringent environmental and product safety standards. These factors elevate the entry threshold, discouraging smaller or undercapitalized entrants. The key structural and operational barriers include:

- **High Capital & equipment investment -** Establishing production facilities demands heavy investment in advanced lamination, and pouch-making equipment—costs that quickly escalate into several crores. These are typically only within reach of well-funded players, creating a substantial financial barrier for smaller entrants.
- **Economies of Scale -** Larger manufacturers benefit from economies of scale in sourcing raw materials (like polymers), operational efficiency, and fixed cost absorption. Smaller or new players face higher per-unit production costs, making it difficult to offer competitive pricing or absorb margin pressures from volatile raw material prices.
- **Technology and Quality Expertise -** Meeting performance standards—such as barrier protection, heat seal ability, print fidelity—requires in-depth technical know-how. Additionally, integration of emerging technologies like digital printing, smart packaging (QR/NFC/RFID), and automated quality control systems further elevates the technical entry bar.
- **Strict Regulatory & Environmental norms** - Plastic films used in food, pharma, and export markets must meet regulatory standards such as the Plastic Waste Management Amendment Rules, FSSAI norms, and pharma packaging compliance. Adapting to evolving regulations and managing cross-state compliance requires investments in certifications, audits, and regulatory frameworks, which pose substantial barriers for newcomers.
- **Supply Chain & Raw material Challenges -** The plastic films industry is heavily reliant on petrochemical-based inputs, which are subject to global price volatility. Smaller firms often lack the volume leverage to hedge against these fluctuations or negotiate favourable terms. Inconsistent supply of key materials like PE, BOPP, or metallized films further adds procurement risk for new entrants without established vendor relationships.
- **Experience & Human Capital requirements** - Operating high-speed, multi-process packaging lines demands a skilled workforce proficient in handling diverse substrates and machine settings. Achieving quality consistency across lamination, and slitting stages requires trained technicians and robust SOPs. For new entrants, building such a talent pool and operational discipline takes significant time and investment.

- **Fragmented market and intense Competition** - The industry is highly fragmented, with both large-scale producers and numerous regional players. The presence of tier-1 incumbents with economies of scale, and smaller local converters, creates a crowded and competitive landscape. The sheer number of players leads to price-based competition, pressuring margins and limiting room for new entrants to establish premium value.

9.4 Consolidation Trends for Plastic Films Packaging Industry

The Indian plastic films packaging industry, long dominated by a fragmented base of regional converters and raw material suppliers, is now experiencing a marked wave of consolidation. This is especially pronounced in specialty packaging segments where rising sustainability requirements, evolving technology, and regulatory compliance demand greater integration and scale. Several key factors are driving this consolidation, reshaping the industry's competitive landscape and operational dynamics:

- **Strategic Acquisitions by Global Players -** Global packaging giants are actively expanding their footprint in India through strategic acquisitions. Notably, in August 2023, Amcor PLC acquired Phoenix Flexibles, a Gujarat-based manufacturer specializing in flexible packaging for food, home care, and personal care applications.
- **Capacity Scaling through Vertical Integration -** Domestic giants like UFlex are scaling up by integrating upstream capabilities (e.g., polyester chips and BOPET lines in Panipat and Dharwad). This vertical integration improves control over raw material sourcing, cost structure, and product innovation—especially for pharmaceutical and medical packaging.
- **Sustainability and Regulatory Push -** India's Plastic Waste Management Amendment Rules (2023) are driving companies to shift toward recyclable, compostable, or bio-based films. Manufacturers are consolidating or acquiring technology to comply, reduce environmental footprint, and bolster brand reputation.
- **E-commerce & Smart Packaging Momentum -** The rapid growth of e-commerce has increased demand for durable, puncture-resistant, and smart packaging (e.g., NFC labels, tamper-evidence). Local manufacturers are consolidating technical know-how or investing in bolt-on acquisitions to meet rising demand for intelligent packaging solutions.
- **Regional Capacity Consolidation** - Key states—Maharashtra, Gujarat, Karnataka—are focal points for consolidation as firms expand or merge to optimize logistics, reduce lead times, and serve growing industrial clusters in food, pharmaceuticals, and consumer goods.
- **Market Fragmentation & Quality Differentiation -** Despite growth, the Indian market remains fragmented. Consolidation is reducing fragmentation by enabling better quality control, standardized processes, and access to financing for technology upgrades. This shift is crucial for differentiation in high-growth verticals like pharmaceuticals and ready-to-eat foods.
- **Rationalization of the Unorganized Sector -** India's unorganized plastic film packaging segment is shrinking due to formalization policies like GST, rising regulatory compliance, and environmental restrictions. Many smaller players are either exiting the market or being acquired by larger companies. This transition is enabling industry consolidation, leading to more standardized, quality-assured, and traceable packaging solutions.

