



INDIAN MANUFACTURING: OVERVIEW AND PROSPECTS

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EXECUTIVE SUMMARY

India's manufacturing sector is on a high growth trajectory. As targeted by the National Manufacturing Competitiveness Council (NMCC), it is set to contribute 25 per cent to the GDP by 2025 compared to the current share of nearly 16 per cent. Notably, the sector contributed 66 per cent to the nation's exports in FY11 and has been strengthening at a CAGR of 20 per cent in the last five years.

The competitiveness that the sector commands in the global arena is driving its growth. India ranks second in the world as per the 2010 Global Manufacturing Competitiveness Index (GMCI) prepared by the US Council on Competitiveness, and Deloitte. As per the same source, India would maintain its second rank and continue to dominate the global manufacturing sector even after five years. India has set benchmarks in the international market with respect to quality in manufacturing. The country is currently second only to Japan in hosting companies awarded for quality excellence.

The India advantage is favouring growth in the sector as international players such as Hyundai, Nokia, Samsung and Airbus are focussing on setting up manufacturing facilities in the country. Interestingly, India's growth in the manufacturing sector overshadows other BRIC members. This can be associated to the strength in the Indian domestic market.

The fundamentals of the economy have emerged as the driving force for growth in this sector. As per the IMF, Indian economy is forecasted to expand at a CAGR of 9.2 per cent over 2010-15. A McKinsey report projects India's middle class to expand 12 times and urbanisation to increase to 38 per cent from 29 per cent over 2005 -2025. Consequently, the country would emerge as the world's fifth largest consumer market by 2025.

India considers growth in the manufacturing sector important for the overall development of the economy. The government is extending support through training programmes in order to ensure availability of skilled workforce. Also, measures have been introduced to encourage FDI in the sector. As a result, India was ranked second in the world as per the 2012 FDI Confidence Index prepared by A.T. Kearney.

The government has also set up NMCC to increase the sector's global competitiveness through various measures such as setting up of National Manufacturing and Investment Zones (NMIzs). Furthermore, the government is offering various subsidies and incentives for technological upgradation in each sub-sector of the manufacturing activity along with special schemes focussed on micro, small and medium enterprises (MSMEs) for ensuring an overall development of the sector.

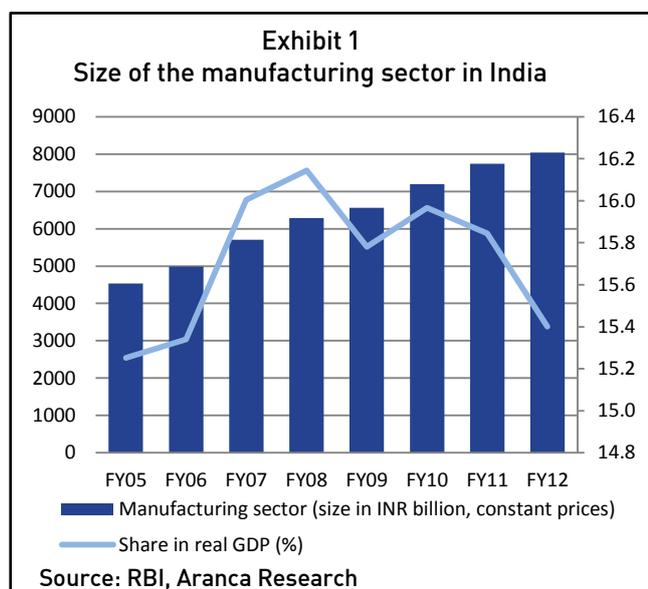
Thus, growth in the domestic market as well as traction from the export-driven demand has enabled India to evolve on the global map as a key manufacturing hub.

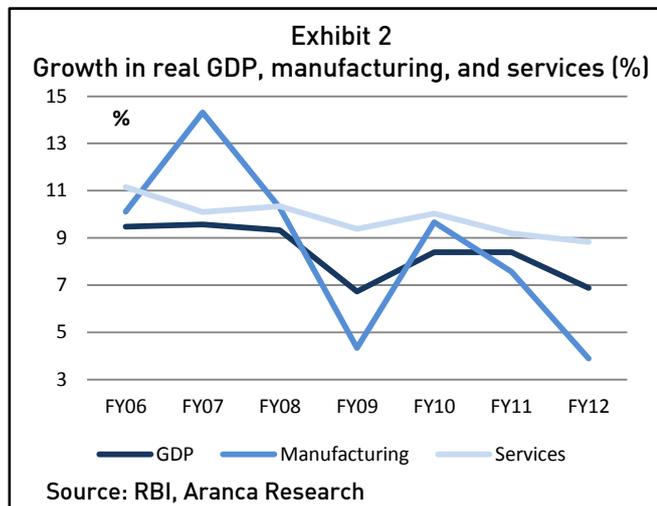
1. INDIAN MANUFACTURING SECTOR: AN OVERVIEW

1.1 Role of manufacturing in the Indian economy

Manufacturing holds a key position in the Indian economy, accounting for nearly 16 per cent of real GDP in FY12 and employing about 12.0 per cent of India's labour force. Growth in the sector has been matching the strong pace in overall GDP growth over the past few years. For example, while real GDP expanded at a CAGR of 8.4 per cent over FY05-FY12, growth in the manufacturing sector was marginally higher at around 8.5 per cent over the same period. Consequently, its share in the economy has marginally increased during this time – to 15.4 per cent from 15.3 per cent. Growth however has remained below that of services, an issue that has not escaped the attention of policy makers in the country.

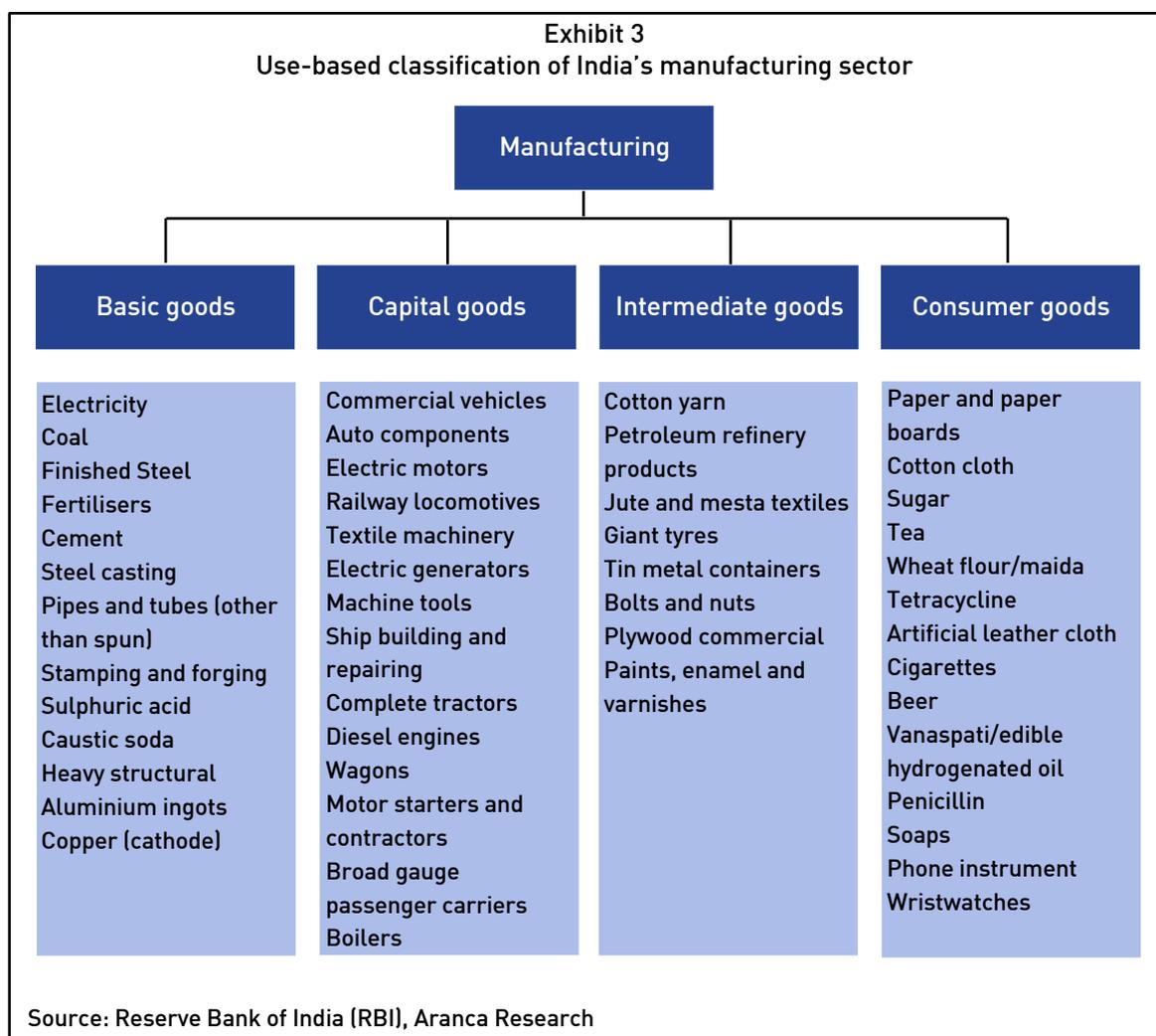
Strong growth has been accompanied by a change in the nature of the sector – evolving from a public sector dominated set-up to a more private enterprise-driven one with global ambitions. In fact, according to UNIDO, India (with the exception of China) is currently the largest producer of textiles, chemical products, pharmaceuticals, basic metals, general machinery and equipment, and electrical machinery. In the coming year, the sector's importance to the domestic and global economy is set to increase even further as a combination of supply-side advantages, policy initiatives, and private sector efforts set India on the path to a global manufacturing hub.





