McKinsey & Company

Is India Ready for the Biotech Frontline?

Presented at Scale-up Health 2025

September 10, 2025

The Indian life sciences industry is in the fourth stage of its evolution

Stage 1 (pre–1970s)
Import dependency

- Market dominated by innovators largely based on **imports**
- **Limited local players**
- Local **capability building** started
  - Global companies set up production base in India
  - PSUs (HAL, IDPL) and research institutes (e.g., ICMR,) set up to drive local research and production

Stage 2 (1970s–1990s)
Self-sufficiency

- **Strong growth** of local players driven by
  - **Changes in patent law** with shift towards process patents
  - **Strong technical capability** (e.g., process engineering, API manufacturing) and **low-cost position**

Stage 3 (2000s–2010s)
Pharmacy of the world

- **Global expansion** by industry in pharma driven by
  - **Patent cliff** and rising **healthcare costs**
  - **Deep knowledge base** built to differentiate vis-à-vis other low-cost suppliers (e.g., regulatory know-how across markets)
- Strong presence in **other market segments** (e.g., contract manufacturing, contract research)

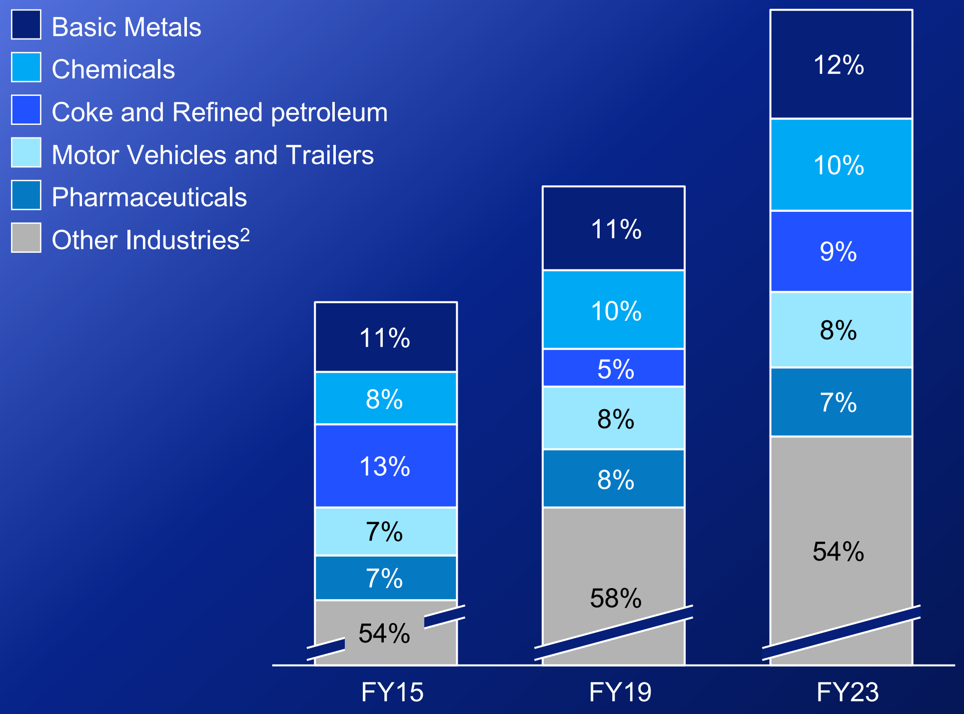
Stage 4 (2020s & onwards)
Innovation journey

- Shifting **focus to innovative R&D**
- **Regulatory harmonization** on the way

Source: IDMA paper "Journey towards Pharma Vision 2020 and beyond", Stakeholder interviews

The sector has made significant contributions to India…

Pharma continues to be a top 5 contributor to India's manufacturing GDP[1]…



Pharma trade surplus contribution (Bn)

FY15	FY19	FY23
~$10	~$12	~$17

2nd highest trade surplus generating sector[3]