9.5 Key Industry Players

The following companies have been selected for the competitive landscape as they are comparable based on their product portfolio, market positioning, and distribution strength.

Sabar Flex India Limited

Sabar Flex India Limited is engaged in the manufacturing of flexible packaging materials catering to diverse end-use industries such as food and beverages, pharmaceuticals, FMCG, and industrial products. The company specializes in printed and laminated flexible packaging solutions designed to enhance product protection, shelf appeal, and functionality. Its manufacturing capabilities include advanced printing, lamination, and pouch-making technologies, enabling it to offer customized packaging solutions aligned with evolving customer and regulatory requirements.

- Year of Incorporation: Founded in 2007
- Headquarters: Ahmedabad, Gujarat, India
- Key Products Manufactured: Multilayer laminated rolls printed flexible packaging materials, barrier films, and various types of pouches including centre seal pouches, three-side seal pouches, zipper pouches, and customized flexible packaging formats.

Uma Converter Limited

Uma Converter Limited operates in the flexible packaging segment, providing conversion and printing services for packaging materials primarily used in the food, FMCG, personal care, and Agro-product industries. The company focuses on delivering high-quality packaging solutions with strong emphasis on printing precision, material strength, and shelf-life enhancement. Its integrated operations include printing, lamination, slitting, and pouch conversion, allowing the company to serve a wide range of packaging requirements.

- Year of Incorporation: Founded in 1999
- Headquarters: Ahmedabad, Gujarat, India
- Key Products Manufactured: Printed laminated films, flexible packaging laminates, multilayer films, customized packaging rolls, and converted pouches used for food products, spices, dairy products, and consumer goods.

9.6 Company Positioning – RFBL Flexi Pack Limited

RFBL Flexi Pack Limited, incorporated in 2005, operates as an integrated flexible packaging solutions provider engaged in the manufacturing and trading of printed multilayer flexible packaging materials, primarily plastic film rolls and laminated pouches, under a Business-to-Business (B2B) model.

The company also trades in woven fabric packaging materials, polyester laminated films, and various other plastic films, enabling it to cater to broader packaging requirements beyond its in-house production capacity. Scrap generated during cutting and slitting processes is systematically collected and sold to third-party entities for further processing, supporting cost efficiency and resource optimization. Its manufacturing operations are fully integrated and include gravure printing using engraved cylinders, solvent-based multilayer lamination, slitting, and pouching, allowing the company to deliver customized packaging solutions with required specifications in terms of size, thickness, barrier properties, and design.

The products are engineered to provide durability, moisture resistance, strength, and extended shelf life, making them suitable for demanding packaging applications. Key raw materials such as Cast Polypropylene (CPP) films, Cast Polyethylene (CPE) films, BOPP films, metallized films, laminated films, specialized adhesives, and printing inks are sourced from established domestic suppliers and undergo quality inspection prior to production.

The company serves diverse end-use industries including food (snacks, spices, grains), pharmaceuticals (medical and healthcare products), and home & personal care (detergents and household consumables), reflecting a diversified application base. Strategically located in Himatnagar, Gujarat, near the Rajasthan border, the company benefits from logistical advantages, proximity to raw material sources, and efficient access to western and northern Indian markets. With ISO 9001:2015 certification and a structured quality assurance mechanism covering raw material inspection, in-process checks, and final product testing, the company emphasizes reliability, customization, and repeat customer relationships. Supported by strong revenue and profitability growth and an increasing contribution from its trading segment alongside manufacturing operations, the company is positioning itself for scale expansion through the planned establishment of a new manufacturing facility, which is expected to enhance production capacity, operational automation, efficiency, and geographic market outreach, thereby transitioning it from a regional packaging converter to a scalable and structured organized flexible packaging manufacturer.

9.7 Financial Performance Analysis

The financial performance analysis of RFBL Flexi Pack Limited presents an overview of its operational and profitability trends over FY 2023 to FY 2026 (Till November 2025). The assessment highlights key indicators such as revenue from operations, total income, EBITDA, and profitability margins, reflecting the company's operational efficiency and financial stability.

