



PHARMACEUTICALS

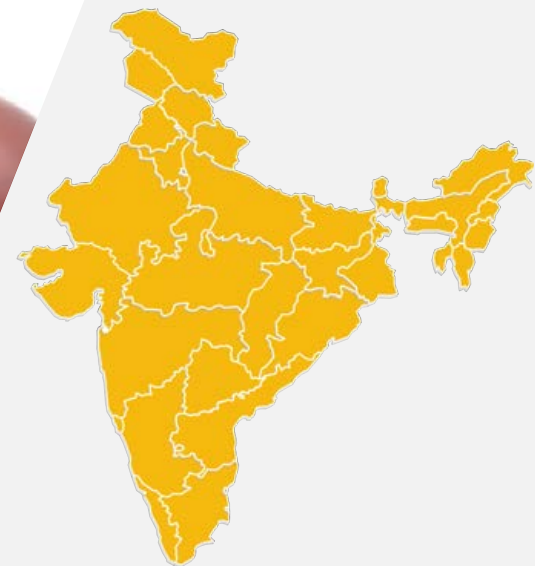
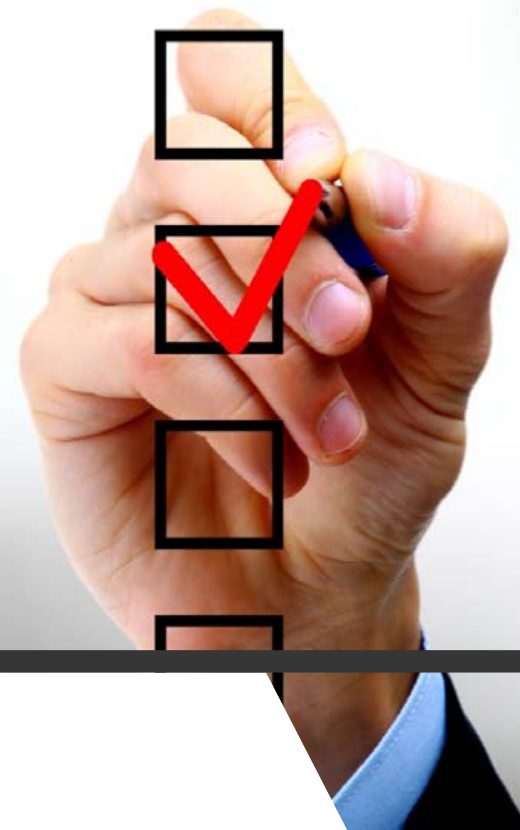
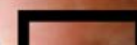
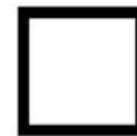
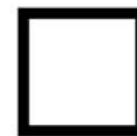


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EXECUTIVE SUMMARY

Leading pharma producer

- Indian pharmaceutical industry supplies over 50 per cent of global demand for various vaccines, 40 per cent of generic demand in the US and 25 per cent of all medicine in UK¹.

One of the highest exports

- India accounts for 20 per cent of global exports in generics. India's pharmaceutical exports stood at US\$ 10.79 billion in FY20 (up to November 2019). The exports are expected to reach US\$ 22 billion by 2020.

Among fastest growing industries

- Indian pharmaceutical sector is expected to grow at a CAGR of 22.4 per cent in the near future and medical device market expected to grow US\$ 55 billion by 2020. India is the second largest contributor of global biotech and pharmaceutical workforce. The pharmaceutical sector was valued at US\$ 33 billion in 2017.

Rapidly growing healthcare sector

- Indian healthcare sector, one of the fastest growing sectors, is expected to cross US\$ 372 billion by 2022.

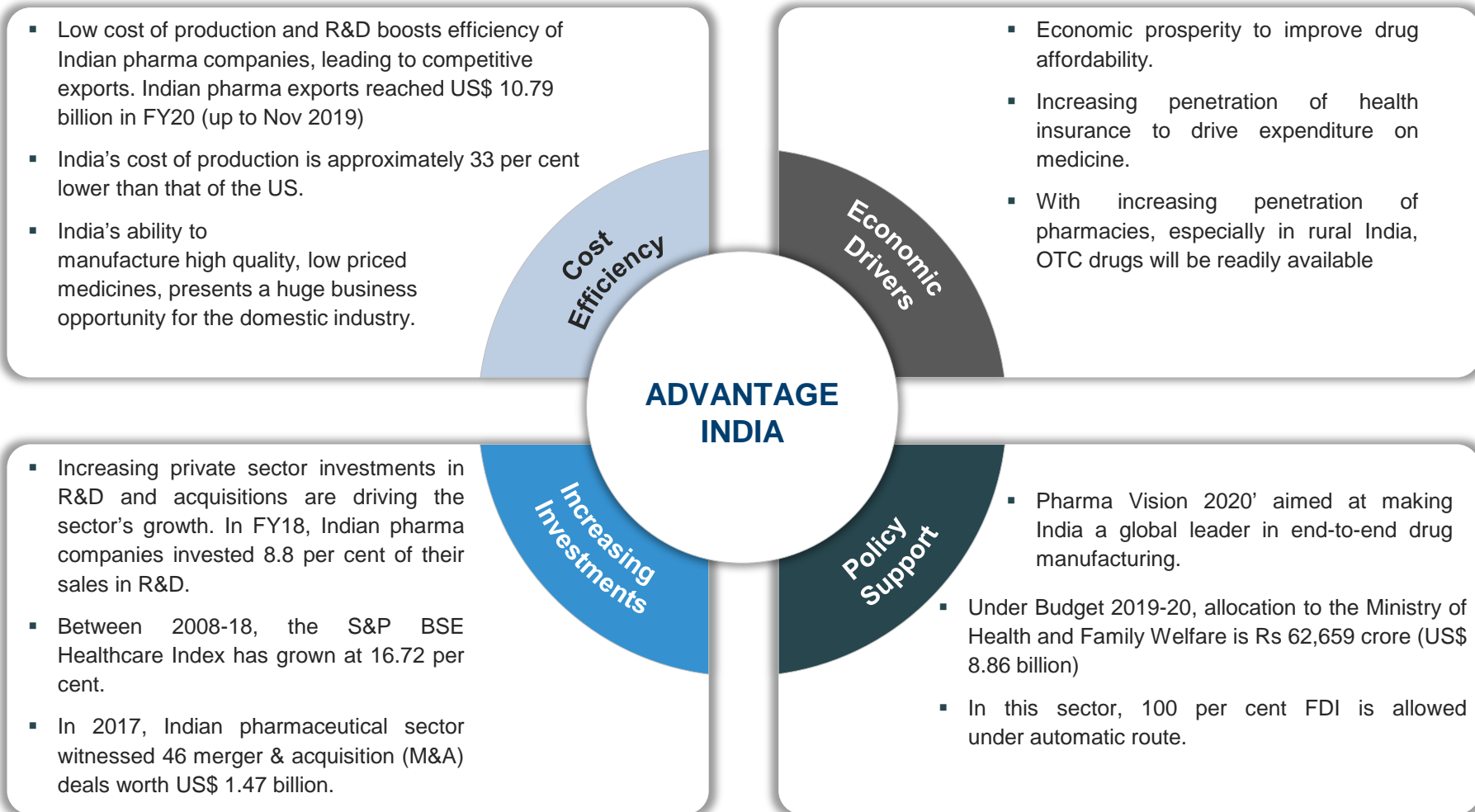
High potential generics market

- The domestic generics market is expected to reach US\$ 27.9 billion by 2020. India's generics market has immense potential for growth. Indian pharma companies received a total of 415 product approvals in 2018 and 73 tentative approvals, where the generic market is expected to reach US\$ 88 billion by 2021.

Robust growth in Biotech industry

- By 2024-25, India's biotech industry is estimated to increase to US\$ 100 billion.