1.2 The sub-sectors that stand out in India's manufacturing sector

Among sub-sectors in manufacturing, the top five are food products, basic metals, rubber and petrochemicals, chemicals, and electrical machinery. Together they account for over 66.0 per cent of total revenues in manufacturing. However, these verticals rely primarily on domestic demand for a major part of their revenues.



1.3 Manufacturing sector's recent growth spurt: clues from IIP

Manufacturing accounts for a large chunk of Indian industry, a fact borne out by the sector's 75.5 per cent share in the Index of Industrial Production (IIP). With CAGR of 8.7 per cent during FY05-FY12 (FY 12 includes data from April 2011 to Feb 12), the manufacturing sector helped the overall industrial sector get over low growth in the other two sub-segments of IIP, Mining and Quarrying (14.2 weight age in IIP) and Electricity (10.3 weightage in IIP) witnessed CAGR of 3.4 per cent and 5.8 per cent respectively. On an even more encouraging note, the manufacturing sector has strengthened in FY11 compared to the previous fiscal – an analysis of 121 sub-sectors by the Confederation of Indian Industry (CII) reveals that only 5 of them recorded declines in FY11 compared to 25 in FY10. At the same time, key sub-sectors like machine tools, ball and roller bearings, textile machinery, and utility vehicles recorded either excellent (above 20 per cent) or high (10-20 per cent) growth, thereby adding to value creation in manufacturing.

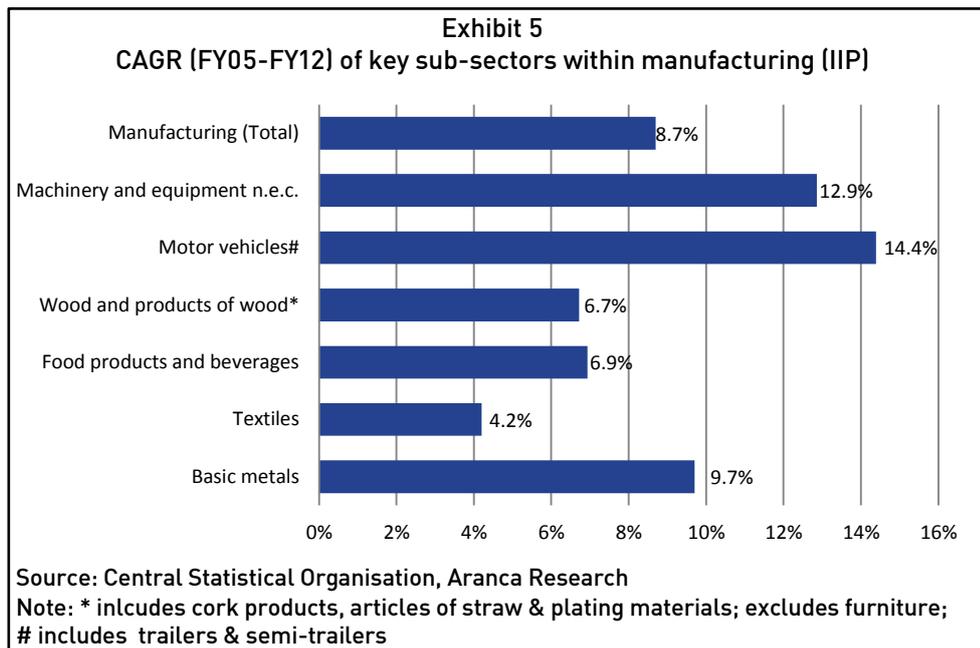
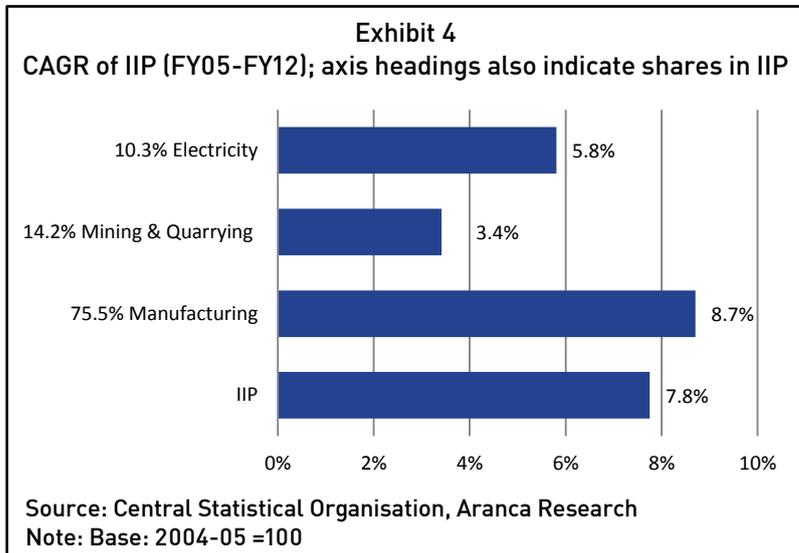
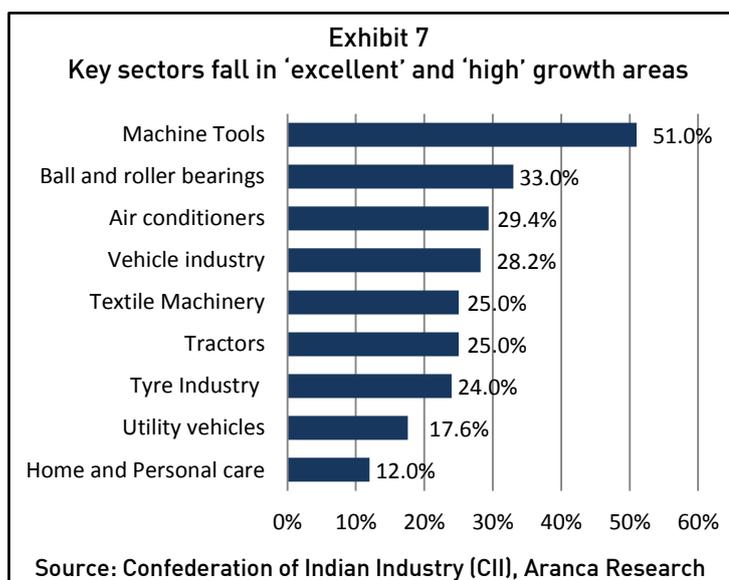


Exhibit 6
Growth trend of 121 manufacturing sub-sectors

Growth	FY11	FY10
Excellent (>20%)	(41)	(34)
High (10-20%)	(26)	(30)
Moderate (0-10%)	(49)	(23)
Negative (<0%)	(5)	(25)

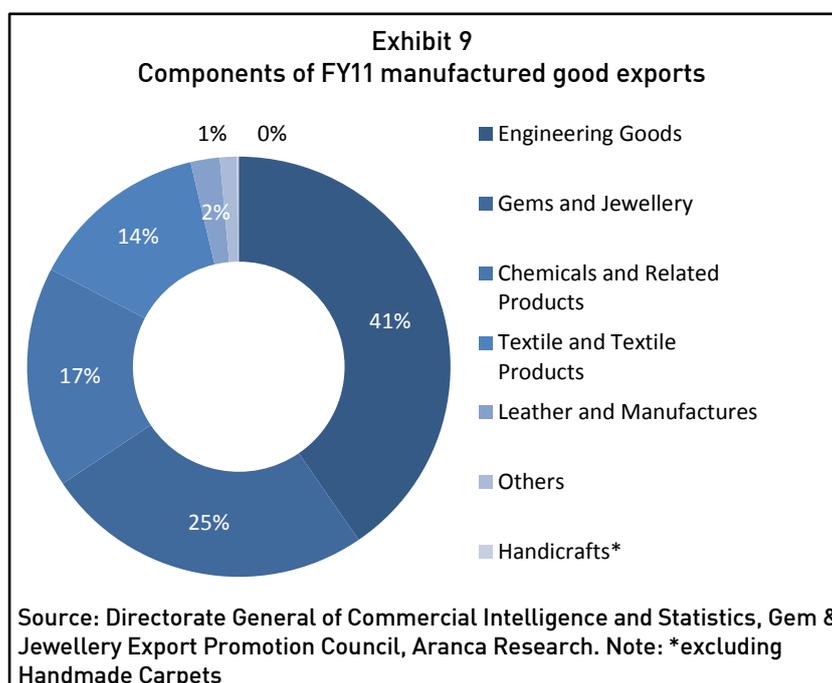
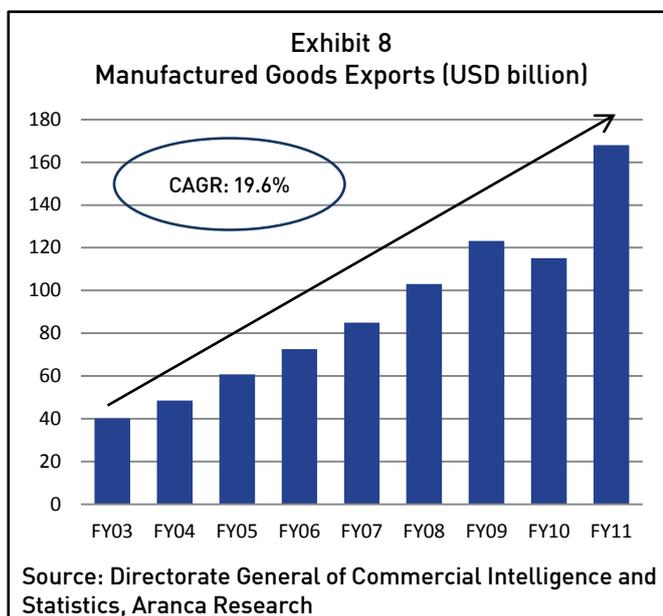
Source: Confederation of Indian Industry (CII), Aranca Research
Note: Figures in brackets indicate number of sectors



