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India's pharmaceutical industry on course for globalisation

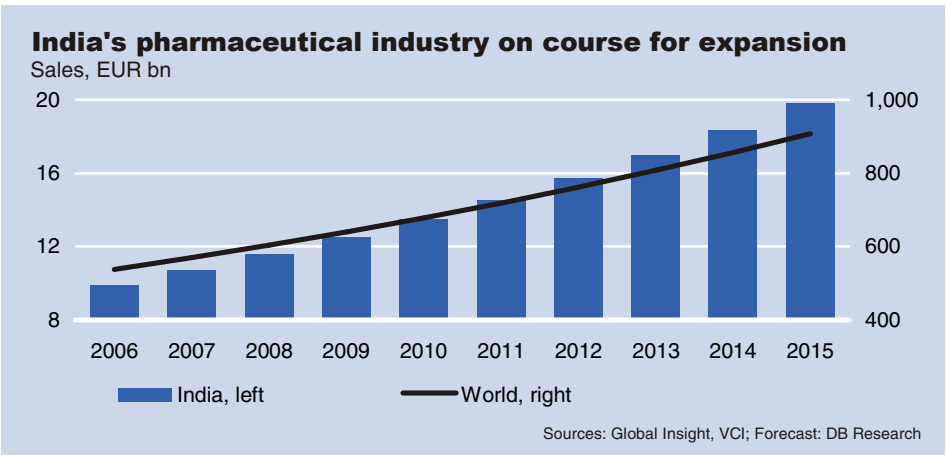
Booming sales. India is gaining in importance as a manufacturer of pharmaceuticals. Between 1996 and 2006, nominal sales of pharmaceuticals were up 9% per annum and thus expanded much faster than the global pharmaceutical market as a whole (+7% p.a.). Demand in India is growing markedly due to rising population figures, the increasing number of old people and the development of incomes. As a production location, the country is benefiting from its wage cost advantages over western competitors also when it comes to producing medicines.

India has discovered the world market. Since the end of the 1980s India has been exporting more pharmaceuticals than it imports. Over the last ten years the export surplus has widened from EUR 370 m to EUR 2 bn. At 32% in 2006, the export ratio was about twice as high as in 1996 and will likely rise further in the coming years (Germany: 55% at present).

New patent law necessitated reorientation. Legal changes in India in 2005 made it considerably more difficult to produce “new” generics. Foreign pharmaceuticals, which enjoy 20 years of patent protection, can no longer be copied by means of alternative production procedures and sold in the domestic market. Hence, a reorientation was required in India’s pharmaceutical industry. It now focuses on drugs developed in-house and contract research or contract production for western drug makers.

Considerable impact of hampering factors. The sector’s development is slowed by major infrastructure problems. These are, above all, qualitative and quantitative shortcomings in the energy and transport sectors.

Strong growth continues. Up until 2015, we expect pharmaceutical sales to rise by 8% p.a. to just under EUR 20 bn, compared with an increase of 6% in the world as a whole and 5% in Germany. But even then, India’s share in the world pharmaceutical market would only come to slightly over 2% (Germany: 7%). In Asia, India looks set to lose market share, as other Asian countries are registering even stronger growth.



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India's pharmaceutical industry in the spotlight

In 2001, India's pharmaceutical industry became the focus of public debate when Cipla, the country's second-largest pharmaceuticals company, offered an AIDS drug to African countries for the price of USD 300, while the same preparation cost USD 12,000 in the US. This was possible because the Indian company produced an all-in-one generic pill which contains all three substances required in the treatment of AIDS. This kind of production is much more difficult in other countries as the patents are held by three different companies. In the final analysis, the price slump was a result of India's lax patent legislation. In 2005, patent legislation was tightened, so India's pharmaceutical sector had to adjust.

1. Development of India's pharmaceutical industry

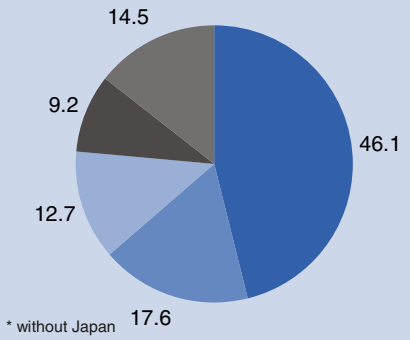
Up until the 1970s India's pharmaceuticals market was mainly supplied by large international corporations. Only cheap bulk drugs were produced domestically by state-owned companies founded in the 1950s and 60s with the help of the World Health Organisation (WHO). These state-run firms provided the foundation for the sector's growth since the 1970s. Back then, India's government aimed to reduce the country's strong dependence on pharmaceutical imports by flexible patent legislation and to create a self-reliant sector. In addition, it introduced high tariffs and limits on imported medicines and demanded that foreign pharmaceutical companies reduce their shares in their Indian subsidiaries to two-fifths. This made India a less attractive location for international companies, many of which left the country as a consequence.