… while considerably improving health and economic outcomes for the country

~37% reduction
in disease burden in India (DALY[4], 2000-2020)

~39% reduction
in infant mortality rate (IMR) from 2000 to 2020)

1Bn+
COVID-19 vaccinations administered

~20% increase
in treatment coverage for diabetes in India between 2010 and 2020

2.7Mn+
total jobs created in India[5]

~$19.5Bn
pharma's contribution to trade surplus in FY24

1. India's GDP breakdown: Manufacturing & utilities contribute 18-19%, construction ~8%, agriculture ~13%, and services ~60%
2. Others includes food products, electricity, etc.
3. Second highest trade surplus in the merchandise sector, 2nd only to textile and related products
4. DALY: Disability-Adjusted Life Years
5. As per 2020 estimates from IBEF article

Source: MOSPI, EMA reports, CDSO database, Ministry of Commerce & Industry-GOI, PIB-GOI, Ministry of External Affairs-GOI, IPA, Global Health Observatory-WHO, IBEF, 2025 IPA whitepaper (Shaping the next decade of Indian pharmaceutical manufacturing), IHME, GBD, World Bank life expectancy data, PIB, Lippincott, National survey, WHO – Mortality, MOHFW, PMC

…and gained recognition for the country as the “pharmacy of the world”

India has evolved into a leading supplier of medicines for the world…

~20%
of global generics volumes sourced from India

~60%
of global vaccine volumes supplied by India

~70%
of global Antiretroviral (ARV) HIV medication volumes fulfilled by India

… improving lives and economies in different ways

300Mn+
COVID-19 vaccines supplied globally to 100+ countries during 2021-23

25-30%
of the world’s population consumes medicines from India

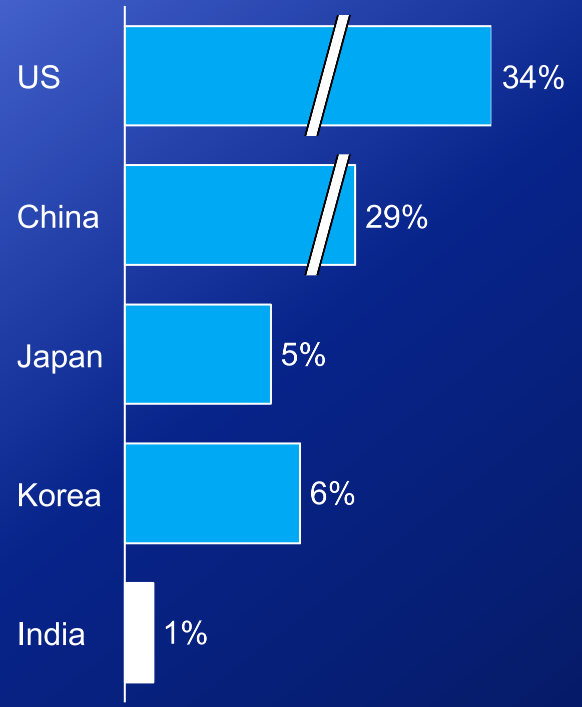
~$1.3Tn
savings to healthcare systems around the world from Indian pharmaceuticals between 2013 and 2022

Source: IBEF, 2025 IPA whitepaper (Shaping the next decade of Indian pharmaceutical manufacturing), IHME, IQVIA report, IQVIA 2019, PIB, India Today