2. TAPPING THE GLOBAL MARKET

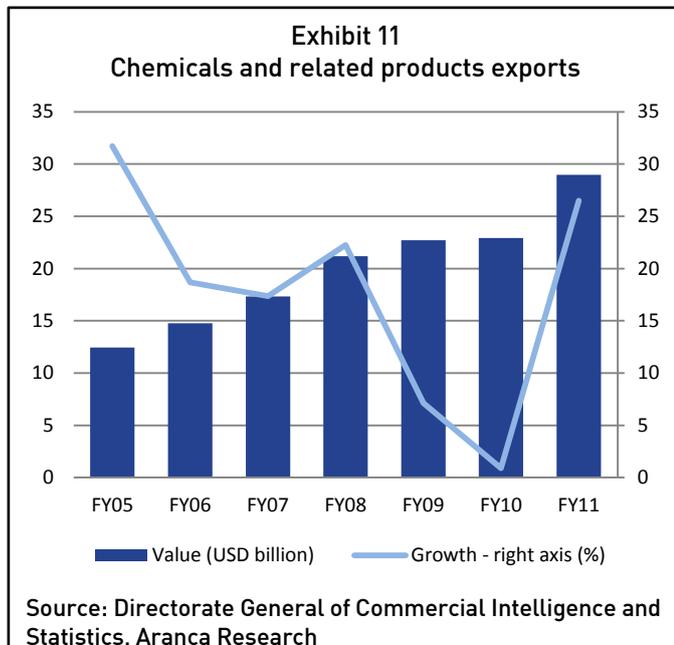
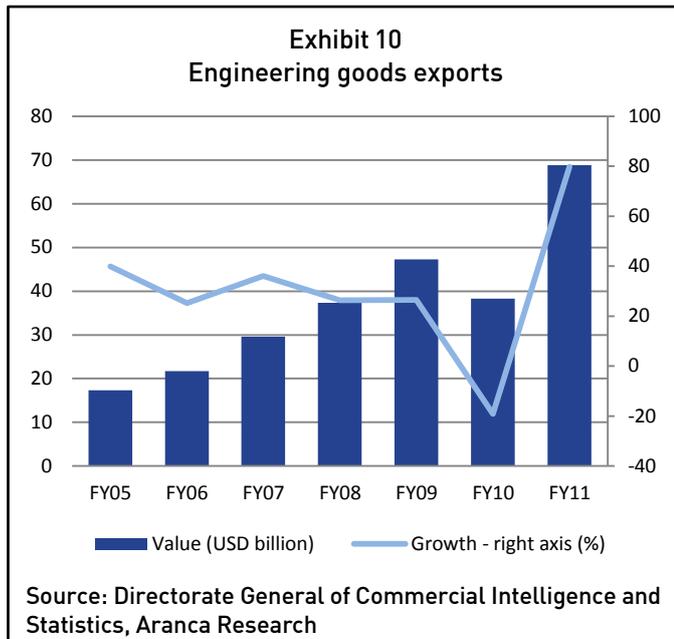
2.1 India's growing manufacturing exports

India's manufacturing exporters have played a key role in promoting the sector's prowess to consumers across the world. While on one hand sectors such as textiles, and gems and jewellery have been India's brand ambassadors in global markets since ancient times, the country has also made its presence felt in key industries such as engineering goods and chemicals. In fact, analysis of India's export data for FY11 reveals that engineering goods had the highest share in manufacturing exports (40.4 per cent), followed by gems and jewellery (25.2 per cent) and chemicals and related products (17.2 per cent). Overall, total manufacturing exports in FY11 grew to USD168.0 billion from USD115.2 billion in FY10. The sector's exports grew at a CAGR of 19.6% during FY03-11.



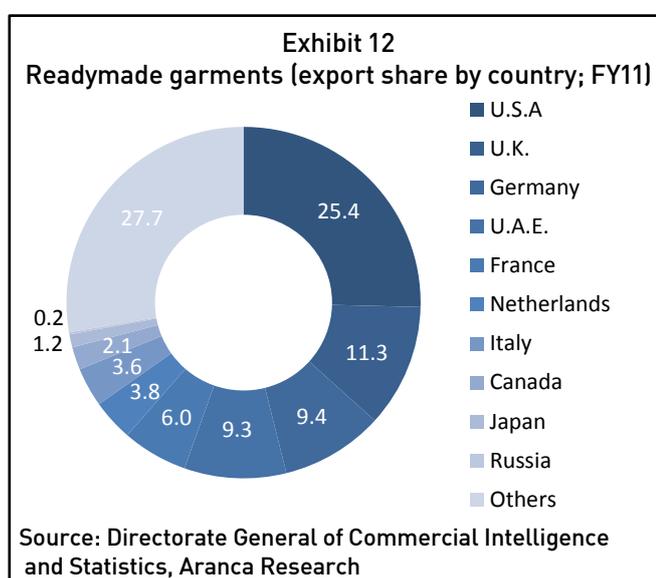
Within manufacturing exports, engineering goods was one of the fastest growing – the segment recorded a CAGR of 26.0 per cent during the period FY01-FY11. Other sub-sectors with high growth rates include gems and jewellery and chemicals, which grew at a rate of 18.6 per cent and 17.3 per cent respectively. Within engineering goods, transport equipment led the field with a CAGR of 34 per cent (FY01-FY10), followed by electronic goods (24 per cent) and machinery and instruments (22 per cent). In the chemicals sub-sector, growth in exports was

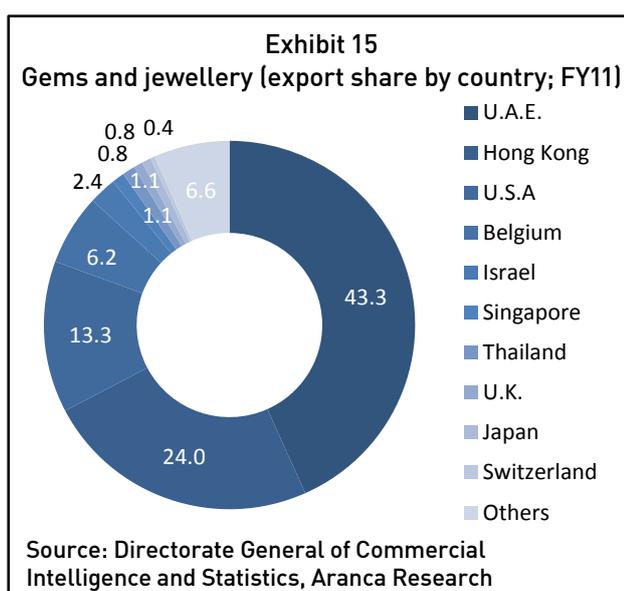
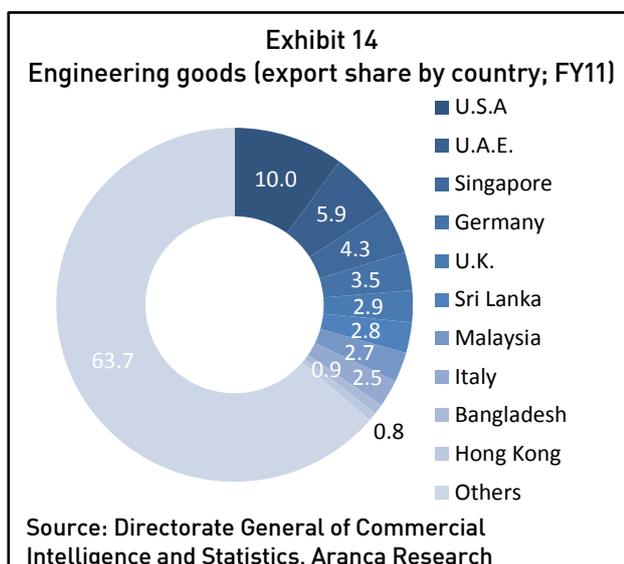
primarily led by pharmaceuticals – exports rose 18.0 per cent during the stated period.



2.2 The main export markets: US, Western Europe, and the Middle East

The main export market for Indian manufacturing goods was the US and Western Europe. Within Western Europe, Germany and UK are two of the most important export markets. The Middle East is also a key destination for Indian goods with the UAE in particular a major market for Indian gems and jewellery, engineering goods and chemicals. The following exhibits highlight the main markets for different Indian manufacturing products (in FY11).





3. INCREASING COMPETITIVENESS OF INDIAN MANUFACTURING

3.1 Sector has an edge in the global arena

India ranks second in the world as per the 2010 Global Manufacturing Competitiveness Index (GMCI), prepared by the US Council on Competitiveness, and Deloitte. The index factors in market dynamics as well as policy issues influencing the sector. India is ahead of major developed and emerging economies like the US, South Korea, Brazil and Japan. Looking ahead, India's competitiveness will increase further with its index score set to improve to 9.01 (out of 10) in the next five years from the 2010 figure of 8.15. In terms of rank, the

country is set to maintain its global second rank over the same period. The next exhibits highlight segments of the GMCI and ranks assigned to nations in 2010.