Especially India Drugs and Pharmaceutical Ltd. (IDPL) is credited with speeding up the development of a national pharmaceutical industry. Several IDPL staff have successfully founded their own firms, which now belong to the top group among India's pharmaceutical companies. In the 1980s, however, the decline of state-run companies began – among other things because of increasing central government bureaucracy and insufficient corporate governance. Today, there are no (entirely) state-owned pharmaceutical companies left.

By contrast, the weakening of the patent system and numerous protectionist measures sped up the development of a major national pharmaceutical industry on a private-sector basis, which made it possible to provide the population with a large number of drugs.

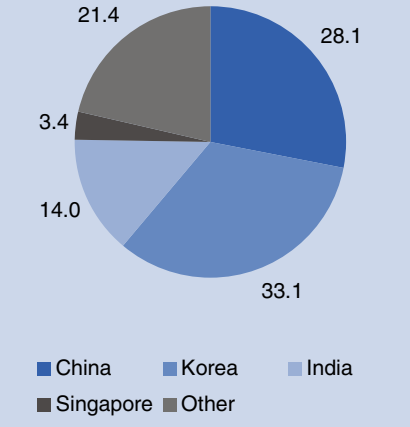
India: Third most important pharmaceuticals market in Asia*

Share in 2006 sales, %



* without Japan

Share in 1996 sales, %



Sources: Global Insight, DB Research 1

Large market share for generic drugs

As there was no efficient patent protection between 1970 and 2005, many Indian drug producers copied expensive original preparations by foreign firms and produced these generics by means of alternative production procedures. This proved more cost-efficient than the expensive development of original preparations as no funds were required for research, which contained the financial risks. This spending block may come to as much as EUR 600 m for only one drug. This kind of money could previously only be raised by large corporations in the industrial countries. The competitiveness of generics producers is based on cost-efficient production. In this field, Indian companies are currently in top position. At one-fifth, India's share in the global market for generic drugs is considerably higher than its share in the overall pharmaceuticals market (approx. 2%). At the same time, India's pharmaceutical companies gained know-how in the manufacture of generic drugs. Hence the name "pharmacy of the poor" which is frequently applied to India. This is of significance

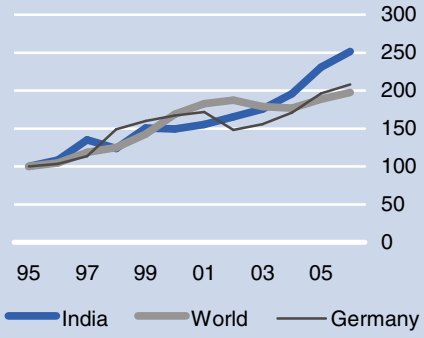
not least for the domestic market as disposable income is as little as EUR 1,900 per year for roughly 140 million of the total of 192 million Indian households[1], which means the majority of Indians cannot afford expensive western preparations.

Current situation

India's pharmaceutical industry has been in transition for several years now. This is the result mainly of the changes to drug patent legislation in 2005. Prior to the Patent Amendment Bill, not the substance itself but merely the manufacturing process was protected for a period of seven years. India's patent legislation had frequently been the reason for legal disputes with large western drug firms, especially from the US. In line with international standards, the sector is now subject to product and process patents valid for a period of 20 years. Indian companies seeking to copy drugs before the patent expires are forced to pay high licence fees. This became necessary following the signing by India's government of the TRIPS Agreement (Agreement on Trade-Related Aspects of Intellectual Property Rights). So Indian drug firms could no longer simply copy medicines with foreign patents by using alternative manufacturing processes and offer them on the domestic market.

As a consequence of these major changes to India's drug patent legislation, the country's pharmaceutical industry is undergoing a process of re-orientation. Its new focus is increasingly on self-developed drugs and contract research and/or production for western drug companies.