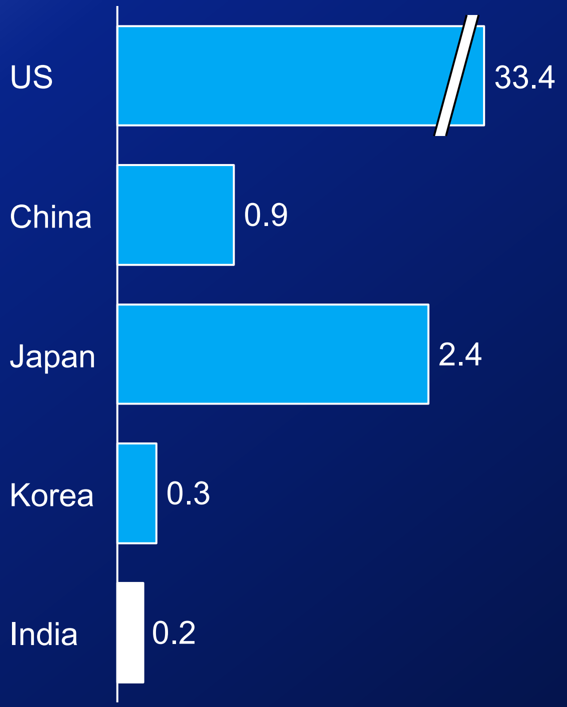
We have now started the journey towards innovation, but our contributions are still in the early stages

India’s contribution to the global innovative pipeline and launches have been modest so far…

Innovative pipelines by originator region[1], in %, 2024



Avg. annual FDA-approved NMEs in last 10 years



… however, multiple trends influence the push towards innovation

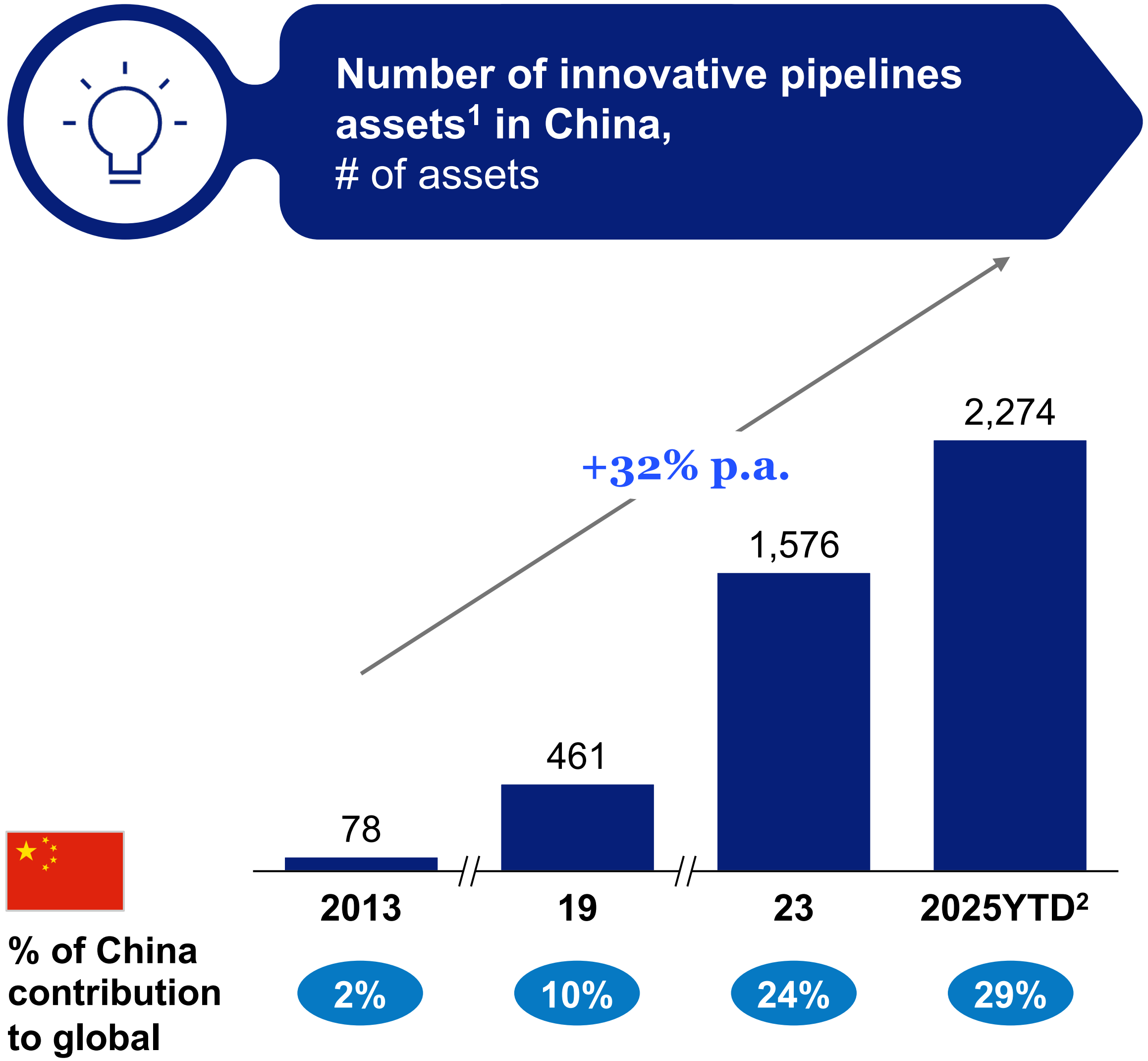
A **India’s disease burden** remains high and unique, encouraging the government to support innovation to improve outcomes and access, while also pushing for self-sufficiency