Exhibit 16
Drivers of the GMCI in descending order of weight

Talent-driven innovation
Cost of labour and materials
Energy cost of policies
Economic, trade, financial and tax systems
Quality of physical infrastructure
Government investments in manufacturing and innovation
Legal and regulatory system
Supplier network
Local business dynamics
Quality and availability of healthcare

Source: Deloitte and US Council on Competitiveness, Aranca Research

Exhibit 22
2010 GMCI – India compared with others

Current Rank	Country	Index Score	Rank after 5 Years
1	China	10.00	1
2	India	8.15	2
3	Rep of Korea	6.79	3
4	USA	5.84	5
5	Brazil	5.41	4
6	Japan	5.11	7
7	Mexico	4.84	6
8	Germany	4.80	8
9	Singapore	4.69	11
10	Poland	4.49	9
New add*	Thailand	-	10

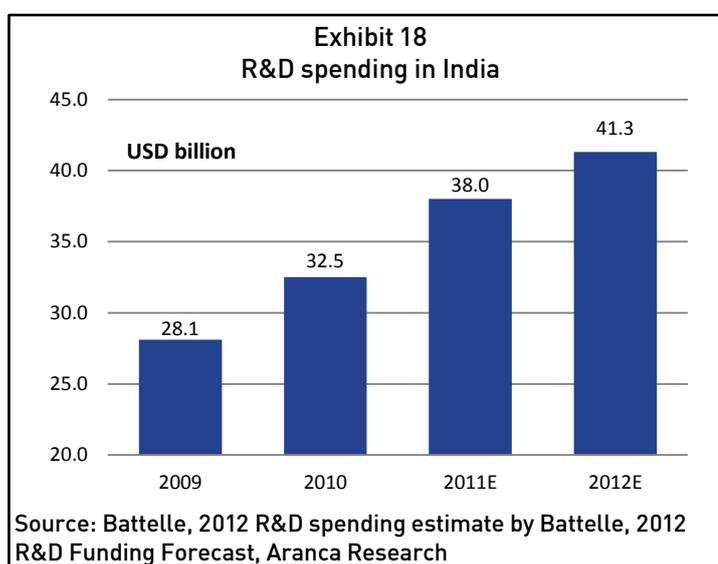
Source: Deloitte and US Council on Competitiveness, Aranca Research
*New addition among the top 10 countries. Currently Thailand is ranked 12th with an index score of 4.17

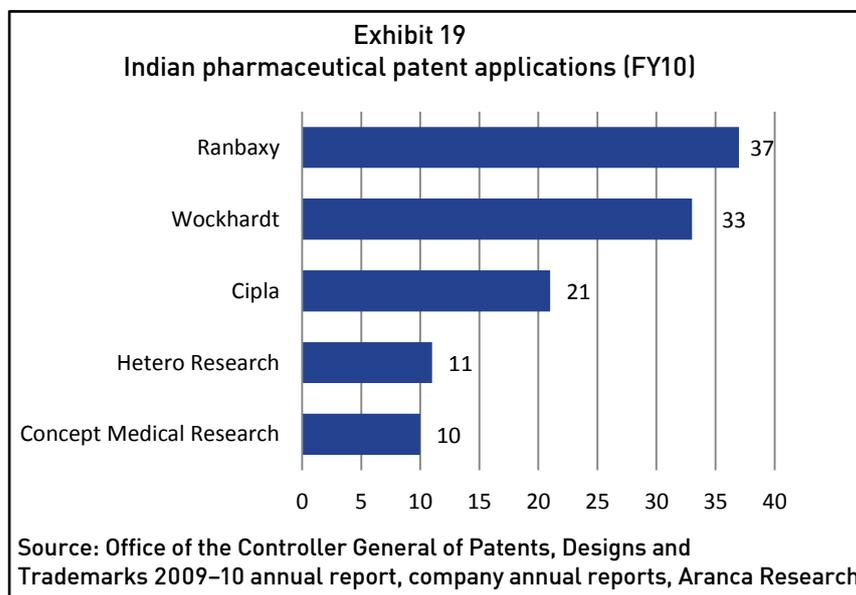
Quality standards in Indian manufacturing have improved significantly and the sector is now well known globally for its high quality. Over the last decade, Indian manufacturers extensively adopted the Total Quality Management (TQM) approach. As a result, the sector now enjoys cost advantage in the range of 15-20 per cent compared to the beginning of the decade. Ongoing and new best practices will continue to benefit the sector in the medium-term through their influence on both the top line and the bottom line.

Meanwhile, India is currently second only to Japan in hosting companies awarded for quality excellence. These include 21 companies who have been awarded the Deming Excellence Award and 153 companies with the Total Productive Maintenance (TPM) Excellence Award by the Japan Institute of Plant Maintenance (JIPM). Also, of the 165 Indian companies that have been awarded with the CII-Exim Bank Awards for Business Excellence, around 80 per cent are in the manufacturing sector. It is to be noted that this award is globally accepted as one equivalent to the European Foundation of Quality Award.

3.2 Encouraging research and fostering innovation

Innovation – be it product or process – has received a boost due to growing R&D in the country. Although, less than emerging market peers like China, India’s share in global R&D spending has been increasing. In 2011, for example, India’s R&D spending is estimated to have made up 2.8 per cent of the world total, higher than the 2.6 per cent share the year before. The Intellectual Property (IP) applications registered in India are also on the rise. Over FY06-FY10, IP applications filled for patents rose to 34,287 from 24,505; for designs the rise was to 6,092 from 4,949. Interestingly, the patentee with the largest number of IP applications from India in FY10 was from the manufacturing sector – Hindustan Unilever (FMCG sector, 103 applications). Pharmaceutical companies were not far behind – the top five Indian firms filed 112 IP applications.





Both the government as well as private players in the Indian manufacturing sector realise that R&D is a key to their global ambitions. Consequently, investments towards research have been speeded up. Given below are some notable investments in the field.

Exhibit 20
Recent investments in R&D by players (both public sector and private sector)

Date	R&D investment (implemented and/or announced)
May-11	ISRO announces setting up of spacecraft R&D center in Chitradurga
Apr-11	Hitachi to invest USD400 million to set up an R&D center in Bangalore
Aug-10	Alstom earmarks USD39 million to establish R&D center for power products
Jan-10	Huawei allocates USD500 million investment for R&D center
Oct-09	Hyundai sets up R&D center at an investment of USD25 million
Jun-09	LG Electronics doubles its annual R&D investment outlay to USD83 million

Source: India Electronic News, Moneycontrol, Economic Times, ApplianceMagazine.com, Business Standard, company websites, Aranca Research
ISRO: India Space Research Organisation

The Indian manufacturing sector is now replete with innovations that have become outstanding illustrations globally. Though examples abound, the one regarding introduction of a new process by Mahindra & Mahindra in development of a new vehicle is noteworthy. M&M introduced a new process (Integrated Design and Manufacturing) while developing its multi-utility vehicle 'Scorpio'. The process involved cross-functional teams (including Tier I suppliers) who collaborated extensively in the product development process – designing, testing

and marketing. The result was a shorter product development cycle and M&M was able to roll out the 'Scorpio' on an investment of USD120 million in the project – one-fifth of the average spent on similar projects globally.

3.3 Government support for developing a skilled workforce

India adds 500 PhDs, 200,000 engineers, 300,000 non-engineering postgraduates, and 2,100,000 other graduates to its workforce annually. This ensures the availability of a pool of skilled manpower to support the nation's industrial development. However, industry sources have often expressed concern regarding a potential shortage of talent, given the fast pace of economic growth in the country. There are also concerns pertaining to employability with a recent CII estimate¹ putting the share of employable graduates in the country at 39.5 per cent. Taking cognizance of such concerns, the government has acted in a proactive manner. The number of technical institutes (including IITs and NITs) has been increased and foreign direct investment in education encouraged.

The government also launched the Technical Education Quality Improvement Programme (TEQIP) towards making the technical education system more responsive to national as well as global economic and technological developments. The TEQIP was outlined as a 10-12 year program to be implemented in 3 phases with the assistance of the World Bank. The central government has announced the launch of Phase II of the program with an investment worth USD519 million. This amounts to 26 per cent of total funding with the rest coming from the World Bank (72 per cent), state governments (27 per cent), and unaided institutions (1 per cent). The government has also set up a National Skills Development Council to encourage private participation/management of Industrial Training Institutes.

4. CURRENT TRENDS IN INDIAN MANUFACTURING

4.1 India emerging as a global manufacturing hub

The process of evolving as a global manufacturing hub has already started in India with global manufacturing majors setting up shop in India along with their domestic counterparts. A strong pipeline of existing projects from both global and domestic firms highlights the growing importance of the country as a market as well as a production hub. Some of the major investments have been highlighted in the table below:

¹A study conducted in 2008 released during 'Skills World 2008' summit organized by the CII and Aspire, a human capital management firm in India

Exhibit 21
International manufacturing companies and India

Company	Investments in India
Automotives and auto components	
Nissan Motor Ltd	Plans to increase its auto components sourcing from India from USD10 million in 2010 to USD40 million in 2012
VE Commercial Vehicles (VECV)	Announced investment of USD61.9 million for a production base for Volvo's medium-duty engine
Hyundai	Manufactures its model "i10" exclusively in India (second largest manufacturing base after Korea) and exports it to the world
Ford	Shifting to India for engine manufacturing base
Skoda Auto	Chose India for a manufacturing facility to serve the Indian market and exports destined for Nepal, Sri Lanka, Burma and Bangladesh
Electronics	
Nokia	Manufacturing facility in India exports mobile handsets to North America, Europe, Middle East, Asia, Australia and New Zealand
LG	Plans to set up a mobile manufacturing facility to serve the domestic market and Europe and the Commonwealth of Independent States
Samsung	Announced investment of USD100 million for setting up manufacturing plant in Chennai, India
Others	
Airbus Industries	Plans to set up manufacturing base in India within 3-4 years
Doosan Heavy Industries & Construction Co	Plans to set up power equipment manufacturing unit in India
Cumins	Has outlined India as its upcoming manufacturing hub
High-end fashion brands	Luxury leather goods brand - Louis Vuitton; premium brand for linen and home décor - Frette are considering India for their manufacturing facilities

Source: Company sources, news articles, Aranca Research

4.2 Indian manufacturing growth outshining peers in the BRICs

Current trends for this year suggest that growth in the manufacturing sector in India is outpacing that of peers in the BRICs. Although a number of production indices are used to measure industrial growth in these nations, the HSBC Manufacturing Purchasing Managers' Index (PMITM) is used here for comparison. The HSBC manufacturing PMI for India incorporates five factors – new orders, output, employment, suppliers' delivery time, and stock of items – in order to gauge the pace and direction of activity in the manufacturing sector of the country. Any figure above 50 for the index indicates expansion while anything below it denotes a contraction.