*Figures are in INR lakhs (*Except for ratios and percentages*)*

Key Indicators (in INR Lakhs)	RFBL Flexi pack Limited			
	FY 2023	FY 2024	FY 2025	FY 2026 (Till November 2025)
Revenue from operations	4685.65	7995.89	13546.06	6966.48
Total Income	4686.48	7996.46	13546.18	6966.48
EBITDA	135.46	854.72	1258.07	598.33
EBITDA Margin	2.89%	10.69%	9.29%	8.59%
PAT	66.95	578.70	832.91	383.72
PAT Margin	1.43%	7.24%	6.15%	5.51%
Current Ratio	1.47	1.62	2.21	2.27
Net worth	388.83	967.53	1800.43	2184.16
Total Debt	229.32	522.69	1887.50	1751.39
Debt Equity Ratio	0.59	0.54	1.05	0.80
ROCE (%)	21.92%	76.17%	46.30%	14.79%
Return on Net worth	21.75%	85.33%	60.18%	19.13%

Source – Restated financials of the Company as provided by the company

Formula Used:

- EBITDA (Earnings Before Interest, Taxes, Depreciation and Amortisation): Total Operating Income - Operating Expenses (excluding Depreciation & Amortisation, Interest, and Taxes)
- EBITDA Margin: (EBITDA/ Total Operating Income) *100
- PAT Margin: (Profit after Tax/Total Income) *100
- Current Ratio: Current Assets /Current Liabilities
- Tangible Net Worth: Share Capital + Reserve & Surplus – Intangible Assets -Deferred Tax Assets – Misc Expenditure not written off – Revaluation Reserves
- Return on Net Worth (RONW): (Profit After Tax /Average Tangible Net Worth) *100
- Total Capital Employed: Fixed Assets + Other Long term assets Net Working Capital

- Return on Capital Employed (ROCE): (Earnings before Interest & Taxes/Average Capital Employed) *100

The Company has exhibited substantial growth in its scale of operations over the period. Revenue from operations increased from INR 4,685.65 lakhs in FY23 to INR 7,995.89 lakhs to INR 13,546.06 lakhs in FY25, with INR 6,966.48 lakhs recorded in FY 26 (till November 2025). This expansion in revenue resulted in a corresponding rise in absolute profitability, with EBITDA increasing from INR 135.46 lakhs in FY23 to INR 1,258.07 lakhs in FY25, while PAT rose from INR 66.95 lakhs in FY23 to INR 832.91 lakhs in FY25. For the period ended November 30, 2025, EBITDA and PAT stood at INR 598.33 lakhs and INR 383.72 lakhs, respectively, reflecting continued profitability at an expanded scale.

Notwithstanding the growth in absolute earnings, profitability margins moderated after FY24. EBITDA margin declined from 10.69% in FY24 to 9.29% in FY25 and further to 8.59% for the period ended November 30, 2025, while PAT margin reduced from 7.24% in FY24 to 6.15% in FY25 and 5.51% in the November 2025 period. The margin compression is primarily attributable to a significant increase in power and fuel expenses driven by higher production volumes and energy-intensive operations.

The Company's balance sheet reflects a phase of expansion and capital deployment. Net worth increased from INR 388.83 lakhs in FY23 to INR 967.53 lakhs in FY24 and further to INR 1,800.43 lakhs in FY25, reaching INR 2,184.16 lakhs as of November 30, 2025. Total debt also rose significantly from INR 229.32 lakhs in FY23 to INR 1,887.50 lakhs in FY25, before moderating to INR 1,751.39 lakhs as of November 30, 2025. Consequently, the debt-equity ratio increased to 1.05 times in FY25 before improving to 0.80 times in the November 2025 period. Liquidity strengthened during this period, with the current ratio improving from 1.47 times in FY23 to 2.21 times in FY25 and 2.27 times as of November 30, 2025, indicating enhanced working capital coverage.

Return ratios moderated after peaking in FY24. ROCE declined from 76.17% in FY24 to 46.30% in FY25 and further to 14.79% for the period ended November 30, 2025, primarily due to the sharp increase in capital employed arising from capacity expansion, higher working capital requirements, and increased borrowings. Similarly, Return on Net Worth adjusted from 85.33% in FY24 to 60.18% in FY25 and 19.13% in the November 2025 period, largely on account of a strengthened equity base following profit retention and capitalization of reserves through bonus share issuance. While PAT grew in absolute terms, it expanded alongside a larger shareholders' fund base, leading to a normalization of equity returns.

Overall, the trends highlight the Company's transition into a higher scale of operations, where ongoing investments position the business for future growth, with return metrics expected to improve as the expanded capacity and capital base are more fully utilized.