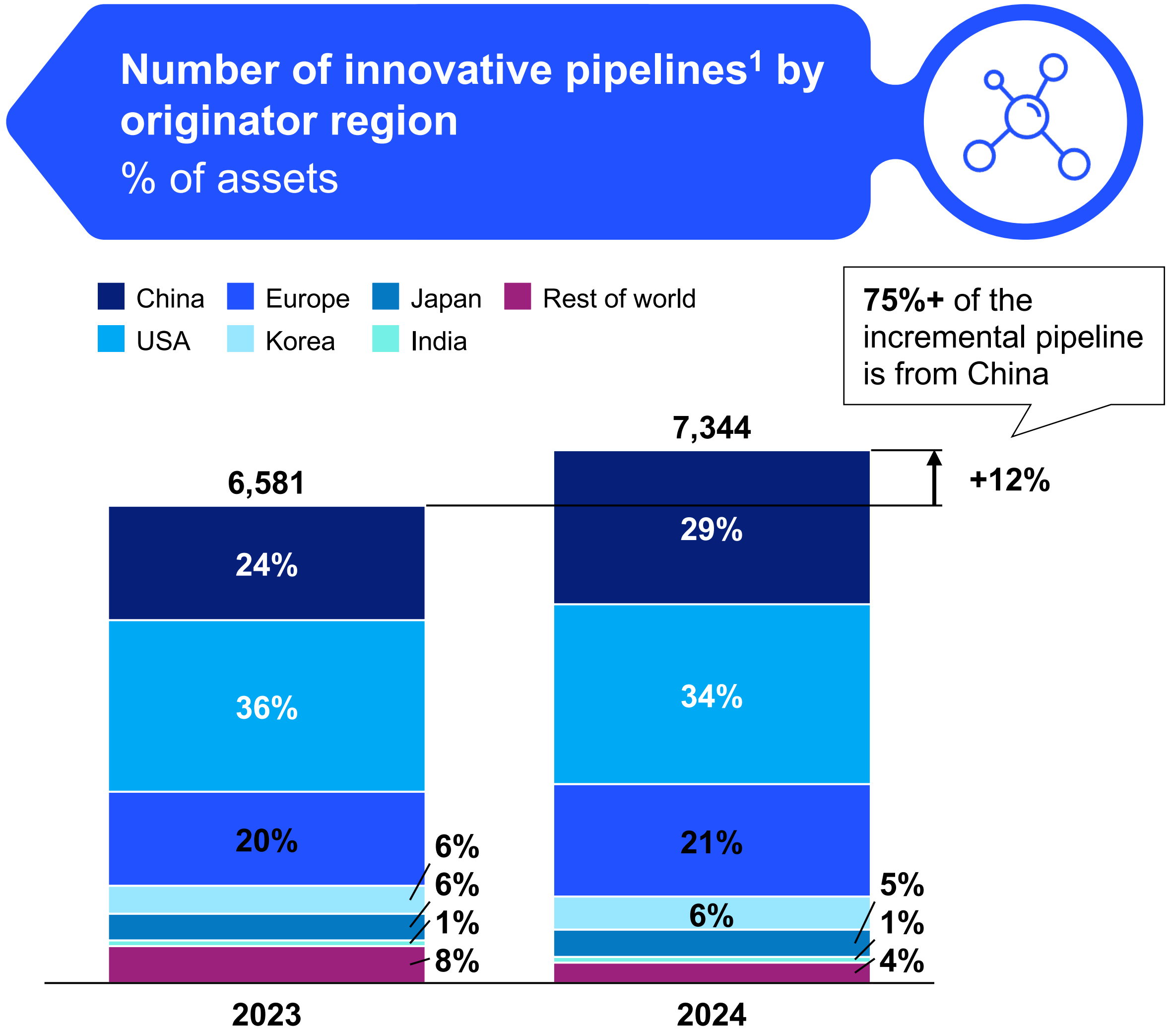
B **Evolving geopolitical landscape**, encouraging multinationals to expand their geographical footprint to countries like India