Data for 2012 reveals that the index for the Indian manufacturing sector has been higher than those for other BRIC nations, thereby indicating a faster pace of expansion for the sector in India. In fact, India's manufacturing PMI for March 2012 stood at 54.7, indicating an expansion. This was in stark contrast to contraction in China (48.3), while manufacturing in Russia (50.8) and Brazil (51.1) grew at a relatively slower pace for the same month. Much of this difference could be because of the fact that the manufacturing sector of countries such as China's are heavily geared towards exports. With key destinations like the US and Western Europe facing recessionary pressures once again, demand fundamentals for China's exporters have weakened. In contrast, in India, domestic consumption is the key driver of the manufacturing sector and with strong GDP growth likely to continue, demand fundamentals remain strong.

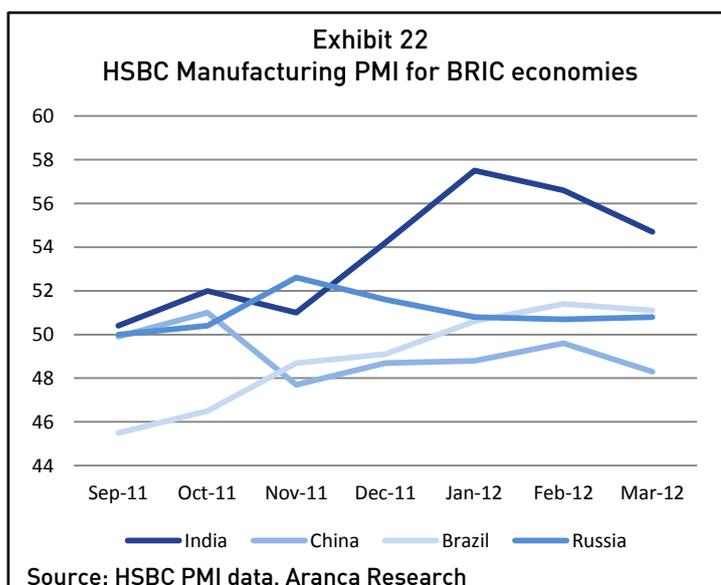


Exhibit 23
GDP growth – comparison among key economies

	2Q11	3Q11	4Q11	1Q12
US	1.3	1.8	3.0	2.2
UK	0.6	0.5	0.5	0.0
Eurozone	1.6	1.4	0.7	-0.3*
India	7.7	6.9	6.1	6.9 [#]
China	9.5	9.1	8.9	8.1

Source: Bloomberg, RBI, Aranca Research
* Indicates Bloomberg consensus estimate # indicates RBI estimate

4.3 Interesting trends in key manufacturing sub-sectors

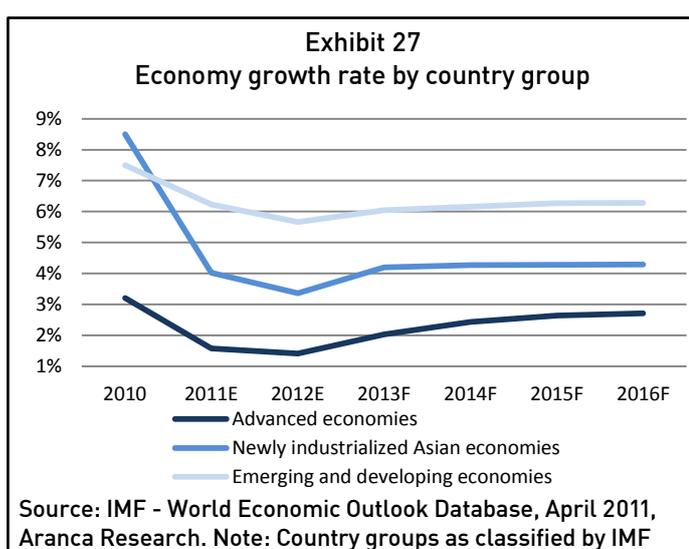
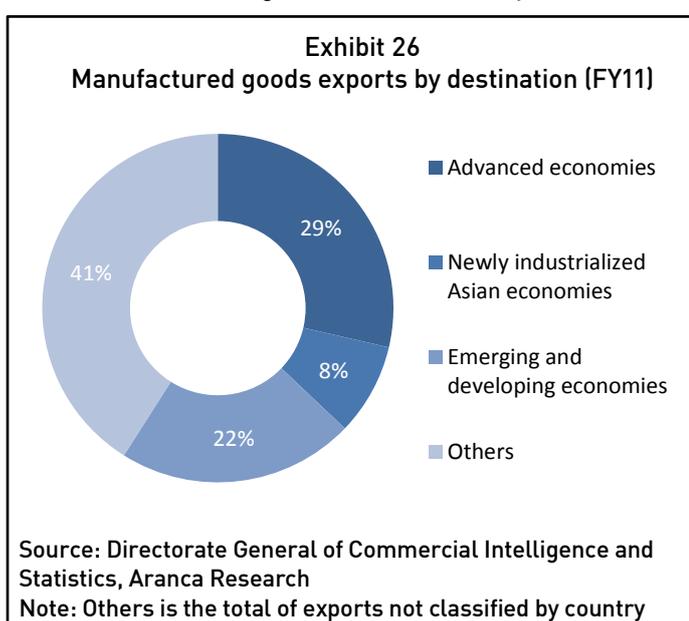
- Computers: India is the fastest growing IT systems and hardware market in the Asia-Pacific region
- Communication and Broadcasting Equipments: India is set to overtake the US as the world's largest DTH market by 2012
- Automotive: Tata Motors has brought out the world's cheapest car – the Tata Nano
- Alternative fuel distribution: The CNG distribution network is projected to spread to 250 cities in India by 2018 from 30 cities in 2009
- Cement production: Major Indian cement manufacturers are increasingly shifting to alternate sources of energy (especially bio energy) to fire their kilns and thereby cut energy costs
- Textiles: The sector saw investments worth USD43 billion in FY10 under the government's Technology Upgradation Fund Scheme (TUFS), wherein spinning accounted for largest share of total investments at 33 per cent
- Electrical Machinery: Players in this sector are forming strategic alliances and tie-ups with technology suppliers to upgrade capabilities
- Engineering: More than 2,500 firms in the engineering sector have the ISO 9000 accreditation

5. FACTORS DRIVING THE INDIAN MANUFACTURING GROWTH STORY

5.1 Fortification in demand enabling sustainable growth of sector

Domestic demand fundamentals for the manufacturing sector in India have never been rosier as it is now. Strong growth in per-capita income, a young and growing population, rapid urbanisation, and changing lifestyles will ensure that demand growth will keep the manufacturing sector busy for the coming decades. Per-capita nominal GDP, for example, is slated to expand at a CAGR of 6.9 per cent over 2010-15. Demand-push from increasing incomes will be augmented by a rising middle class and a young population, which currently has a median age of 25 years. According to McKinsey, India's middle class is likely to expand 12

Demand for India's manufacturing exports² so far has been led by advanced economies, consuming 29 per cent of total products exported from the country. The US and Western Europe are the key destinations within advanced economies. However, this trend is likely to change as the growth in emerging economies of Asia, Africa and the Middle East is expected to outpace that of developed markets. Already some change is visible, with the Middle East emerging as a key market for a number of Indian products like engineering goods, readymade garments, and gems and jewellery. Closer trade ties with ASEAN nations, China, Latin America, and Africa in the coming decade will intensify the above trend.



²A proxy for manufacturing goods exports using segments that made up 78.5 per cent of the total during FY10 (leather and manufactures, gems and jewellery, engineering goods, cotton yarn, fabrics, made ups and readymade garments)

5.2 Technology development initiatives

Technology is the key to expanding the manufacturing base in the country and increasing India's presence in the global market. The government recognizes this fact and has therefore provided a number of incentives to facilitate technology development.

- **Pharmaceuticals:** No duty for upgrading technology through the Export Promotion Capital Goods Scheme
- **Textiles:** A maximum of USD438 million of subsidies on investment of USD10.4 billion across the value chain under the revised Technology Upgradation Fund Scheme
- **Food processing:** No import duty on capital goods for 100 per cent export oriented processing units

The government has also launched a number of schemes for technology development in micro, small and medium enterprises (MSMEs). These include -

- **Lean Manufacturing Competitiveness Scheme:** Implemented under the Public Private Partnership (PPP) mode with 42 Lean Consultants, the project aims to reduce manufacturing waste, and increase productivity and competitiveness
- **Design Clinic Scheme:** This is a platform to enable MSME's to avail expert advice and cost effective solutions to real-time design issues. The scheme includes two projects – Design Awareness and Design Project Funding
- **Marketing Assistance and Technology Upgradation:** The scheme focuses to upgrade technology for increasing competitiveness in marketing. Activities included in this scheme are technology upgradation for packaging, competition studies, and development of marketing techniques
- **Technology and Quality Upgradation:** The scheme aims to encourage MSMEs to adopt global standards so as to improve the quality of goods produced

5.3 Encouraging Foreign Direct Investment (FDI)

Over the years, the increasing attractiveness of the Indian market has lured investors from across the world. The country was among the top five preferred destinations for Foreign Direct Investment (FDI) from Asian, European and North American investors as per The 2010 A.T. Kearney FDI Confidence Index. In The 2012 A.T. Kearney FDI Confidence Index, India is positioned second in the world with many developed and emerging countries lagging behind.