Above par for three years now
Drug sales India, 1995=100



Sources: Global Insight, VCI 2

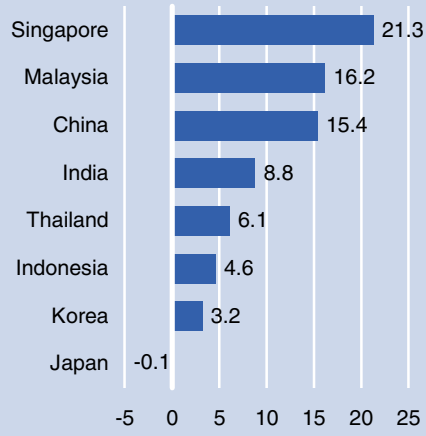
Disproportionately high sales growth

Between 1996 and 2006, nominal sales of pharmaceuticals on the Indian subcontinent were up 9% per annum and thus expanded much faster than the global pharmaceutical market as a whole (+7% p.a.). Indian companies strongly expanded their capacities, making the country by and large self-sufficient. Nonetheless, with total sector sales of roughly EUR 10 bn, India commands a less than 2% share in the world's pharmaceutical market (1966: 1.5%). This puts the country in twelfth place internationally, even behind Korea, Spain and Ireland and before Brazil, Belgium and Mexico. Among the Asian countries, India's pharmaceuticals industry ranks fourth at 8%, but has lost market share to China, as sales growth there was nearly twice as high and sales volumes nearly four times higher than in India.

India's pharmaceutical industry currently comprises about 20,000 licensed companies employing approx. 500,000 staff. Besides many very small firms these also include internationally well-known companies such as Ranbaxy, Cipla or Dr. Reddy's. With sales of roughly EUR 1 bn, Ranbaxy is currently the world's seventh largest generics manufacturer.

Currently the most important segment on the domestic market is anti-infectives; they account for one-quarter of total turnover. Next in line, and accounting for one-tenth each, are cardio-vascular preparations, cold remedies and pain-killers. By contrast, medicines against civilisation diseases (such as diabetes, asthma and obesity) or so-called lifestyle drugs (anti-depressants, drugs to help smokers to quit and anti-wrinkle formulations) are of little significance at present. All in all, the Indian pharma industry produces about 70,000

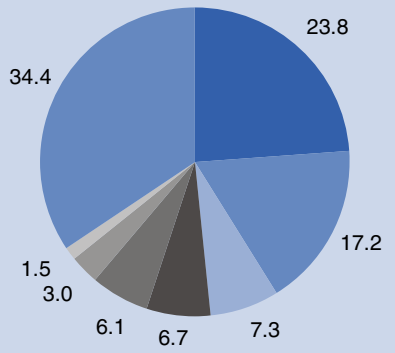
High sales of pharmaceuticals in Asia
Annual average growth 1996-2006, %



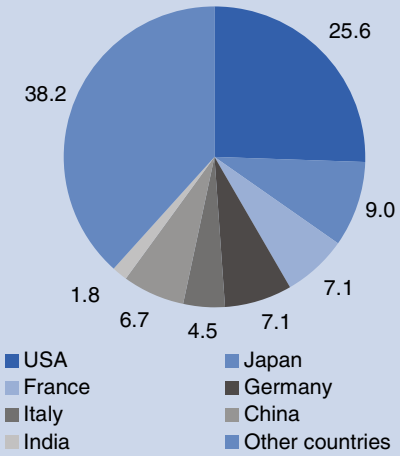
Source: Global Insight 3

[1] See Just, Tobias et al. (2006). Building up India: Outlook for India's real estate markets. Deutsche Bank Research. Current Issues. Frankfurt am Main.

US by far the world's major pharmaceuticals markets...
Shares in sales 1996, %

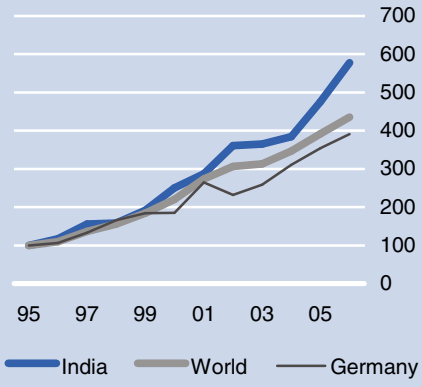


... but Asia catching up rapidly
Share in sales 2006, %



Sources: Global Insight, DB Research 4

Faster growth of pharma-ceutical exports from India
1995=100



Sources: Global Insight, VCI 5

different drugs, which is higher than the number produced in Germany (60,000).