C **Maturing Indian ecosystem** with the right set of capabilities, infrastructure, and an entrepreneurial industry

Source: Pharmaprojects

China's innovative pipeline[1] has been growing at 32% CAGR, and contributed to 75%+ of global incremental innovative assets in 2024





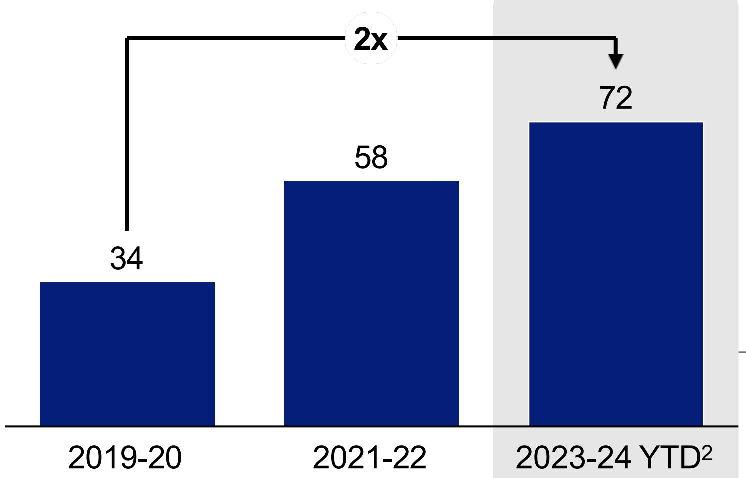
1. Innovative pipelines from clinical phase 1 to pre-registration. Excluding natural products, biosimilar, reformulation, and Gx drugs | 2. As of Feb 28, 2025

Source: Pharmaprojects, Pharmadeals

China is also continuously increasing its contributions to global asset licensing activities, with more diverse TAs and modalities

China tripled its contribution to global asset licensing activities over the last 6 years