Source: ¹ FICCI - Trends & Opportunities for Indian Pharma 2018, Pharmexcil, ² TechSci Research, Assocham and RNCOS



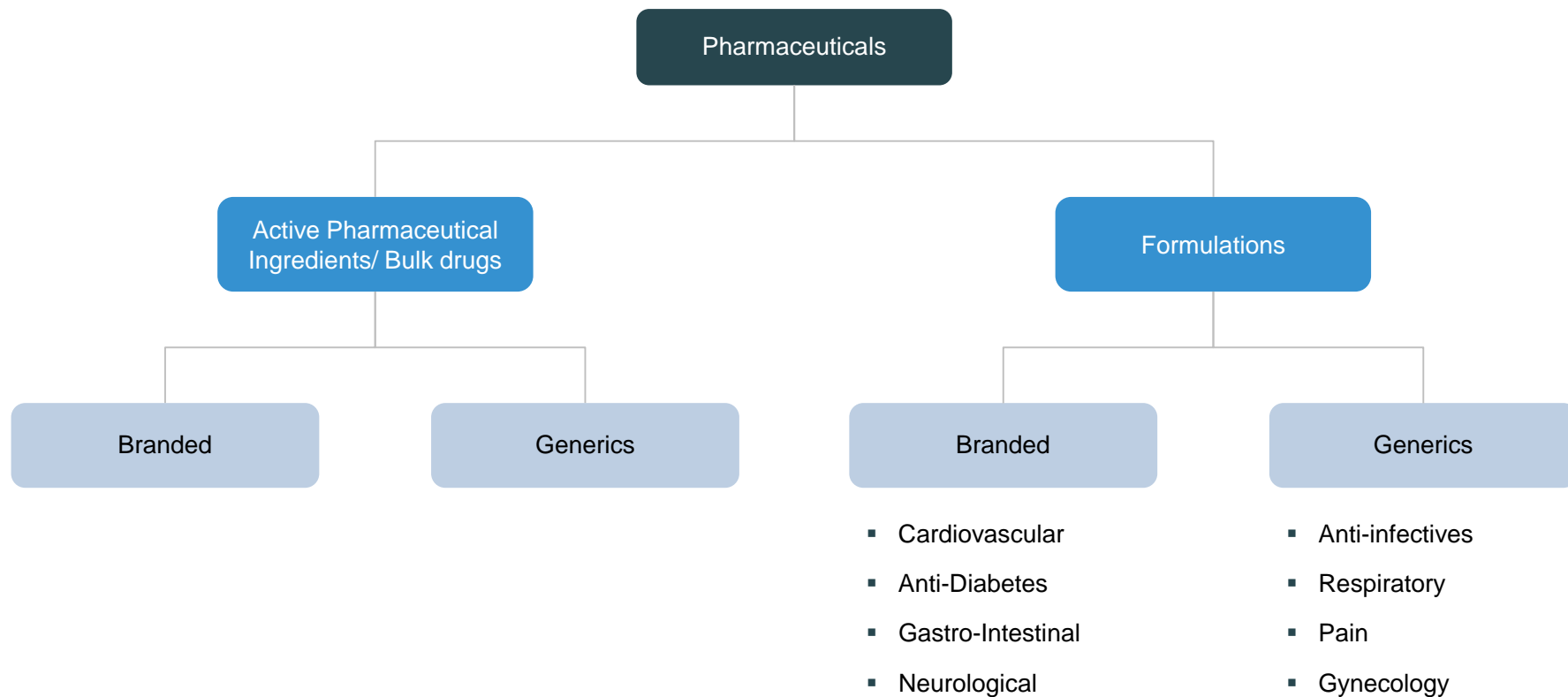
Note: 2020 revenue forecasts are estimates of McKinsey, API - Active Pharmaceutical Ingredients, F – Forecast, OTC - Over-The-Counter