How does this compare with China and western industrial countries?

Despite its high turnover growth rates, India cannot match the sales achieved by its two major competitors in ex-Japan Asia, China and Korea. With sales to the tune of EUR 36 bn or four times as much as India's, China is clearly the leader in the pharmaceuticals market. Korea, too, outstrips India, with pharma sales amounting to EUR 14 bn. High growth rates are also being registered in the pharma-ceuticals markets of Singapore, Malaysia, Thailand and Indonesia. To be sure, sales in these countries are relatively low at EUR 1-7 bn.

Compared with the large industrial countries, India's pharmaceutical industry is still relatively unimportant – despite its high growth rates. In the US, pharma sales are fourteen times higher, in Japan five times and in Germany four times. The gap with India is even more obvious when comparing per-capita sales. In the western industrial countries, per-capita sales of pharmaceuticals amount to a good EUR 400 per year, this is forty times higher than in India.

Pharmaceuticals one of the export-driven sectors

In 2006, India's pharma industry exported products worth EUR 3 bn, up from only EUR 650 m in 1996, which was due to the fact that demand for low-cost generic drugs is strongly on the rise, above all in the US, Europe and Japan. At 22%, export growth in 2006 was even twice as high as the global average and in Germany (roughly 11% each). Meanwhile, India's export ratio has reached 32% – about double the figure registered ten years ago. For some time now, India has exported more pharmaceutical products than it imports. Over the last ten years, the export surplus has risen from about EUR 370 m to currently just under EUR 2 bn.

Slightly over 80% of the drugs are sold to the US and Europe, where India's companies are benefiting from the population's purchasing power as well as regulatory changes (greater cost-consciousness). By contrast, traditional sales markets such as Russia, Southeast Asia, Africa and Latin America have lost in importance. However, only 60 production locations of India's pharma sector have been certified by the World Health Organisation, which implies they comply with the strict quality standards imposed by the US Food and Drug Administration (FDA). Compliance with FDA standards is the precondition for selling products on the important US market.

2. Medium-term outlook

High GDP growth rates, rising population numbers and, as a result, a growing middle class are the drivers of India's pharmaceutical market.

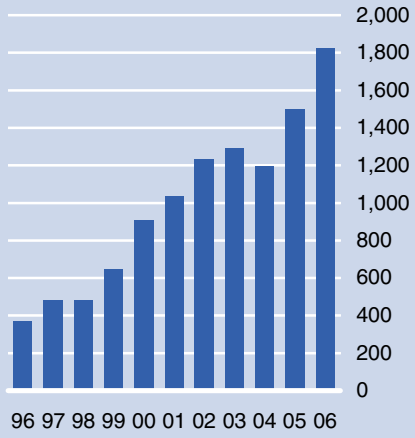
Boost from population growth

India's pharma sector is receiving a major boost from population growth. According to UN estimates, the population total looks set to rise from 1.1 bn at present to 1.4 bn in 2020. Up until 2020 India will see as many children being born as there are people living in Germany, France, the UK and Italy together. By 2025, India will probably have overtaken China as the world's most populous country. Its population growth results not least from higher life expectancy. This is attributable, among other things, to improved preventive healthcare. Of course, though, average life expectancy in

India is still markedly lower than in western countries. While the figure is 64 years for men and 66 years for women in India, life expectancy in Germany is 76 years for men and 82 years for women.

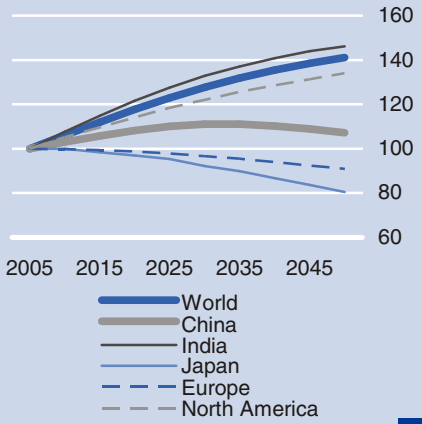
The ageing of the population in India offers considerable market opportunities. According to a UN estimate, the share of people over the age of 65 in the total population will rise from 5% currently to 8% in 2025. This would mean roughly 55 million more people aged 65 and over than today. As a result, typical age-related illnesses such as cancer and cardio-vascular diseases will be more wide-spread. The pharmaceutical sector will also receive a boost from the gradual spreading of civilisation diseases such as obesity and diabetes. According to PricewaterhouseCoopers (PwC), the number of Indians with diabetes will reach approx. 74 m in 2025 (currently 34 m); this is roughly the population of Turkey today. In the developing countries as a whole, there could be just under 230 m diabetes patients. This development should benefit India's generics manufacturers.