Exhibit 28
2012 FDI Confidence Index - Top 10 countries

Rank	Country
1	China
2	India
3	Brazil
4	United States of America (USA)
5	Germany
6	Australia
7	Singapore
8	United Kingdom
9	Indonesia
10	Malaysia

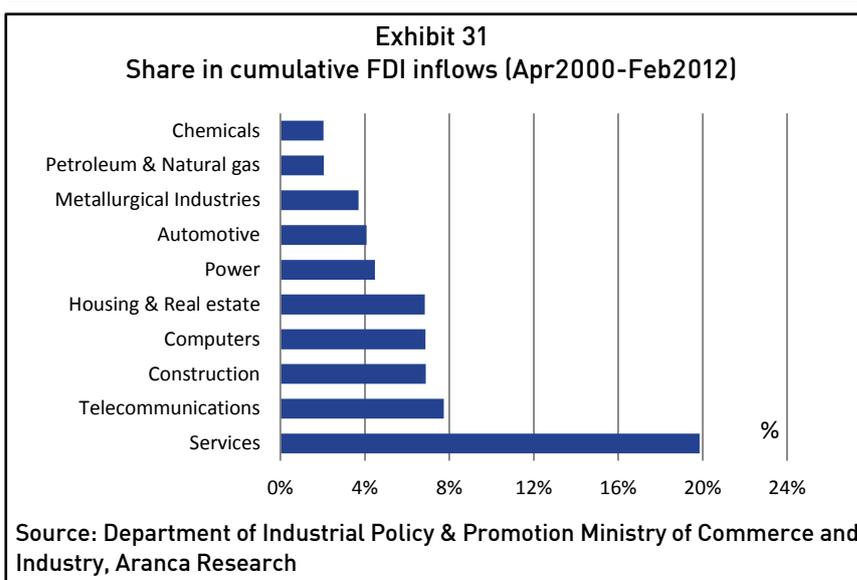
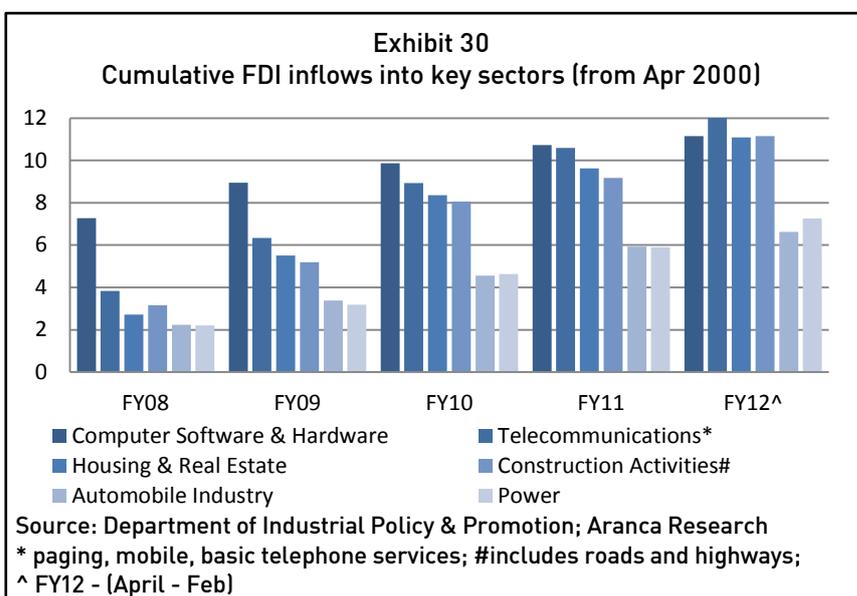
Source: A.T. Kearney, Aranca Research

Exhibit 29
Top 10 regional preference of investors

Rank	Asian investors	European investors	North American investors
1	China	China	USA
2	Vietnam	USA	China
3	USA	India	India
4	India	Germany	Brazil
5	Hog Kong	Brazil	Mexico
6	Indonesia	Romania	Poland
7	Brazil	Italy	UK
8	Australia	France	Canada
9	Thailand	Poland	Australia
10	UAE	Russia	Germany

Source: A.T. Kearney, Aranca Research

At a more micro level, FDI inflows into key sub-sectors of manufacturing have also posted strong growth. The exhibits below highlight cumulative FDI inflows into key sectors of the Indian economy and their shares in overall inflows.



In a bid to boost FDI even further, the government issued the new 'Consolidated Foreign Direct Investment Policy', which came into effect from April 1, 2010. Further, in FY11, the government eased norms for investments by foreign companies that are present in India through a joint venture (JV) or a technical collaboration. Accordingly³, the foreign company will not have to seek a 'no-objection certificate' from the Indian partner for investing in the sector where the JV operates. According to PricewaterhouseCoopers, eased norms would augment the confidence of investors who will no longer require their Indian partners' approval. Consequently, investors sitting on the sidelines are expected to move in, thereby increasing FDI inflows into the country.

³As per Government of India's Circular 1 of 2011

5.4 The National Manufacturing Competitiveness Council (NMCC)

To develop a coherent strategy for developing the manufacturing sector, the government set up the National Manufacturing Competitiveness Council (NMCC). The role of the NMCC is to propose measures to increase the global competitiveness of the sector. Recently, NMCC, in coordination with the Department of Industrial Policy and Promotion, and the Planning Commission, has been instrumental in framing the National Manufacturing Policy (NMP). Key objectives of the NMP include –

- Raise the manufacturing sector's contribution to GDP to 25 per cent by 2025 from the current share of 16 per cent
- Encourage investments and competitiveness to make the country a global manufacturing hub
- Double employment generation in the sector from its current levels

In keeping with the objectives of the NMCC, the government is also planning to set up National Manufacturing and Investment Zones (NMIZs) to encourage investments and thereby boost the share of manufacturing in GDP to 25 per cent by 2022. According to the Prime Minister's Office (PMO), the NMIZs will be mega investment projects involving state-of-the-art infrastructure. Apart from the above the government has also been toying with other policy measures to support manufacturing growth. Apart from encouraging FDI, other measures to develop manufacturing include fiscal support for development of indigenous technology, training programs for skill development, and labour reforms.

6. OPPORTUNITIES IN INDIAN MANUFACTURING

6.1 A lucrative domestic market

The Indian market in itself offers significant growth opportunities to a wide gamut of industries in the manufacturing sector. Some of them have been discussed below –

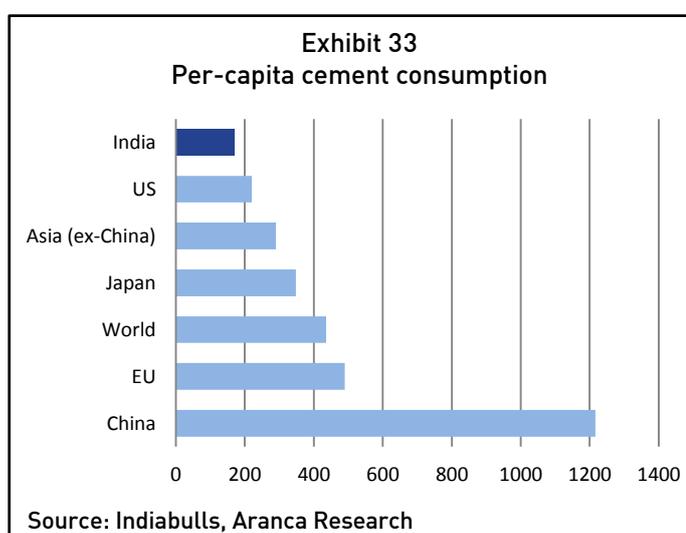
Power equipment: Despite strong economic growth over the past decade, power consumption in India is among the lowest in the world. Growth in demand clearly outpaces power generation growth. With economic activity expected to continue on a fast-paced trajectory in the coming decades as well, the trend is likely to continue. For example, energy shortfall for FY12 stood at 10.3 per cent. However, the government has not been blind to the current power scenario in the country and has earmarked power generation as a priority focus area. Under its five-year plans, the government has announced plans to add 55GW of power generating capacity by 2012 and an additional 100GW by 2017. The power equipment industry will thus emerge as a high-growth opportunity. At the same time, policies including 'The Electricity Act 2003', which did away with licenses for

power generation projects, and other incentives like tax benefits, and permission for trading of power will enthruse the private sector.

Exhibit 32
Per-capita electricity consumption (2009)

Country	kWh per capita
United States	12,914
Japan	7,819
Germany	6,779
Russia	6,136
United Kingdom	5,692
World average	2,803
China	2,631
Brazil	2,206
Mexico	1,943
Indonesia	590
India	571

Source: World Bank, Aranca Research



Construction equipment and cement: The construction equipments sector and cement will benefit from the rise in demand for housing and commercial real estate space. With rising incomes and rapid urbanisation has come strong growth in demand for housing and this is likely to accelerate by 4.25 million units in 2014 from 2010. Strong growth is also expected on the commercial real estate front with rising demand for office space, retail, and hospitality. Consequently, the real estate sector is projected to grow to USD126 billion by 2015 from USD55.6 billion in 2010. Construction equipment and cement will further benefit from a renewed policy focus on infrastructure. The government has earmarked USD514 billion of investments under the 11th Plan and a further USD1 trillion under the 12th Plan.

Food processing: India is among the world's leading food producers. The country is the largest producer of milk, pulses and tea in the world. With its large agriculture sector, the country is also the world's second-largest producer of fruits and vegetables, and the third-largest fish producer. However, currently only 6 per cent of perishables in the country are processed. The Ministry of Food Processing Industries (MFPI) estimates this to increase to 20 per cent by 2015. MFPI also expects value addition to increase from 20 per cent to 35 per cent over the same period. On the back of rising incomes, a growing middle class, rapid urbanisation, and a young population, processed food demand is projected to double by 2020 from current levels. The food processing sector has and will continue to benefit from policy support. These include easier credit access, focus on supply-chain infrastructure, and setting up of Agri Export Zones and mega food parks. Consequently, the sector is set to induce investments worth USD21.9 billion investment by 2015.

6.2 Manufacturing off-shoring and India: An example from auto components

India is emerging as a favourite destination for global manufacturers. Foreign companies have been attracted by India's cost competitiveness, its skilled workforce, and favourable government policies. The best example of this can be found in the auto components sector.