Source: PwC, McKinsey, Pharmaceuticals Exports Promotion Council of India

MARKET OVERVIEW



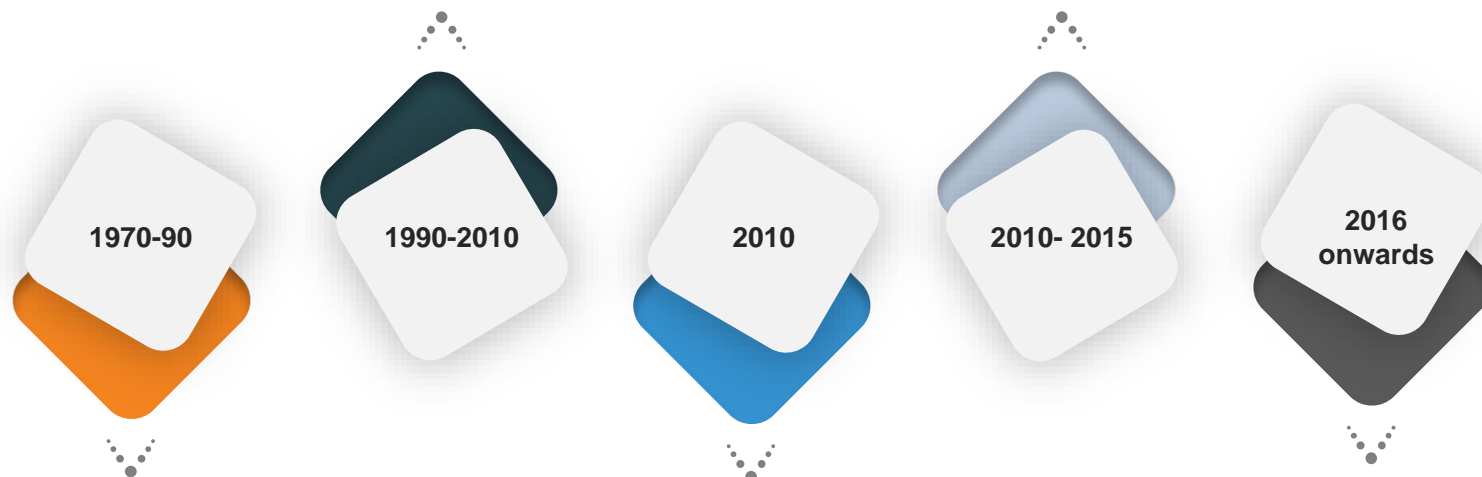
STRUCTURE OF PHARMA SECTOR IN INDIA



Source: Dun and Bradstreet

EVOLUTION OF INDIAN PHARMACEUTICAL SECTOR

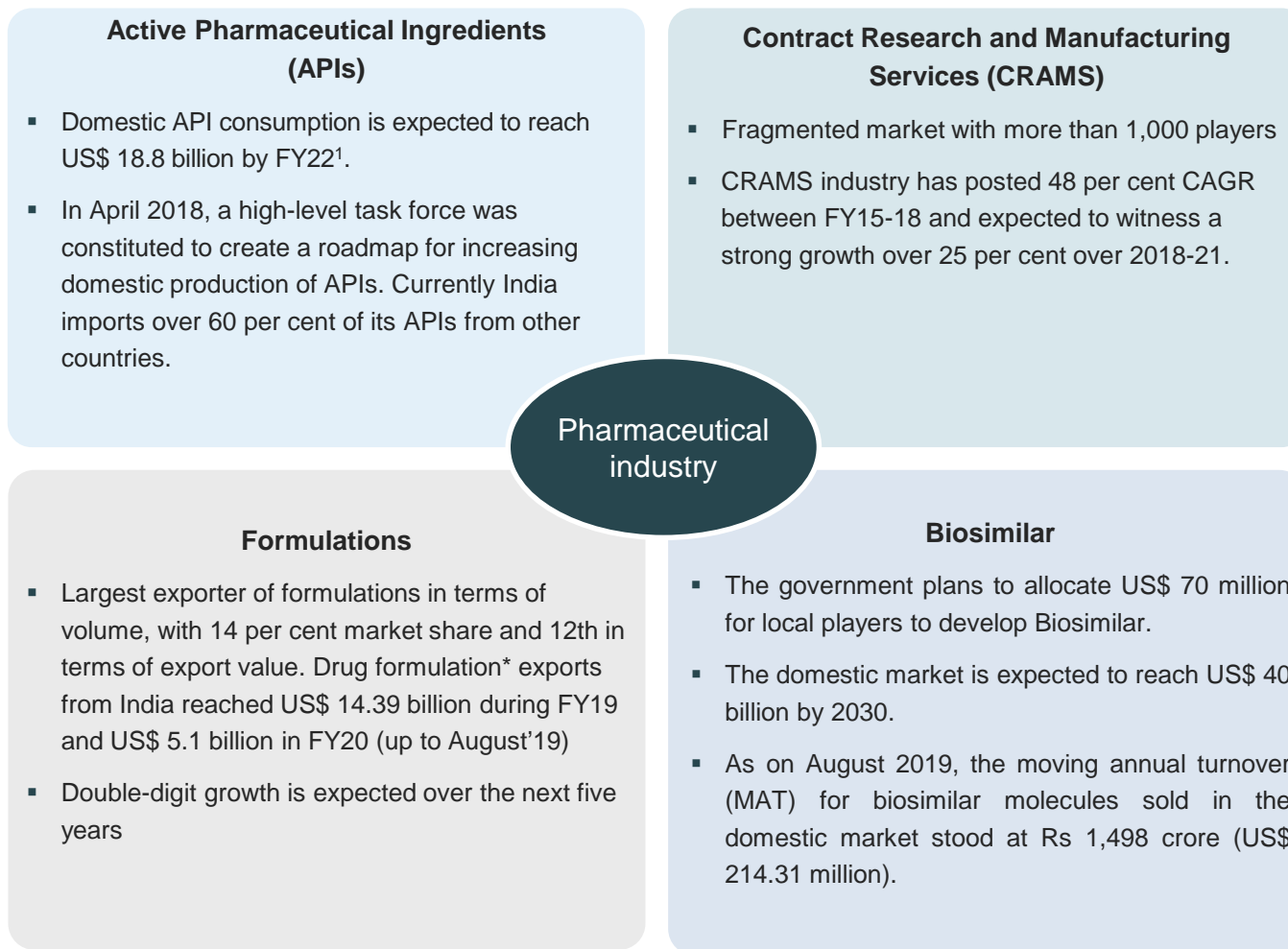
- Liberalised market
- Indian companies increasingly launch operations in foreign countries
- India a major destination for generic drug manufacturing
- Approval of Patents (Amendment) Act 2005, which led to adoption of product patents in India
- 2013: New Drug Pricing Control Order issued by Directorate of Food and Drugs this will reduce the prices of drugs by 80 per cent
- 2014: 100 per cent FDI allowed in medical device industry. The investment will be routed through automatic route
- Leading Indian pharma companies are raising funds aggressively to fund acquisition in domestic as well as international market to increase their product portfolios
- 2015: India has 10,500 manufacturing units and over 3,000 pharma companies
- National Health Policy Draft 2015 to increase expenditure in health care sector
- Patent Act Amendment 2015, it includes amendments in Patent Act 2002



Notes: KAM - Key Account Management, CSO - Contract Sales Organisation

Source: TechSci Research

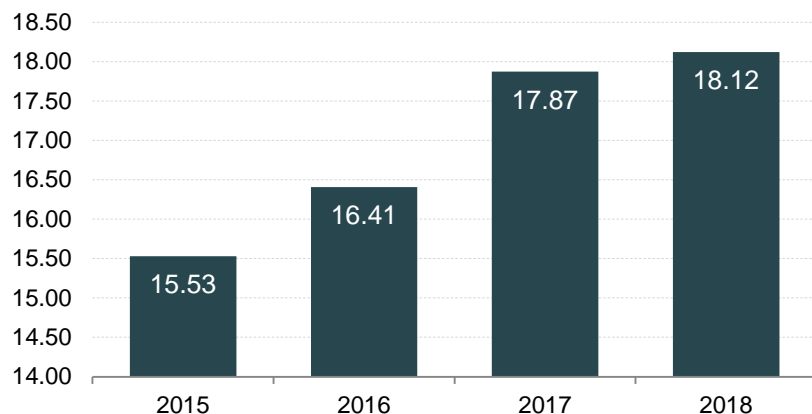
Important Segments in Indian Pharmaceutical Sector



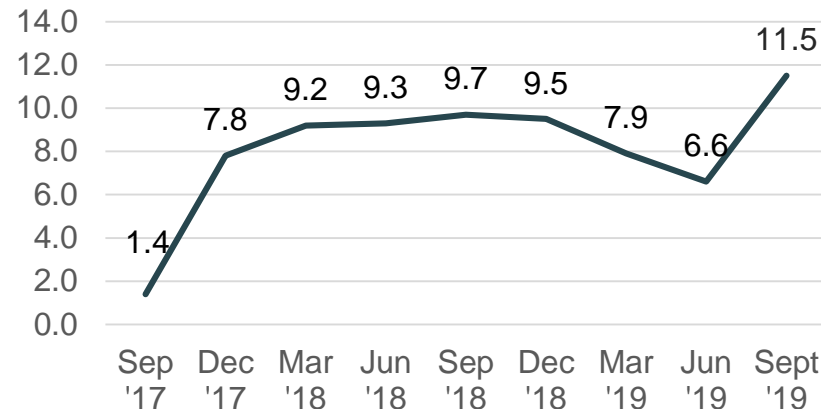
Notes: OTC - Over The Counter, * including biologicals, This is the latest data available. We are not sure when an update will be available.

Source: ¹ RNCOS, BMI, Datamonitor, Kemwell Biopharma, Chemical Pharmaceutical Generic Association, ICRA Report estimates, pharmanewsprwire.com, DGC&S

Annual Turnover of Indian Pharmaceutical Market (US\$ billion)



Quarterly Growth in Indian Pharma Market (%)



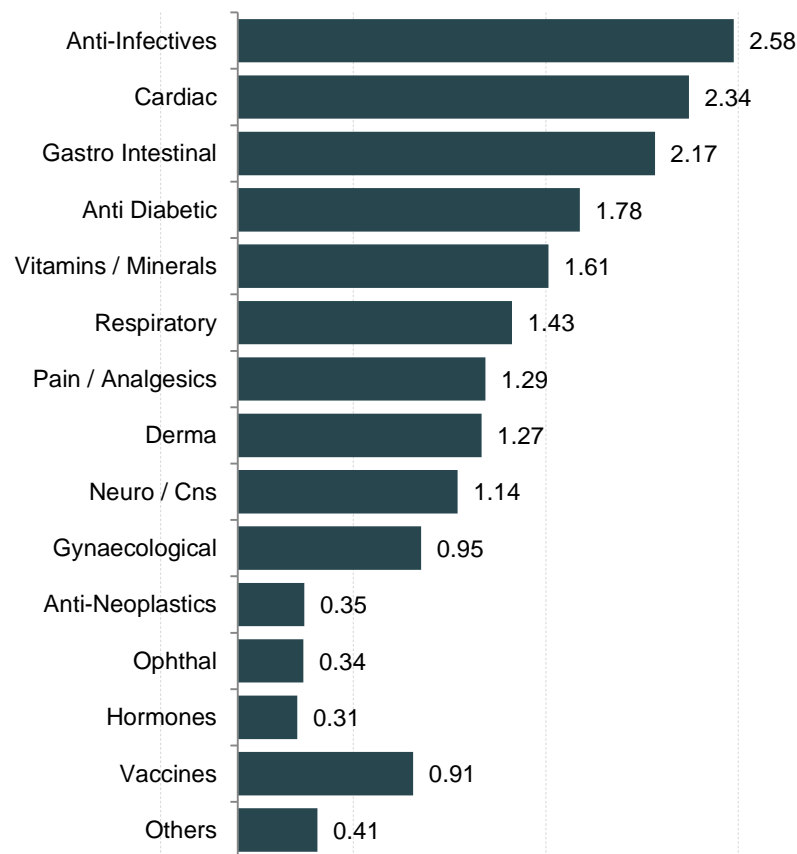
- India's domestic pharmaceutical market turnover reached Rs 129,015 crore (US\$ 18.12 billion) in 2018, growing 9.4 per cent year-on-year (in Rs) from Rs 116,389 crore (US\$ 17.87 billion) in 2017.
- Medicine spending in India is projected to grow 9-12 per cent over the next five years, leading India to become one of the top 10 countries in terms of medicine spending.
- India's cost of production is significantly lower than that of the US and almost half of that of Europe. It gives a competitive edge to India over others.
- The Ayurveda sector in India is expected to reach US\$ 4.4 billion by 2018 end and grow at 16 per cent CAGR till 2025.
- The Indian pharmaceuticals market stood at Rs 1.39 lakh crore (US\$ 19.89 billion) for the year ending November 2019 with Lupin, Mankind Pharma, Intas Pharmaceuticals and Alkem Laboratories leading the growth.
- In November 2019, the Indian pharmaceutical sales grew by 14.5 per cent year-on-year.