Export surplus for pharmaceuticals up fivefold India
EUR bn



Sources: Global Insight, VCI 6

Strong population growth in India
2005=100



Source: UN 7

Support from rising household incomes

For the next 15 years we expect average annual growth in India of 6-7%.[2] Strong income growth will broaden the middle class, an important group for foreign drugs manufacturers, as it has considerably higher incomes at its disposal than average Indians. Already today, nearly 60 m people in India's middle class, with disposable incomes of EUR 3,500 to EUR 17,000 p.a., can afford western-produced medicines. Until 2025 their number looks set to rise to approx. 580 m (+12% p.a.), according to McKinsey estimates.

Over a space of ten years, a four-member middle-class family has seen spending on pharmaceuticals grow five times over, to approx. EUR 170 p.a. People's improved income situation has also led to a growing desire to insure against illness. At this juncture, only 4% of all Indians have health insurance, but this share should rise strongly over the medium term. This will have a positive impact on the demand for drugs as people with health insurance are usually more likely to obtain prescriptions than those without cover.

Globalisation has not caused traditional medicine to be abandoned but with higher education, rising income and a change in lifestyle, western medical treatment is gaining in importance. At present the population especially in rural areas still sees western medicine as a stop-gap cure which is unlikely, though, to provide a lasting solution to health problems. Today, about 70% of the population on the Indian subcontinent depend entirely or at least in part on traditional Indian medicine which is cheaper and more easily available than western drugs.

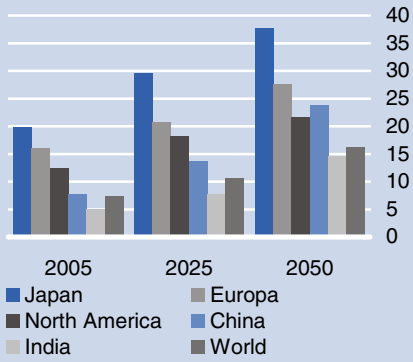
Changes in drug patent law lead to development of "original" drugs

Since 2005 India's pharma sector has no longer been protected by the country's lax patent legislation. Hence innovation must come before imitation now. Large manufacturers already began to adjust their business models some time ago and put greater emphasis on drugs research. On a long-term horizon, they do not want to limit themselves to the production of low-cost generics. Even though a number of companies are well positioned in the generics market,

[2] See Bergheim, Stefan et al. (2005). Global growth centres 2020: *Formel-G* for 34 economies. Deutsche Bank Research. Current Issues. Frankfurt am Main.

Continuing ageing of society

Share of people aged over 65 in the population, %



Source: UN 8

many of them are seeking to turn into research-based firms. However, they are facing fierce international competition in this segment. So it will take many years for India to become a serious competitor for western pharmaceuticals companies in the field of patent-protected drugs. According to the company's own information, approx. 40% of turnover at drugs manufacturer Ranbaxy stems from drugs developed in-house, which would still be about one-tenth lower than at similarly large western companies. In order to increase the speed of development and share the financial risk, there are likely to be more strategic alliances between Indian and foreign companies.

India's leading pharmaceutical companies are currently spending nearly one-tenth of their revenues on research and development. At the large western companies, however, R&D expenditure comes to 20%. Already in 1994, Dr. Reddy's launched a basic research programme and was followed by Ranbaxy and Wockhardt in 1997. Last year, as many as twelve companies engaged in research for new pharmaceutical substances. The focus here is on drugs against malaria and AIDS, as demand potential in these segments is particularly high. Malaria is the most common tropical disease, with about 300 m to 500 m new infections per year, according to the WHO. The number of people infected with HIV adds up to about 40 million worldwide.

However, compared with the large international players, the volume of research at Indian pharmaceutical companies – especially basic research – is still very small. Average R&D spending of Indian pharmaceutical companies comes to just under 4% of total turnover, compared with 9% in Germany. However, one must bear in mind the different sizes of the pharmaceutical industries in the two countries.