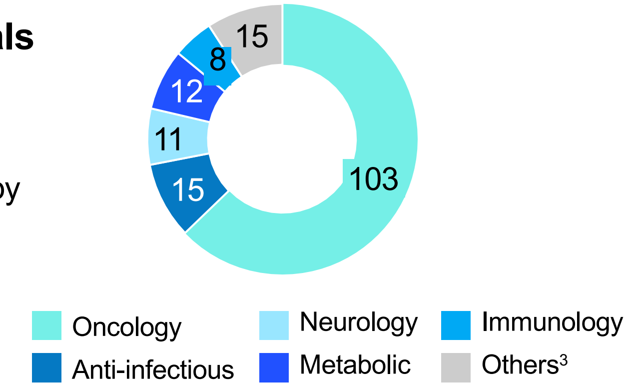
China out-licensing deal[1], #



	2019-20	2021-22	2023-24 YTD[2]
China as % of global out-licensing deals	4%	6%	12%
China in-licensing deal, #	188	185	55

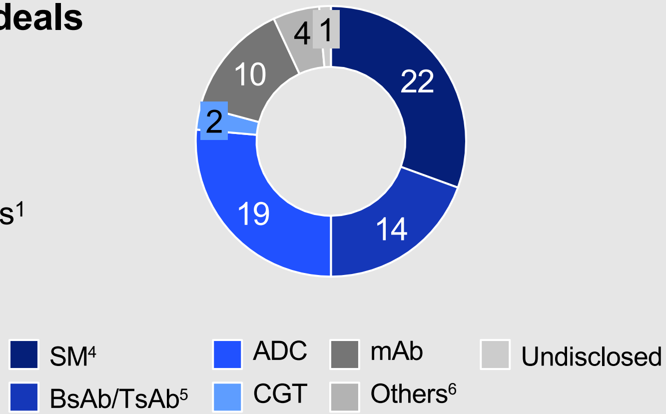
63% **of the total deals from China are in oncology**

China out-licensing deals[1] by TA, # of deals, 2019-2024YTD[2]



46% **of the total deals from China in last 2 years are in ADC and multi-specifics**

China out-licensing deals[1] by modality, # of deals, 2023-2024YTD[2]



1. Innovative asset-based deals (excluding Gx and biosimilar) with licensor being China-originated companies and deal rights territory including USA/EU markets; 2. As of Oct 29, 2024; 3. Incl. muscle-skeletal, respiratory, CV, Ophthalmology, etc.; 4. Small molecule; 5. Incl. 1 deal in 2023 for multiple assets (BsAb & TsAb); 6. Incl. Traditional Chinese Medicine, probiotics, vaccines

Source: GBI; PharmaDeals; McKinsey analysis

Key enablers driving China's innovation engine

Enabler		Status	Key insights
1	**Government Support**	Strong commitment to holistically support innovation with **funding, infrastructure** and **favourable policy**	**12+ biotech innovation hubs** established with government's special funds
2	**Regulatory harmonization**	Continued regulatory reform to **harmonize with global standard**	**100% ICH guidelines implemented** as of 2023
3	**Capital Funding**	Active **VC/PE**, viable public market (**HKEX, STAR**). However currently experiencing first downturn cycle	**22 Bn USD total VC/PE investment in biotech** in 2018-23, ~35X that of Japan **>80 China biotech IPOed**[1] between 2018 and 2024 **~40% average market cap drop** in 2023 from 2021 peak[2]
4	**Talent and Culture**	**Scaled talent pool** with high **entrepreneurship**	Large number of **oversea returnees** attracted back through benefits such as high pay, grants, etc. to **found biotechs** **~220 million people** hold bachelor degrees or associate degrees, up ~75.3% decade over decade **~50K STEM PhD** in 2022, vs. 34k from US
5	**Digital and Tech enablement**	**Significant investment** and global collaboration in AIDD	**~100 AIDD companies** in China since 2013 **2nd largest AIDD market** by pre-IPO funding

1. Only count first IPO listing; incl. listing in SEHK, SHSE, NasdaqGM/GS, SZSE, TPEX
2. Only incl. 61 biotechs listed in Nasdaq, SEHK Chapter 18A, and SHSE STAR Market

McKinsey & Company

Is India Ready for the Biotech Frontline?

Presented at Scale-up Health 2025

September 10, 2025