Source: Department of Pharmaceuticals, PwC, McKinsey, AIOCD AWACS, IQVIA, CII

COMPOSITION OF INDIAN PHARMA MARKET

- ¹With 70 per cent of market share (in terms of revenues), generic drugs form the largest segment of the Indian pharmaceutical sector. Over the Counter (OTC) medicines and patented drugs constitute 21 per cent and 9 per cent, respectively
- The share of generic drugs is expected to continue increasing; domestic generic drug market is expected to reach US\$ 27.9 billion in 2020
- Due to their competence in generic drugs, growth in this market offers a great opportunity for Indian firms
- Based on moving annual turnover, Anti-Infectives (13.6%), Cardiac (12.4%), Gastro Intestinals (11.5%) had the biggest market share in the Indian pharma market in 2018.
- The highest growth in sales in 2018 were seen in hormones (14.2%), anti diabetic (12.9%), and respiratory (12%).

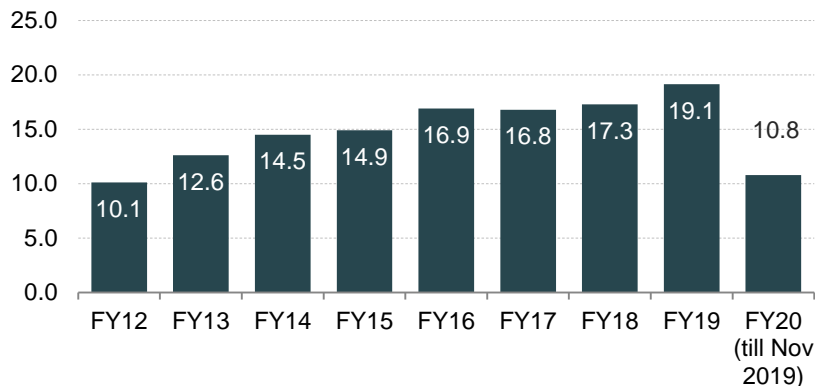
Segment Wise Moving Annual Turnover² 2018 (US\$ billion)



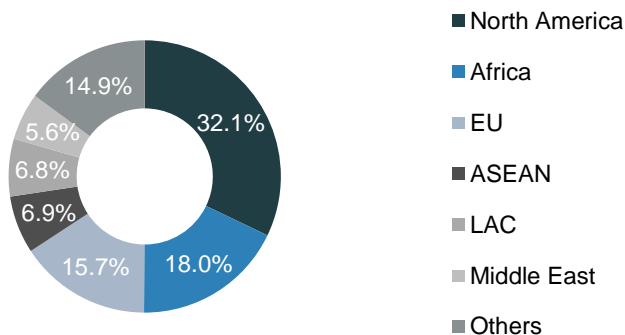
Source: FCCI Indian Pharma Summit, ¹KPMG US-India Dynamic June 2018, ²AIOCD

PHARMA EXPORT TO CONTINUE WITNESSING POSITIVE GROWTH

Pharmaceutical Exports from India(US\$ billion)



Major Export Destinations in India's Pharma Export in FY19 (%)



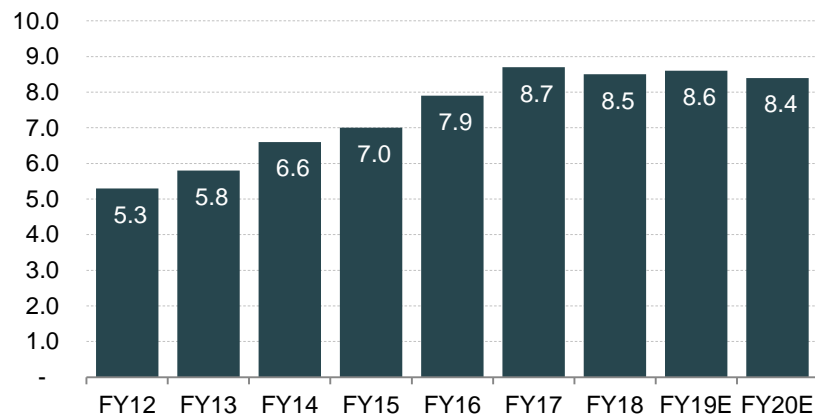
- India is the world's largest provider of generic medicines; the country's generic drugs account for 20 per cent of global generic drug exports (in terms of volumes). Indian drugs are exported to more than 200 countries in the world, with the US as the key market.
- Indian pharma companies are capitalising on export opportunities in regulated and semi-regulated markets.
- Pharmaceutical exports from India, which include bulk drugs, intermediates, drug formulations, biologicals, Ayush & herbal products and surgicals reached US\$ 19.14 billion in FY19 and US\$ 10.8 billion in FY20 (up to November 2019).
- The pharma export is estimated to touch US\$ 22 billion in FY20.
- The biggest export destination for Indian pharma product is the US. In FY19, 32.1 per cent of India's pharma exports were to the North America, followed by 17.96 per cent to Africa and 15.70 per cent to the European Union.

Note: EU – European Union, ASEAN - Association of Southeast Asian Nations, LAC - Latin America and the Caribbean

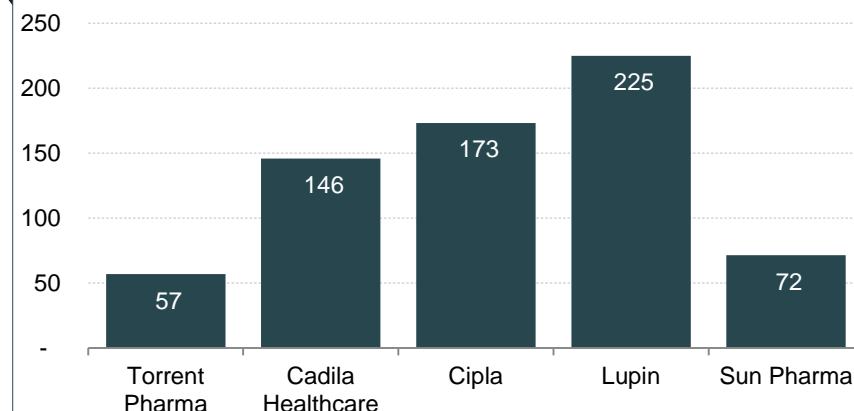
Source: Department of Commerce India, Department of Pharmaceuticals, India Business News, Global Trade Atlas, KPMG US-India Dynamic June 2018, Pharmexcil

R&D SPENDING IN INDIAN PHARMA

R&D Investment by Indian Pharma Companies* (% of sales)



R&D Spending by Top Indian Pharma Companies in FY19 (US\$ million)



- Investment (as % of sales) in research & development by Indian pharma companies* increased from 5.3 per cent in FY12 to 8.5 per cent in FY18
- In FY19, highest expenditure on Research and Development was done by Lupin, followed by Cipla.
- Sun Pharma's R&D plan includes developing more products through expanded R&D team for global markets, focussing on more complex products across multiple dosage forms and investments in speciality pipeline.
- As per Union Budget 2019-20, Rs 1,900 crore (US\$ 269 million) have been set aside for research of the total amount, Rs 62,659 crore (US\$ 8.86 billion) have been allocated for Ministry of Health and Family Welfare.
- Dr Reddy's Laboratories is planning to invest up to US\$ 300 million in research and development (R&D) in FY20.

Note: *Top 10 companies as per research by HDFC Securities,
Source: Company websites, CRISIL Research, HDFC Securities

RECENT TRENDS AND STRATEGIES



NOTABLE TRENDS IN THE INDIAN PHARMACEUTICALS SECTOR

Research and development

- Indian pharma companies spend 8-13 per cent of their total turnover on R&D.
- Expenditure on R&D is likely to increase due to the introduction of product patents; companies need to develop new drugs to boost sales.
- 47 per cent of top pharmaceutical companies in India are now providing tools for clinical decision support and 33 per cent are providing virtual caregiving support.