In this context, Indian companies are likely to benefit from the liberalisation process on the domestic capital market, which began at the start of the 1990s and is not yet completed. The loosening of financial market regulations has until recently led to an increasing presence of foreign investors, with interest focussing mostly on the equity market. Since the beginning of the 1990s, Indian companies may also be listed on foreign stock exchanges.[3]

India: Above-average growth

Real GDP, % yoy

	2006	2007	2008	2009
W. Europe	2.8	2.8	1.7	1.7
Germany	2.9	2.5	1.5	1.5
France	2.2	1.9	1.6	1.6
UK	2.9	3.1	1.7	1.6
Italy	1.9	1.8	1.0	1.5
E. Europe	6.6	6.4	5.5	5.5
Russia	6.7	8.1	6.5	6.0
USA	2.9	2.2	1.5	1.7
Japan	2.4	1.9	1.2	1.5
China	11.1	11.4	10.4	10.0
India	9.4	8.7	8.2	8.6
World	**3.7**	**3.4**	**2.6**	**2.7**

Source: DB Research 9

High level of education benefits pharma sector

The fact that despite the low level of unit labour costs India boasts a highly skilled workforce has enabled the country's pharmaceutical industry at a relatively early stage to offer quality products at competitive prices. Each year, roughly 115,000 chemists graduate from Indian universities with a master's degree and roughly 12,000 with a PhD.[4] The corresponding figures for Germany – just under 3,000 and 1,500, respectively – are considerably lower. After many chemists from India migrated to foreign countries over the last few years, they now consider their chances of employment in India to have improved. As a result, a smaller number is expected to go abroad in the coming years; some may even return.

Competitive advantages over traditional manufacturers

Irrespective of the disadvantages in some areas, India's pharmaceutical companies make use of their competitive advantages over

[3] See Asuncion-Mund, Jennifer (2007). India's capital markets: Unlocking the door to future growth. Deutsche Bank Research. Current Issues. Frankfurt am Main.

[4] See Hajos, Antal et al. (2006). Europäische Pharmaunternehmen entdecken den indischen Markt. Business in India – Part 9. io new management No. 12.

traditional drugs manufacturers in western industrial countries. Wage costs in the Indian drugs industry come to only about 30% of the European level or 20% of the US level. Overall drugs manufacturing in India is up to 50% cheaper than in western industrial countries.[5]

Development costs for drugs relatively low in India

For international pharmaceutical firms, India is attractive as a location for research primarily because of its low development costs. Clinical tests may be conducted more easily and often even yield more precise results. Thanks to higher population numbers, there are considerably more suitable persons to be found who can take part in tests than in the west. Approval for drugs to go on the market will only be granted if they have passed several tests on humans. In order to achieve this, companies usually need several thousand persons per drug. This means that roughly 100,000 volunteers must be subjected to initial examinations. In many cases, clinical tests by drug manufacturers in the west failed because their test persons had already taken a number of other medicines so the effect of the new drug could not be proven. Moreover, roughly 40 to 70% of all drug trial persons will fail to complete the test phase. By contrast, 90% of all probands in India complete the tests, not least because they seek to improve their income situation by participating. This could cause a problem if ethical aspects gain in importance; in light of the relatively high financial incentive, participants pay too little attention to potential side effects.

However, it is not altogether easy for western firms to relocate their clinical tests to emerging markets. In many cases, local hospitals must make large-scale investments and train their staff. Despite these difficulties several large international companies have chosen India as their location for clinical tests. Eli Lilly, the US pharmaceutical company, currently has several projects in India, and Pfizer (US) is carrying out clinical tests for malaria drugs there. The market for contract research in India could reach a volume of nearly EUR 2 bn by 2010, up from EUR 600 m in 2006. All in all, the global market volume for contract research is likely to rise from EUR 8 bn recently to EUR 20 bn by 2020.

International cooperation gaining in importance

So the formerly distant relationship between Indian and international companies is beginning to turn increasingly towards cooperation. A case in point is the Contract Research Agreement between an Indian and a British company, which lays down a limited number of previously agreed steps to develop a new drug in laboratories in India.