9.8 Peer Benchmarking – Financial performance analysis

The peer benchmarking analysis assesses the financial performance of RFBL Flexi Pack Limited in comparison with relevant players in the Plastic Printing packaging industry. For this analysis, RFBL Flexi pack Limited has been benchmarked against Sabar Flex India Limited and Uma Converter Limited.

*Figures are in INR lakhs (*Except for ratios and percentages*)*

Key Indicators	RFBL Flexi Pack Limited		Sabar Flex India Limited		Uma Converter Limited	
	FY 25	FY 26 (Till Nov'2025)	FY 25	FY 26 (Till Sep'2025)	FY 25	FY 26 (Till Sep'2025)
Revenue from operations	13546.06	6966.48	12616.80	2193.01	22754.42	11971.32
Total Income	13546.18	6966.48	12638.15	2193.01	22784.74	11986.20
EBITDA	1258.07	598.33	956.07	80.96	1473.34	834.76
EBITDA Margin	9.29%	8.59%	7.58%	3.69%	6.47%	6.97%
PAT	832.91	383.72	433.50	12.74	270.32	212.94
PAT Margin	6.15%	5.51%	3.43%	0.58%	1.19%	1.78%
Current Ratio	2.21	2.27	2.11	2.42	1.43	1.70
Net worth	1800.43	2184.16	3245.87	3757.90	7513.36	7726.29
Total Debt	1887.50	1751.39	2069.08	2529.17	6741.81	7266.78
Debt Equity Ratio	1.05	0.80	0.64	0.67	0.90	0.94
ROCE (%)	46.30%	14.79%	31.30%	0.83%	13.10%	3.87%
Return on Net Worth (%)	60.18%	19.13%	26.71%	0.68%	7.20%	2.79%

Source: Note – The comparison has been carried out on an annual basis, as November 2025 figures for peer companies were not available. FY2025 financials for peer comparison are based on restated figures for RFBL Flexi pack Limited (as provided by the company), FY25 (Audited Financials) & September 2025 (Unaudited Financials) for Sabar Flex India Limited and Uma Converter Limited (as submitted on NSE).

RFBL Flexi Pack Limited has demonstrated superior financial performance compared to its peers, supported by stronger profitability margins, efficient capital utilisation, and a healthy liquidity position, despite operating at a comparable or smaller scale than its competitors.

In FY 2025, RFBL reported revenue from operations of INR 13,546.06 lakhs, which is higher than Sabar Flex India Limited (INR 12,616.80 lakhs) but lower than Uma Converter Limited

(INR 22,754.42 lakhs). However, despite Uma Converter operating at a significantly larger scale, RFBL has demonstrated substantially better operational efficiency and profitability.

RFBL reported an EBITDA of INR 1,258.07 lakhs, resulting in an EBITDA margin of 9.29%, which is significantly higher than Sabar Flex India Limited's EBITDA margin of 7.58% and Uma Converter Limited's EBITDA margin of 6.47%. This indicates RFBL's superior cost control, operational efficiency, and ability to generate higher operating profits from its revenue base.

At the net profitability level, RFBL reported PAT of INR 832.91 lakhs, which is considerably higher than Sabar Flex India Limited's PAT of INR 433.50 lakhs and Uma Converter Limited's PAT of INR 270.32 lakhs, despite Uma Converter having nearly 1.8 times higher revenue. RFBL's PAT margin of 6.15% is also significantly stronger compared to Sabar Flex India Limited (3.43%) and Uma Converter Limited (1.19%), highlighting RFBL's superior earnings quality and stronger bottom-line performance.

From a liquidity perspective, RFBL maintains a strong financial position with a current ratio of 2.21 times, which is higher than Uma Converter Limited's current ratio of 1.43 times and comparable to Sabar Flex India Limited's current ratio of 2.11 times, indicating RFBL's strong ability to meet its short-term obligations and maintain operational stability.

In terms of leverage, RFBL reported total debt of INR 1,887.50 lakhs with a debt-equity ratio of 1.05 times. While this is higher than Sabar Flex India Limited's debt-equity ratio of 0.64 times, it remains at manageable levels considering RFBL's significantly stronger return profile and efficient utilisation of borrowed funds. Uma Converter Limited reported a debt-equity ratio of 0.90 times, which is also relatively elevated given its comparatively weaker profitability.

Importantly, RFBL significantly outperforms its peers in terms of capital efficiency. The company reported an exceptionally high ROCE of 46.30%, compared to 31.30% for Sabar Flex India Limited and only 13.10% for Uma Converter Limited. Similarly, RFBL reported a Return on Net Worth of 60.18%, which is substantially higher than Sabar Flex India Limited (26.71%) and Uma Converter Limited (7.20%). These strong return ratios demonstrate RFBL's superior operational efficiency, effective capital deployment, and strong value creation for shareholders.