Increasing exports

- India's pharmaceutical export market is thriving due to strong presence in the generics space
- Pharmaceuticals exports from India stood at US\$ 19.14 billion in FY19 and expected to reach US\$ 22 billion in FY20.

Joint Ventures

- Cipla formed an exclusive partnership with Serum Institute of India to sell vaccines in South Africa
- Six leading pharmaceutical companies have formed an alliance 'LAZOR' to share their best practices, so as to improve efficiency and reduce operating costs
- In July 2019, Strides Pharma Science entered into a joint venture with China's Sihuan Pharmaceutical Holdings Group

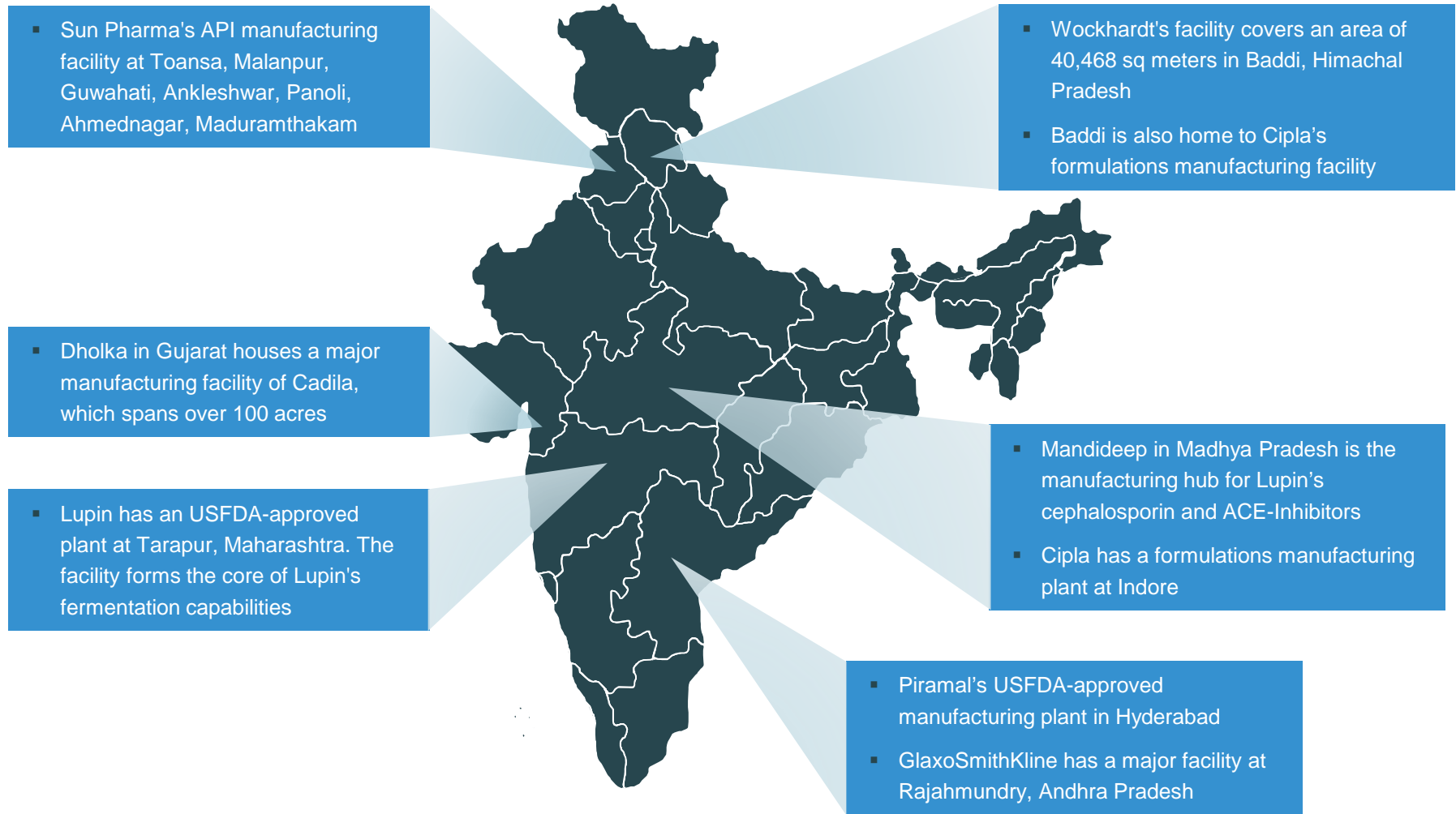
Expansion by Indian players abroad

- Mankind Pharma entered the US market in 2018.
- Sun Pharma arm enters China market by entering in agreement with China Medical System.
- Sun Pharma entered into a global licensing agreement with Hyderabad based CSIR Indian Institute of Chemical Technology.

Notes: R&D - Research and Development,

Source: TechSci Research , Pharmexcil

STATES HOSTING KEY PHARMACEUTICAL VENTURES



Source: Company websites

STRATEGIES ADOPTED

Cost leadership

- Sun Pharma is trying to achieve cost leadership by
 - Vertical Integration: Complex API, which require special skills and technology, are developed and scaled up for both API and dosage forms.

Differentiation

- Players in the sector are trying to strengthen their position in the market and expand themselves by investing heavily in R&D activities, such as:
 - Dr Reddy's acquired OctoPlus N.V, a Netherlands-based company, to get access to the Poly Lactic-Co-Glycolic Acid (PLGA) technology for the formulation of complex injectables.

Focus on new markets

- Lupin is making inroads into new markets such as Latin America, Russia and other East European countries
- Sun Pharma decided to focus on specialty and chronic therapies such as neurology, oncology, dermatology segments.

Mergers and Acquisitions in Biotech

- In 2019, Zydus Wellness Limited acquired Heinz India Private Limited
- In Nov 2018, Cipla's subsidiary in the United States has ordered two steps to acquire Avenue Therapeutics Inc. for around an estimated Rs 1,563 crore (\$215 million).
- In October 2016, Advanced Enzyme Technologies, a biotech based firm in Mumbai signed an agreement with JC Biotech - Active Pharmaceutical Ingredient (API) maker in Hyderabad, to acquire 70 per cent stake in the company.