Manufacture for foreign pharmaceutical groups more important

Indian companies also see profitable business opportunities in contract production for international pharma groups. There are sufficient production capacities available following the massive expansion of plants for generics manufacture. Already today, Ranbaxy for instance produces drugs for Germany's Hexal and Ratiopharm. According to an analysis by IBEF (India Brand Equity Foundation), total contract production worldwide has a volume of approx. EUR 25 bn, which looks set to rise further to EUR 40 bn by 2010. Growth is driven mainly by the relocation of production for preparations whose patent protection will expire soon. Building a pharmaceutical plant in India is about 40% cheaper than in Europe or the US, and manufacturing costs for pharmaceuticals are

[5] See KPMG (2006). The Indian Pharmaceutical Industry: Collaboration for Growth.

markedly lower. This cost advantage provides a strong incentive to move production also for western firms.

Given the improvements in patent law and capital protection, the Indian market has become attractive again for western drugs manufacturers. Add to this the relatively low wage costs, employees' good qualifications and expectations of strong growth in the market. According to the German-Indian Chamber of Commerce, twenty German drugs companies have already started operations in India.

Indian pharmaceutical companies increasing investment abroad

Large drug makers export to more than 100 countries

In the coming years, Indian drug makers will likely continue to look to foreign countries to expand their operations. An example for the global orientation of Indian pharmaceutical companies is Ranbaxy. Currently, Ranbaxy exports its products to 125 countries, has subsidiaries in nearly 50 countries and production plants in more than 10 countries. The US has become its most important sales market. Sales to the US recently amounted to just under 30% of Ranbaxy's total sales, while sales to Europe came to nearly 20%. Overall, approx. 80% of the manufacturer's total sales are generated abroad.

According to PwC, about half of all larger Indian drug makers are looking to expand abroad through take-overs, whereas less than 20% of their Chinese competitors pursue that strategy. Targeted markets are still the US and Europe. In many cases, there are institutional obstacles to overcome first. More often than not, Indian medicines fail because doctors and pharmacists in other countries are reluctant to prescribe or hand out drugs produced in India. There is a tendency to favour locally/nationally produced drugs. For this reason, drug companies from India are finding it hard to gain a foothold in western markets.

Over the past few years, for instance, Ranbaxy has bought companies in Romania, Belgium, Italy and France, and intends to become the world's fifth largest manufacturer of generics by 2012. Wockhardt is operating in Germany and the UK, as is Cadila in France. At the beginning of 2006, Dr. Reddy's bought Betapharm, a German generics manufacturer, for almost EUR 500 m.

Germany a lucrative market for Indian pharmaceutical companies

The German market is particularly attractive for Indian companies as generics prices there are relatively high by international standards. Compared with the UK, a generic drug costs nearly 50% more in Germany. So it cannot come as a surprise that Indian producers are loath to leave the lucrative German market to the large German generics companies such as Ratiopharm, Hexal and Stada alone.

Factors weighing on the pharmaceuticals industry

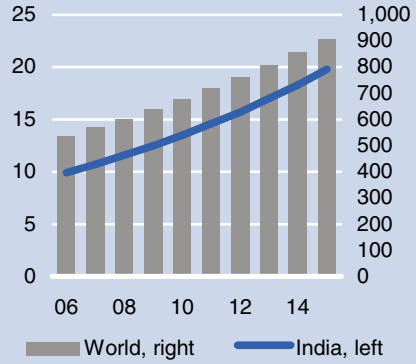
Besides the positive outlook for India's drugs industry, there are also a number of adverse factors. These include, above all, serious shortcomings in infrastructure.

Compared with western industrial nations, energy prices are low but companies must expect repeated power cuts and offset fluctuations in the electricity network with the help of emergency power generators. In many areas, the hot and humid climate makes high demands on climate technology at production plants and on the refrigeration of finished products. Insufficient energy supply also leads to a situation where production hours must be handled very flexibly. This shortage can only be eliminated in the medium term and will require maximum effort. However, India's government

intends to expand power generation capacities to roughly 240 GW by the end of the 11th five-year plan in 2012. This would mean a more than 100 GW, or nearly 90%, increase on today's total.

Moreover, the country's lacking transport infrastructure is increasingly turning into a major obstacle. The pharmaceuticals industry is especially dependent on road transport. However, the major transport links are chronically congested and many are in a poor state of repair. Of the total road network covering just over 3.3 million kilometres, only about 6% are relatively well built National and State Highways. In many cases, there are no paved surfaces or there is only one lane for all traffic. But the government has launched an extensive investment programme entitled the National Highway Development Programme, to be implemented by the middle of the next decade.