Overall, despite operating at a smaller scale than Uma Converter Limited and similar scale to Sabar Flex India Limited, RFBL Flexi Pack Limited has demonstrated superior operational efficiency, stronger profitability, better liquidity, and significantly higher return ratios, highlighting its strong competitive position and efficient business model within the flexible packaging industry.

9.9 SWOT Analysis

Strengths (Internal / Competitive Advantages)	Weaknesses (Internal / Limitations)
✔ **Experienced Management and Team** — Led by experienced leadership with domain understanding of flexible packaging operations, finance, and compliance, supported by a skilled workforce across production and quality control. ✔ **Owned Manufacturing Facility —** Operates from its owned manufacturing premises in Himatnagar, Gujarat, providing operational stability, cost control, and asset-backed business strength. ✔ **Diversified product range –** Produces flexible pouches, shrink/mulch films, liner bags, PVC/LDPE/HDPE sheets, and printing inks, catering to food, pharma, Agro, and consumer segments ✔ **In-house lamination & ink manufacturing** – Controls print quality and supply chain by producing its own inks, reducing external dependencies. ✔ **Customer-Centric Approach** — Focuses on tailored packaging solutions, repeat business relationships, and responsive service, enabling strong retention in B2B segments.	✘ **Regional market concentration –** Based in Gujarat, with limited presence in other Indian states or overseas markets, increasing exposure to regional demand downturns**.** ✘ **Recycling challenges** due to complex multilayer structures hinder effective end-of-life management. ✘ **Dependent on volatile petrochemical feedstocks** (PE, PP, PET), exposing converters to raw material price shocks.

Opportunities (External / Market Realities)	Threats (External / Sector Challenges)
Export expansion – In-house capabilities and certification can enable entry into Middle East, Africa, and SAARC countries. **Customization demand** – Growing interest in sustainable, resealable films and custom packaging presents upsell potential. **Backward integration** – Potential to integrate lamination, reducing reliance on third-party suppliers. **Rising flexible packaging demand** – Growth in food, pharma, Agro, and e-commerce sectors throughout India supports product expansion. **Automation & Technology Adoption** — Investment in modern machinery can improve margins and production consistency.	**Intense competition –** Faces rivalry from larger, listed film producers (e.g. UFL, Parakh, Rudra), which enjoy deeper pockets and wider reach. **Regulatory and sustainability pressures** – EPR rules and bans on multilayer films may require tech upgrades and potential restructuring of product mix. **Logistics risks –** Concentration in Gujarat makes shipments vulnerable to regional supply chain disruptions. **Raw material volatility –** Prices of LDPE, BOPP, PET, etc., fluctuate with crude oil markets, potentially squeezing margins.

10. Future Outlook

India's plastic film packaging industry has emerged as a vital segment within the broader flexible packaging ecosystem, playing a pivotal role in the preservation, transportation, and aesthetic presentation of products across food and beverages, pharmaceuticals, FMCG, agriculture, and e-commerce.

The market has shown steady growth, with its estimated value increasing from 1.93 million tonnes in FY 2025, indicating consistent demand growth across sectors. As the industry estimates, the Indian plastic film packaging market is projected to reach around 3.81 million tonnes by FY 2035, growing at a CAGR of 7.05% during the forecast period FY 2025–FY 2035.

The future of India's plastic film packaging industry appears robust, shaped by dynamic shifts in consumption, regulation, and innovation. Driving this momentum are several key themes: surging demand from the food and beverage sector, which continues to Favor lightweight, shelf-stable formats; the rapid growth of e-commerce, catalysing demand for durable and tamper-evident packaging; and rising consumer expectations for convenience, hygiene, and product freshness.

Technological advancements will be central to the industry's transformation. High-barrier, multilayer films and smart packaging solutions—including QR codes, RFID, and gas sensors—are expected to see widespread adoption, especially in pharmaceutical and perishable product segments. These innovations are enhancing traceability, shelf life, and user interaction, driving premiumization and functionality in packaging.

Concurrently, sustainability has become a defining imperative. The growing emphasis on bio-based, biodegradable, and compostable films—driven by regulatory bans on single-use plastics, consumer eco-consciousness, and materials innovation (e.g., PLA, PHA, starch blends)—is transforming industry priorities.

Government interventions, such as the Plastic Waste Management Rules and incentives for local packaging start-ups, are actively steering the industry toward circularity.

Yours Faithfully,

Sankhanath Bandyopadhyay
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