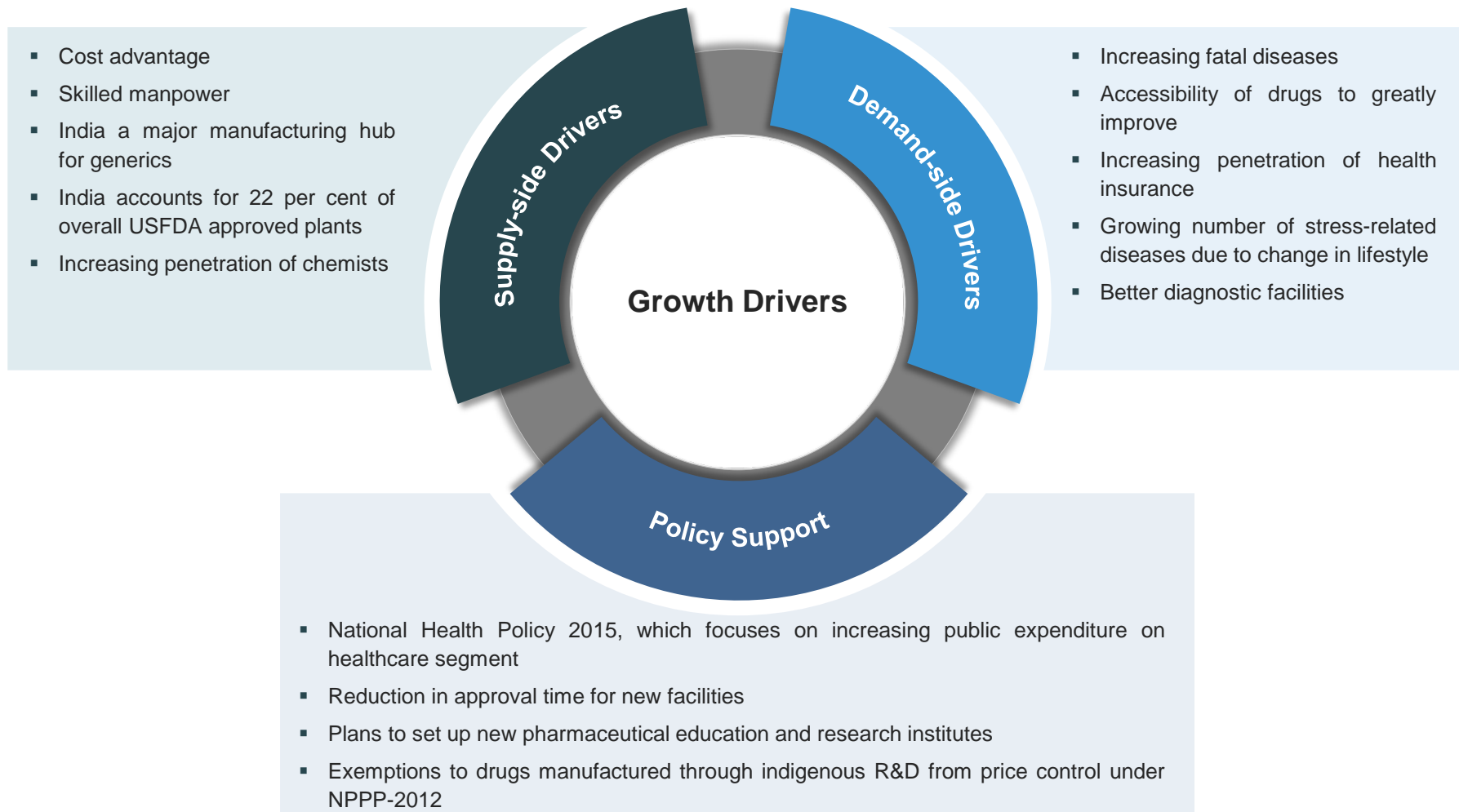
Notes: R&D – Research and Development

Source: Company websites, Ministry of External Affairs, RBI

GROWTH DRIVERS



GROWTH DRIVERS OF INDIAN PHARMA SECTOR



Notes: BPL - Below Poverty Line, USFDA - United States Food and Drug Administration, NPPP-2012--The National Pharmaceutical Pricing Policy, 2012

Source: Pharmaceutical Export Promotion Council

SUPPLY-SIDE DRIVERS OF INDIAN PHARMA SECTOR

Launch of patented drugs

- Following the introduction of product patents, several multinational companies are expected to launch patented drugs in India
- Growth in the number of lifestyle diseases in India could boost the sale of drugs in this segment
- High Court allowing to export patent drugs, to foreign players in the Indian market.

Medical infrastructure

- Pharma companies have increased spending to tap rural markets and develop better medical infrastructure
- Hospitals' market size is expected to increase by US\$ 200 billion by 2024
- Medical devices industry in India has been growing 15.2 per cent annually and was valued at US\$ 5.2 billion in 2018 and is expected to reach US\$ 50 billion by 2025.

Scope in generics market

- India's generic drugs account for 20 per cent of global exports in terms of volume, making it the largest provider of generic medicines globally. The generics drug market accounts for around 70 per cent of the India pharmaceutical industry and it is expected to reach US\$ 27.9 billion by 2020

Over-The-Counter (OTC) drugs

- India's OTC drugs market is estimated to have grown at a CAGR of 16.3 per cent to US\$ 6.6 billion over 2008–16 and is further expected to grow on the account of increased penetration of chemists, especially in rural regions. The India OTC market was accounted at US\$ 4.61 billion in 2018, and is expected to reach US\$ 10.22 billion by 2024.,

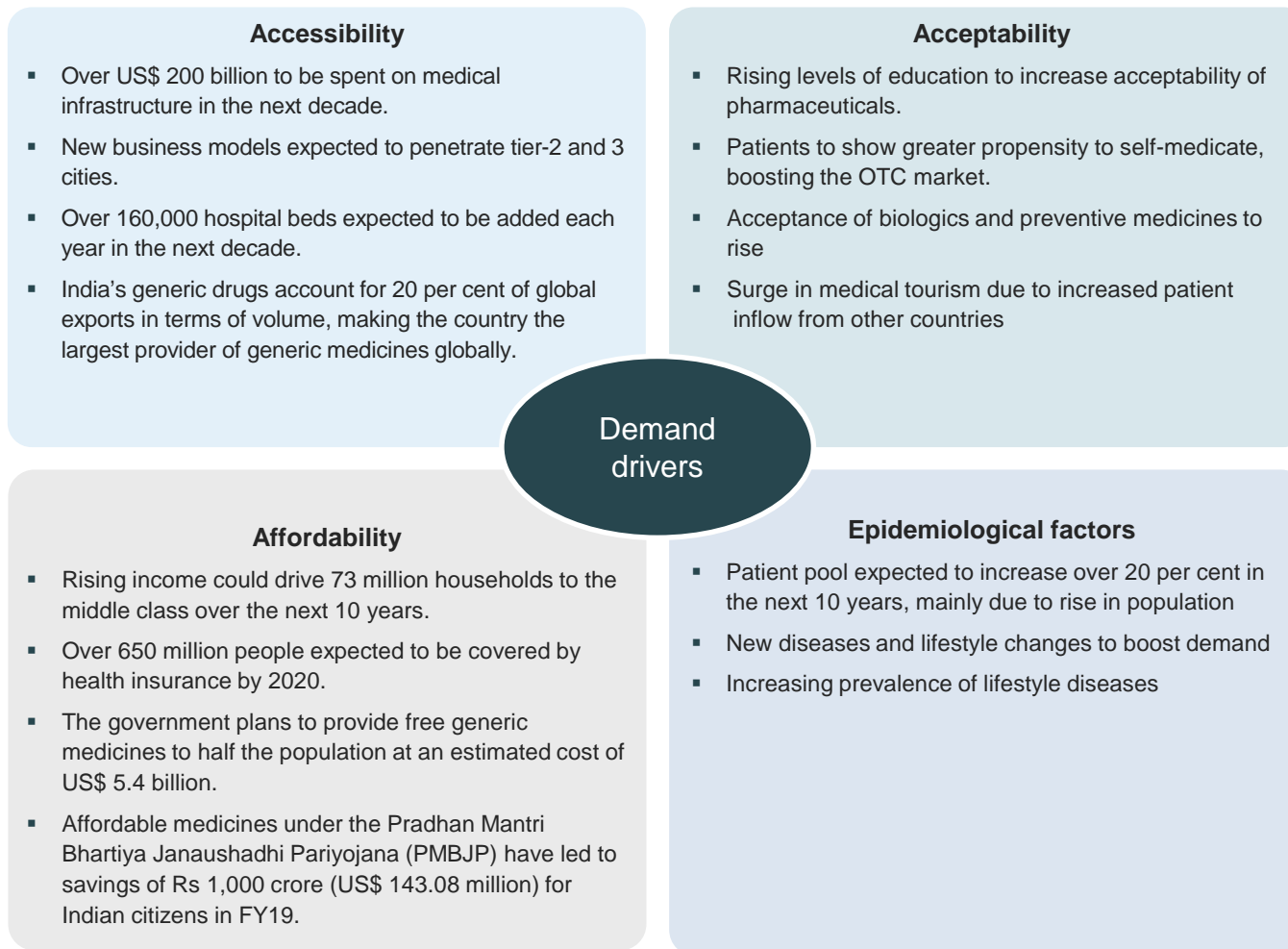
Patent Expiry

- About 120 drugs are expected to go off-patent over the next 10 years; with expected worldwide revenue between US\$ 80 to 250 billion