- Due to a cost-effective manufacturing base, the auto components sector in India saves 10-25 per cent on operations compared to peers in Europe and Latin America
- The sector also has high quality standards, a fact borne out by the number of quality awards won by firms – Total Productive Maintenance (TPM) Award (15 players), the Deming Award (11), and the Japan Institute of Plant Maintenance (JIPM) Award (3)
- Greater access to key automotive markets like the Middle East and Europe

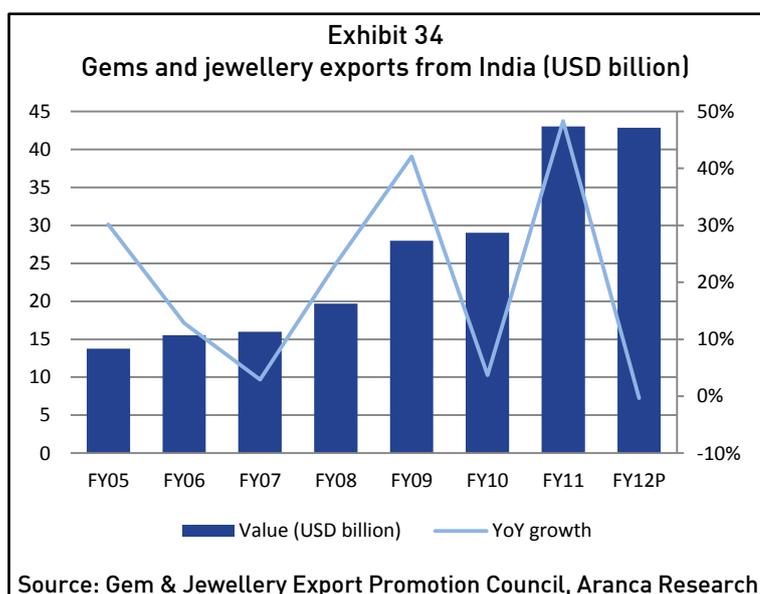
Major Original Equipment Manufacturers (OEMs) are keen to make India their sourcing hub. Recent investment announcements bear testimony to this.

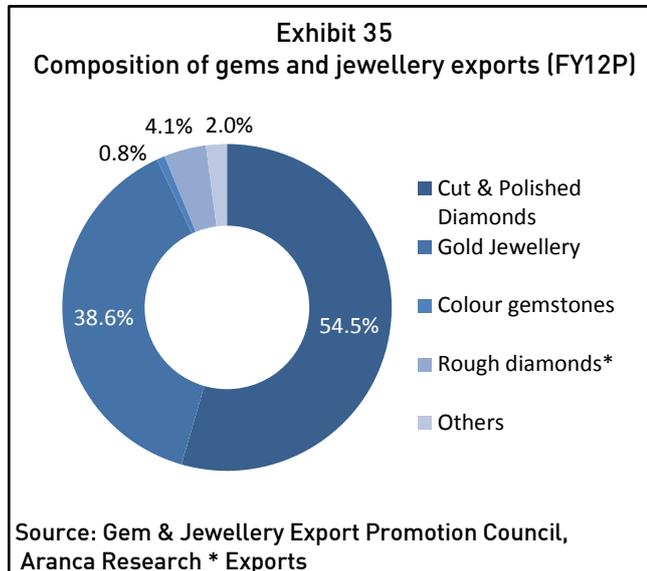
- **Volkswagen:** The German auto giant plans to increase India's share in total global sourcing to 70 per cent; Volkswagen Group has recently announced plans to double its component sourcing from India to USD924 million in 2012
- **Honda:** The Japanese auto major has made India its export base for key engine components
- **Ford:** The US company has announced plans to make India a manufacturing base for engines to serve the Asia-Pacific region as well as Africa

6.3 Emergence of a manufacturing export hub

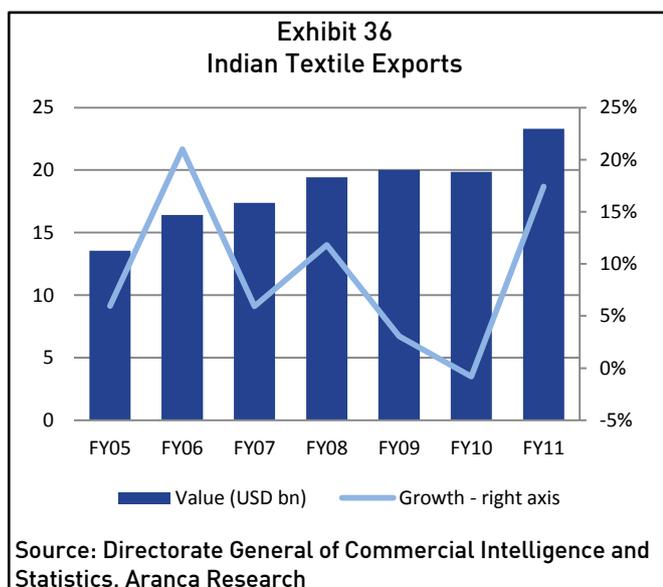
While India exports a wide variety of manufactured goods, there are some sectors in which the country has a distinct advantage. We present here two such sectors – gems and jewellery, and textiles – both of whom have played a major role in the country’s economy.

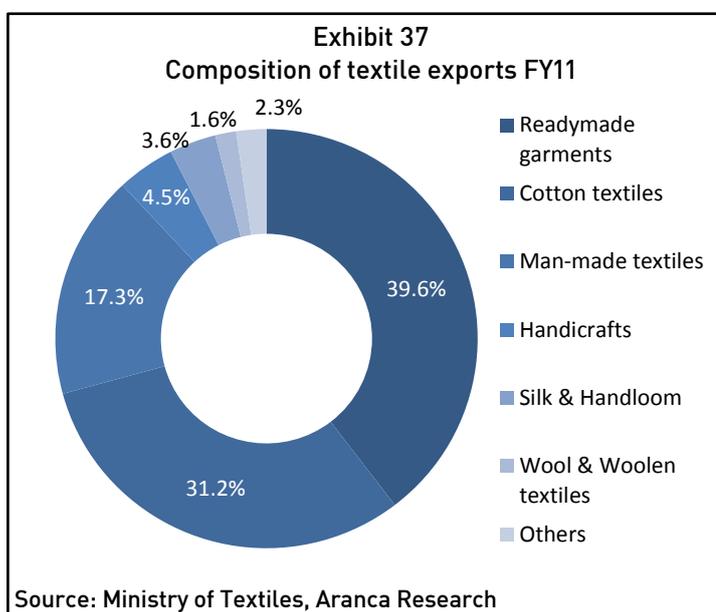
Gems and jewellery: Gems and jewellery exports from India increased at a CAGR of 18.43 per cent over FY06–FY12. The two major constituents in these exports are cut and polished diamonds, and gold jewellery. Together they accounted for just over 93 per cent of total gems and jewellery exports in FY12. The country has been able to leverage its past experience in the sector and improvise further leading to value addition of final products. India particularly enjoys a strong competitive advantage in global cut and polished diamonds market. Cost of production is low while a large pool of skilled manpower is available. India in fact has a major share in the global diamond polishing business with 11 out of the world’s 12 diamonds being cut and polished in the country.





Textiles: Cost competitiveness is a key driver of the Indian textiles exports. This is mainly due to synergies achieved by Indian players while expanding capacity. Exports from the sector have been growing at a CAGR of 9.5 per cent during FY05-FY11. Textile exports are dominated by readymade garments (40 per cent of the total in FY11), a segment that entails high value addition compared to other segments.





Interestingly, SMEs have made a strong contribution to growth of the Indian textiles sector. Due to their strong presence, the Ministry of Textiles has undertaken a 'cluster based' development approach for the efficient growth of the sector. According to UNIDO, 80 per cent of production of textiles comes from about seventy clusters. The major clusters include Panipat, Tirupur and Ludhiana. The Panipat cluster produces 75 per cent of India's blankets, Tirupur accounts for 80 per cent of the country's hosiery exports, and Ludhiana has a share of 95 per cent in the production of woollen knitwear.

7. CONCLUSION

India has emerged as a global manufacturing hub due to its cost competitiveness, skilled workforce and favourable government policies. Furthermore, the most fundamental factor fostering growth in the sector is the presence of strong market locally. India is one of the fastest growing economies. The Consumer trend in the country is enabling domestic players to flourish and also attracting international players. During FY11, 41 out of 121 manufacturing sub-sectors registered excellent growth of more than 20 per cent. While the sector predominantly has been expanding, just five of 121 sectors shrunk during the period.

Though the sector has registered strong growth in the past, the Indian market offers a wide range of untapped opportunities. India, which has placed high priority on infrastructure development, offers high growth for cement and power equipment manufacturers, with its current consumption pattern way below the world average. Another example is prospects in the food processing industry. The world's second most populous country and one of the largest food producers processed a meagre six per cent of the perishables.

The evolving trends of manufacturing off-shoring in India, as seen in the automobile sector, and the growth of manufactured exports, portrayed in sub-sectors such as gems & jewellery and textiles, illustrates the long-term sustainability of growth in the sector.

APPENDIX: SNAPSHOT OF KEY INDUSTRIES

1 Automotives

India's automotives industry, worth USD48 billion, has evolved from a producer of 0.6 million units in the early 1990's to a giant churning out 18.0 million units in 2010. The sector is dominated by cars which make up two-third of industry turnover. However, in terms of volumes, two-wheelers have the largest share – about three-fourth. As per the Automotive Mission Plan, the sector will be worth USD145 billion by 2016.