Notes: CAGR - Compound Annual Growth Rate

Source: BMI, India Biz, Nicholas Hall & Company, IQVIA

DEMAND DRIVERS OF INDIAN PHARMA SECTOR

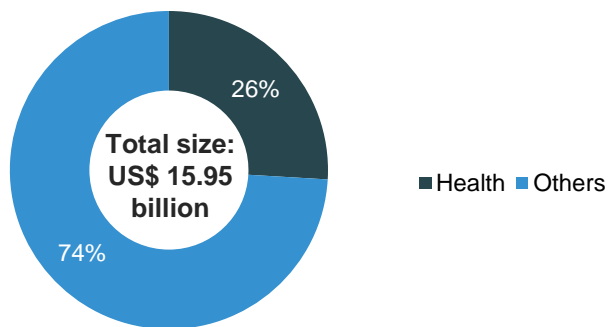


Note: RSBY - Rashtriya Swasthya Bima Yojna

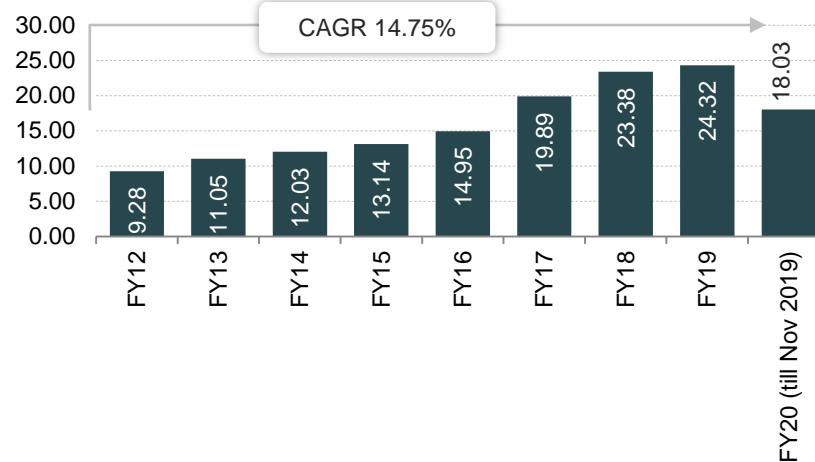
Source: ICRA Report on Indian Pharmaceutical Sector, Pharmaceutical Industry: Developments in India- Deloitte, Mckinsey Pharma Report 2020

GROWING HEALTH INSURANCE

Break-up of non-life insurance market in India (FY20) (up to Oct 2019)



Gross Direct Premiums of Non-Life Insurers (US\$ billion)



- Increasing penetration of non-life insurance including health insurance will drive the expansion of healthcare services and pharmaceutical market in India.
- Adoption of health insurance in the country has been increasing at a fast pace.
- Gross direct premium from health insurance reached Rs 378.97 billion (US\$ 5.88 billion) in FY18 and contributed 25.2 per cent to the gross direct premiums of non-life insurance companies in India. In FY20 (up to Nov 2019), health insurance premiums have increased 15.86 per cent year-on-year to Rs 126,035 crore (US\$ 18.03 billion).
- Another boost to the sector will be the National Health Protection Scheme under Ayushman Bharat, announced in Union Budget 2018-19. The scheme was launched in September 2018.

Note: CAGR is up to FY18

Source: IRDA, General Insurance Council

FAVOURABLE POLICY MEASURES SUPPORT GROWTH (1/2)

Pharma Vision 2020

- Pharma Vision 2020 by the government's Department of Pharmaceuticals aims to make India a major hub for end-to-end drug discovery

Reduction in approval time for new facilities

- Steps taken to reduce approval time for new facilities
- NOC for export licence issued in two weeks compared to 12 weeks earlier

Single-window clearance

- As per NBDS, a proposal has been made to set up the National Biotechnology Regulatory Authority (NBRA) to provide a single-window clearance mechanism for all bio-safety products to create efficiencies & streamline the drug approval process

Support for technology upgrades and FDIs

- Government is planning to relax FDI norms in the pharmaceutical sector
- In March 2017, the government decided to create a digital platform to regulate and track the sale of quality drugs, and it can be used by people living in the country as well as abroad

Pharmaceutical Parks

- Government of India is planning to set up mega bulk drug parks in order to reduce industry's dependency on raw material imports.
- As of October 2018, the Uttar Pradesh Government will set up six pharma parks in the state and has received investment commitments of more than Rs 5,000-6,000 crore (US\$ 712-855 million) for the same.
- In October 2019, Telangana government proposed Hyderabad Pharma City with financial assistance from Central government of Rs 3,418 crore (US\$ 489 million).

National Commission for Homoeopathy (NCH) Bill, 2018

- In December 2018, the Government of India approved the National Commission for Homoeopathy, Bill, 2018 in order to have more transparency in the sector.

FAVOURABLE POLICY MEASURES SUPPORT GROWTH (2/2)

Union Budget 2019-20

- The allocation to the Ministry of Health and Family Welfare has increased by 18 per cent to Rs 62,659 crore (US\$ 8.96 billion).
- The National Health Mission Scheme is the largest government funded healthcare programme, which is expected to benefit 7.31 million poor families in the country by providing a cover of up to Rs 5 lakh (US\$ 7,314.22) per family per year on floater basis in the impaneled hospitals across India.
- The government has allocated Rs 32,995 crore (US\$ 4.71 billion) towards the National Health Mission under which rural and urban people will get benefited.
- Rs 6,400 crore (US\$ 915 million) has been allocated to health insurance scheme Ayushman Bharat – Pradhan Mantri Jan Arogya Yojana (AB-PMJAY).

Biotechnology Industry Research Assistance Council

- BIRAC has been established to promote research & innovation capabilities in India's biotech industry. The council will provide funding to biotech companies for technology & product development.
- BIRAC under Small Business Innovation Research Initiative (SBIRI) scheme supports innovations in biotechnology.

Biotechnology Based Programme for Women

- Programme on application of biotechnology for women was done to provide employment, skill development, awareness generation, health improvement & socio-economic upliftment of the women population

National Biopharma Mission

- The Industry – Academia mission was launched in June 2017 to boost development of biopharmaceuticals in India.

Source: Livemint, Union Budget

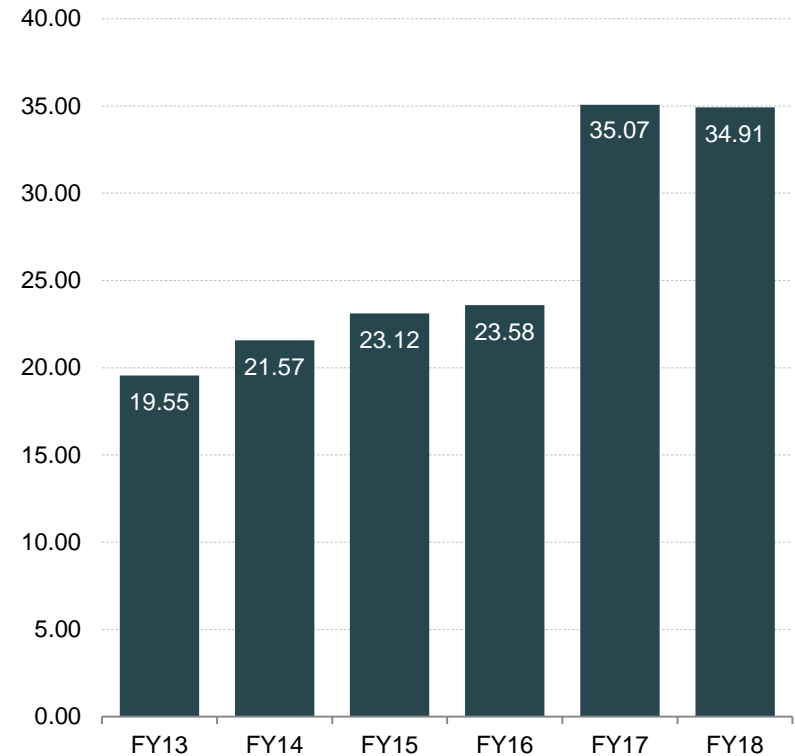
NATIONAL PHARMA POLICY TO BRING GREATER TRANSPARENCY

- In 2017, the Department of Pharmaceuticals released a draft National Pharmaceutical Policy with the following objectives:
 - Make all essential drugs accessible to masses through affordable prices
 - Provide the Indian pharmaceutical sector with a long term stable policy environment
 - Make India self sufficient in end to end domestic drug manufacturing
 - Maintain world class quality for domestic consumption and exports
 - Create a positive environment for research and development in the pharma sector.
- As per the new policy, the Department of Pharmaceuticals will have control over the National List of Essential Medicines (NLEM), which decides the drugs for which the Government of India can control the prices.
- In November 2019, Cabinet approved the extension/renewal of the extant Pharmaceuticals Purchase Policy (PPP) with the same terms and conditions while adding one additional product, namely, Alcoholic Hand Disinfectant (AHD) to the existing list of 103 medicines till the final closure/strategic disinvestment of the Pharma CPSUs.

GOVERNMENT EXPENDITURE IN THE PHARMA SECTOR ON AN UPTREND

- Government expenditure on health increased from Rs 1.26 lakh crore (US\$ 19.55 billion) in FY12 to Rs 2.25 lakh crore (US\$ 34.91 billion) in FY18, implying a CAGR of 12.3 per cent.
- Medical technology park in Vishakhapatnam, Andhra Pradesh has already been set up with an investment of US\$ 183.31 million. States like Himachal Pradesh, Gujarat, Telangana and Maharashtra are showing interest for making investments in these parks.
- German technical services provider TUV Rheinland's Indian subsidiary has partnered with Andhra Pradesh MedTech Zone (AMTZ) to create an infrastructure for Electro-Magnetic Interference (EMI/EMC) at an investment of US\$ 12.64 million over a course of four to five years.
- As per Economic Survey 2018-19, government expenditure (as a percentage of GDP) increased to 1.5 per cent in 2018-19 from 1.2 per cent in 2014-15 for health.

Government Expenditure on Health in India (US\$ billion)



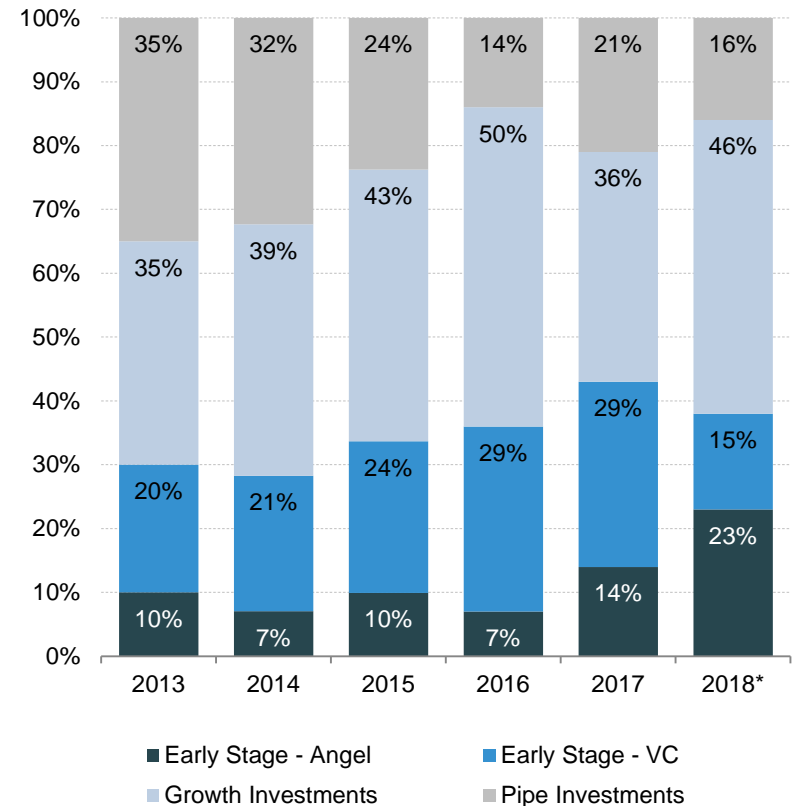
Note: CAGR - Compound Annual Growth Rate,

Source: Business Monitor International, Economic Survey 2017-18

INVESTMENTS, JVs INFUSING SUPERIOR CAPABILITIES IN INDIAN FIRMS

- Indian Drugs & Pharmaceuticals sector has received cumulative FDI worth US\$ 16.27 billion between April 2000 and September 2019.
- In 2017, Indian pharmaceutical sector witnessed 46 merger & acquisition (M&A) deals worth US\$ 1.47 billion.
- Over the last three years, pharmaceuticals segment has accounted for more than 70 per cent of M&A deals.
- Indian pharmaceutical major Cipla Ltd has agreed to buy a 26 per cent stake in AMPSolar Power Systems Pvt Ltd for approximately Rs 12.90 crore (US\$ 1.85 million).
- Healthcare sector witnessed private equity of total US\$ 1.1 billion with 27 deals in first half of 2019.

PE Investments in Indian Pharma by Deal Type



*Note: *up to August 2018*

Source: BMI, Business Standard, EY, IQVIA – Winning the Indian Pharmaceutical Market Nov 2018, DIPP

OPPORTUNITIES



OPPORTUNITIES ABOUND IN CLINICAL TRIALS AND HIGH-END DRUGS

Clinical trials market

- India is among the leaders in the clinical trial market
- Due to a genetically diverse population and availability of skilled doctors, India has the potential to attract huge investments to its clinical trial market
- Number of clinical trials in India increased by 400 per cent to 97 in 2017, compared with 13 trials approved in 2013.
- As of February 2019, India was engaged in 3,618 trials in last one year.

High-end drugs

- Due to increasing population and income levels, demand for high-end drugs is expected to rise
- Growing demand could open up the market for production of high-end drugs in India

Penetration in rural market

- With 70 per cent of India's population residing in rural areas, pharma companies have immense opportunities to tap this market
- Demand for generic medicines in rural markets has seen a sharp growth. Various companies are investing in the distribution network in rural areas

CRAMS

- The Contract Research and Manufacturing Services industry (CRAMS) – estimated at US\$ 17.27 billion in 2017-18, is expected to reach US\$ 20 billion by 2020.
- The market has more than 1,000 players

Source: BMI, Drug Controller General of India

USEFUL INFORMATION



The Indian Pharmaceutical Association

Address: Kalina, Santacruz (E),
Mumbai – 400 098
Phone: 91-22-2667 1072
Fax: 91 22 2667 0744
E-mail: ipacentre@ipapharma.org
www.ipapharma.org

Organisation of Pharmaceutical Producers of India

Address: Peninsula Chambers, Ground Floor,
Ganpatrao Kadam Marg, Lower Parel,
Mumbai – 400 013
Phone: 9122 24918123, 24912486, 66627007
Fax: 9122 24915168
E-mail: indiaoppi@vsnl.com
www.indiaoppi.com

Indian Drug Manufacturers' Association

Address: 102-B, Poonam Chambers, Dr A.B. Road
Worli, Mumbai – 400 018
Phone: 91-22-2494 4624/2497 4308
Fax: 9122 24950723
E-mail: idma1@idmaindia.com
www.idma-assn.org

Bulk Drug Manufacturers Association

Address: C-25, Industrial Estate, Sanath Nagar
Hyderabad – 500018
Phone: 91 40 23703910/23706718
Fax: 91 40 23704804
E-mail: info@bdmai.org
www.bdmai.org

- CRAMS: Contract Research and Manufacturing Services
- API: Active Pharmaceutical Ingredients
- FDI: Foreign Direct Investment
- GOI: Government of India
- INR: Indian Rupee
- US\$: US Dollar
- BPL: Below Poverty Line
- RSBY: Rashtriya Swastha Bima Yojna
- ESIC: Employees State Insurance Corporation
- Wherever applicable, numbers have been rounded off to the nearest whole number

EXCHANGE RATES

Exchange Rates (Fiscal Year)

Year INR	INR Equivalent of one US\$
2004-05	44.95
2005-06	44.28
2006-07	45.29
2007-08	40.24
2008-09	45.91
2009-10	47.42
2010-11	45.58
2011-12	47.95
2012-13	54.45
2013-14	60.50
2014-15	61.15
2015-16	65.46
2016-17	67.09
2017-18	64.45
2018-19	69.89

Exchange Rates (Calendar Year)

Year	INR Equivalent of one US\$
2005	44.11
2006	45.33
2007	41.29
2008	43.42
2009	48.35
2010	45.74
2011	46.67
2012	53.49
2013	58.63
2014	61.03
2015	64.15
2016	67.21
2017	65.12
2018	68.36

Source: Reserve Bank of India, Average for the year

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