	2007	2008	2009	2010E
Revenue	43.6	45.2	48.0	57.1
Cars	22.9	23.8	32.5	37.8
Trucks	14.9	15.4	8.9	12.3
Two-wheelers	5.8	6.0	6.6	7.0
Growth (%)	21.1	3.7	6.2	19.0
Production (million units)	10.9	11.2	14.1	18.0

Source: Datamonitor, SIAM, Aranca Research

Category	Key Player	Market Share
Passenger Vehicles	Maruti Suzuki	45%
MCVs & HCVs	Tata Motors	63%
LCVs	Tata Motors	59%
Three Wheelers	Piaggio	41%
Motorcycles	Hero Honda	59%
Scooters	Honda	51%

Source: SIAM, Aranca Research
Notes: LCV – Light Commercial Vehicles, Correspondingly M in MCV and H in HCV stand for 'Medium' and 'Heavy'

Key Trends

- India is the world's 2nd largest two-wheeler producer, 4th largest commercial vehicle producer
- Increasing innovations – Tata Motors designed the world's cheapest car (Nano)
- Compressed Natural gas (CNG) fuelled vehicles in India have increased at a CAGR of 60 per cent during 2008-10

Growth Drivers

- Demand drivers: Rising incomes, growing middle class, a young population, and easy access to credit
- Policy support: through sops, taxes, FDI encouragement, and focus on developing India as a global auto manufacturing hub

Opportunities

- Global car giants like General Motors, Nissan and Toyota have earmarked India as the *hub for manufacturing small cars* for the world market. India offers a 10-25 per cent cost advantage compared to Europe and Latin America
- The *electric car* market is expected to expand given the passion for fuel efficiency
- Given favourable policies (National Automotive Testing and R&D Infrastructure Project) and a pool of skilled manpower, India is fast emerging as a *global R&D hub*

2 Food Processing

Domestic food spending in India touched USD181 billion in 2009 and is estimated to surge up to USD318 billion on the back of strong growth in per-capita income and a growing (young) population. The food processing industry stands to gain from the fact that the country is the world's largest milk producer, the second-largest fruits and vegetables producer, and the third-largest fish producer.

	2004	2005	2006	2007
Production	57.0	62.0	68.0	75.0
Growth (%)	8	9	10	10
Exports	0.6	1.2	1.4	1.9
Growth (%)	0	100	17	36

Source: Flavours of Incredible India (Ernst & Young, 2009), Aranca Research

Exhibit 41
Leading market players

Category	Leading players
Fruits, vegetables, processed grain	Dabur, Godrej, Parle, MTR
Aerated drinks and packaged water	Pepsi, Coca-Cola, Parle
Packaged food	MTR, Fritolay, Heinz, Nestle, Britannia, Cadbury's
Milk and milk products	Cooperative societies - GCMMF, APDDCF, KMF, Mahasang, NDDB

Source: Aranca Research

Key Trends

- Sector accounted for 14 per cent of India's total manufacturing sector output in FY09
- Consumer food (30 per cent), gain, groundnuts and cereals (28 per cent) and processed fruits and vegetables (18 per cent) were the main export items in FY11; main destinations were the Middle East and South East Asia
- Unorganised sector dominates; share: 70 per cent of volumes, 50 per cent of value

Growth Drivers

- Demand drivers: Rising incomes, increasing urbanization, growing middle class, dual income households, and a young population
- Favourable supply fundamentals: Large agriculture sector, large livestock base, a long coastline, and a number of inland water bodies
- Policy support: Mega Food Parks, Agri Export Zones, 100 per cent FDI under automatic route, tax incentives, and recognition as priority sector for bank credit

Opportunities

- The fragmented market has huge growth potential as current *value addition* by the industry is 20 per cent; the government intends to boost this to 35 per cent by 2015
- Household consumption of processed food is expected to double by 2020 on the rising incomes, poverty alleviation and further urbanisation
- Potential to evolve as a *global food processing hub* due to adequate supply of raw materials, cost advantages, and government support

3 Electronics

The electronics market in India was worth USD68 billion in FY11 and is projected to grow to USD400 billion by 2020 (Department of Information Technology). Production in the sector expanded at a CAGR of 16.7 per cent during FY06-FY12.

Exhibit 42				
Key figures (USD billion)				
	FY 09	FY 10	FY 11	FY12E
Production	20.3	23.1	26.8	29.9
Growth (%)	15%	14%	16%	12%
Exports	6.5	5.4	8.4	9.3
Growth (%)	132%	-17%	56%	11%

Source: Department of Information Technology, Corporate Catalyst India, Aranca Research

Exhibit 43	
Leading market players	
Category	Leading players
Consumer electronics	LG, Samsung, Videocon, HCL
Specialized products*	Bharat Electronics
Electronic equipment	Jabil
Display devices	Samtel

Source: Rediff business, Corporate Catalyst India, Aranca Research
*in order to meet needs of Indian defence department

Key Trends

- Growth in production of communication and broadcasting (C&B) equipment overshadowed sector growth – CAGR of 34 per cent versus 16.7 per cent over FY06-FY12; consequently share of C&B in total production rose to 28.3 per cent from 12.4 per cent
- Increase in demand for C&B equipments due to declining tariffs
- India is witnessing high penetration in computers market; 40 per cent growth in sales of notebooks during FY 11
- Increasing affordability and organised retail benefitting the sector

Growth Drivers

- Demand drivers: Easy access to credit, declining prices, growing disposable income along, and an expanding middle class

- Policy support: Tax incentives for electronic manufacturers, relaxed duties, promotion of SEZs, and benefits from schemes like Export Promotion Capital Goods Scheme, and Electronic Hardware Technology Park Scheme
- Foreign investment: Sector benefitting from increasing FDI; cumulative inflows from April 2000 to March 2011 was USD11.6 billion

Opportunities

- Domestic production meets only 45 per cent of demand; policy sops are on the anvil to encourage *higher production* in India
- Penetration in the *consumer durables* segment is set to rise from current levels as disposable incomes of consumer rise due to strong economic growth
- According to the Department of Information Technology, demand for *electronics hardware* is set to grow at a CAGR of 22 per cent over 2009-20

4 Fast Moving Consumer Goods (FMCG)

The FMCG sector in India has grown to a size of USD27.9 billion in 2010 from USD9.0 billion in 2000. 'Food products' is the leading segment followed by 'personal care' and 'fabric care'. The fastest growing sub-sectors have been 'chocolates' and 'juices'. Hindustan Unilever Ltd (HUL) is the leading player in the market with a share of more than 33 per cent.

	2007	2008	2009	2010
Sales	17.8	21.3	24.2	27.9
Growth (%)	13	20	14	15

Source: AC Nielsen, Aranca Research

Category	Key Player	Market Share
Hair oil	Marico	42%
Shampoo	Hindustan Unilever Ltd	46%
Oral care	Colgate	50%
Skin care	Hindustan Unilever Ltd	59%
Fruit Juice	Dabur	52%

Source: Industry estimates, Aranca Research

Key Trends

- Introduction of 'small packs' has enabled low pricing per unit and helped to expand the customer base (and thereby volumes and margins as well)
- FMCG companies are expanding their distribution networks to capitalize on the underserved rural market
- Successful use of customer segmentation and product innovation by companies

Growth Drivers

- Demand drivers: Increasing incomes, expanding middle class and rapid urbanisation driving sales growth
- Growing popularity of organised retail (5-6 per cent of total retail contributes to 25 per cent of sales) is leading to discretionary purchases and thereby boosting sales
- Favourable government policies as the sector is classified as a priority sector

Opportunities

- Increasing brand consciousness and rising rural incomes is making the *rural market* a potential high growth area for the FMCG sector
- Demand for premium brands and value-added mass brands have gone up and the trend is likely to strengthen further as people get richer. This provides opportunities for current players to expand their *product portfolio*
- Indian consumers are highly adaptable to new products. This offers companies the opportunity to *innovate* with new products (eg. men's fairness cream)
- India is a lucrative global sourcing hub for FMCG companies due to its cost competitiveness and access to international markets.

5 Pharmaceuticals

India is the third-largest pharmaceutical market by value in the Asia-Pacific region. The trade surplus in the sector is likely to expand to USD12.8 billion by 2015; the sector's exports are forecasted to increase more than two folds according to Business Monitor International (BMI).

Exhibit 46
Key figures (USD billion)

	2009	2010	2011E	2012E
Revenue	11.2	13.8	15.6	17.4
Growth (%)	15%	24%	13%	12%
Exports	4.9	6.0	7.0	8.0
Net exports	3.9	5.1	6.1	7.0
Growth (%)	-5%	31%	20%	15%

Source: BMI, Aranca Research

Exhibit 47
Leading market players

Rank	Company	Market Share
1	Cipla	5.2%
2	GlaxoSmithKline	4.6%
3	Sun Pharmaceutical	4.6%
4	Ranbaxy Laboratories	4.6%
5	Piramal Healthcare	4.1%

Source: Industry estimates, Aranca Research

Key Trends

- Spending on R&D by Indian firms amounts to 1.9 per cent of revenue on average
- India is the world's second largest Active Pharmaceutical Ingredients manufacturer
- Generic drugs dominate the sector's total sales (over 70 per cent in 2011)
- India's cost advantage has helped the 'clinical trial industry' to flourish; the segment was worth USD400 million (estimates) in 2009

Growth Drivers

- Demand drivers: Growing share of educated people leading to rising acceptance for medicines; rising health insurance coverage (expected to double in 2020 compared to 2010); growing incomes and population; improved medical infrastructure (USD200 billion of investments in the next decade)

-
- Policy support: Measures like MOUs with USFDA, WHO⁴ and Health Canada; “Pharma Vision 2020” to make India a global leader in end-to-end drug manufacture; reduced approval time for new facilities will lead to growth in investments in the sector

Opportunities

- Availability of skilled doctors, genetically diverse population, and cost advantage (65 per cent lower than in the US) makes India a lucrative destination for *clinical trials*
- Improving income levels of Indian consumers will boost demand for *high-end drugs*
- With 70 per cent of India’s population residing in rural areas, *rural markets* are an opportunity of growth for pharmaceutical companies in India

⁴MOU: Memorandum of Understanding, USFDA: United States Food and Drug Association; WHO: World Health Organization

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