India's pharmaceutical sales set to double
Sales, EUR bn



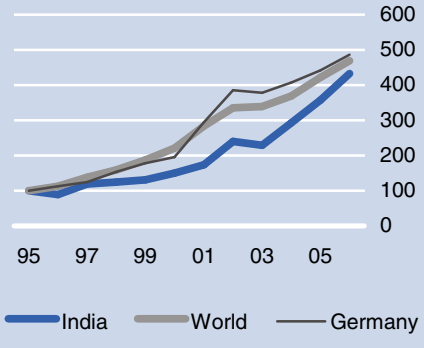
Sources: Global Insight, VCI; Prognose: DB Research 10

Outlook for India's pharmaceutical industry up to 2015

All in all we expect India to see drugs sales rise by an annual 8% to nearly EUR 20 bn between 2006 and 2015. To be sure, this growth rate is higher than that seen for Germany (+5% p.a.) and the entire world (+6%). Nonetheless, India's share in world pharmaceutical sales will rise only marginally to a good 2%.

Growth of India's pharmaceutical industry and thus its share in global drugs manufacturing could even be slightly higher if the infrastructure problems could be remedied quickly. While the pharmaceutical industries of China and Singapore will likely continue to show much higher growth, India looks set to even lose market share in Asia. Mainly affected by this development are smaller Indian companies with sales of up to EUR 10 m which focus on traditional Indian medicines. It is likely that many of these companies will merge or disappear from the market altogether. By contrast, large pharmaceutical companies with sales volumes of over EUR 50 m will be able to increase their sales as they will be better equipped to adjust their product ranges to the demands of international markets. These firms will expand their capacities in India – mostly in the sector's clusters surrounding Delhi and Mumbai – but will also take over firms in the industrial countries. Medium-sized businesses will benefit from increasing contract production for western firms.

Strong growth of India's pharmaceutical imports
1995=100



Sources: Global Insight, VCI 11

All in all, the share of pharmaceuticals in the total chemicals industry in India will come to roughly 17% in 2015 (2006: 18%), compared with 28% in Germany (from 24% in 2006). For the world as a whole, the ratio will likely be only slightly lower than the German level (25%).

Although India's pharmaceutical sector is growing strongly, the population's demand for drugs cannot be met by the country's own production in all segments. At EUR 1.5 bn, India's total drugs imports are comparable in size to Norway's entire pharmaceuticals market. Imports look set to continue to rise strongly.

On a medium-term horizon, one-fifth of the world's pharma sales will be accounted for by the emerging markets. China will then be among the group of the five largest manufacturers, while India will join the group of the ten largest suppliers.

High export growth of Indian drugs makers

In the course of increasing contract production and low-cost manufacture of proprietary medicines, exports are expected to receive a major boost in future. However, Germany's very high

export ratio of currently 55% will hardly be achieved by 2015, as this would imply more than a trebling of total exports. In this context, it should be considered that take-overs of foreign companies will lead to a strong increase in foreign production by Indian manufacturers, which will have a dampening effect on exports. A positive impact on exports is expected from foreign investment in India, though.

Companies eager to tap global markets

Competition between Indian firms and western drug makers will probably be much fiercer as the companies from Asia are increasingly seeking to tap the global markets. The generics market will grow in both the developed countries and in the emerging markets. Most vital medicines are already exempt from patent protection today. The manufacture of generic drugs in that segment is growing strongly. In addition, patents for high-turnover drugs with a volume of EUR 100 bn will expire in the next few years. Of these drugs, roughly one-third will likely be produced by Indian companies.

3. Summary

The pharmaceutical industry is expanding worldwide. For some years now, it has been benefiting from the particular dynamics of the Asian economies as both purchasers and producers. It is not only the markets in China and India that register high growth rates. Annual growth rates are also impressive in Singapore, Malaysia, Thailand and Indonesia.

Thanks to low costs, qualified staff and extensive production and research units India is becoming more and more of a major pharmaceutical location. Drivers of growth are the growing population, which at 1.5 bn should exceed that of China already in 2025, as well as the larger number of older people with markedly higher demand for medicines. Add to this the increase in middle-class households which have considerably higher incomes at their disposal than the population on average.

India's pharmaceutical industry in reorientation process

As a result of the new patent legislation, the country's pharmaceutical industry is reorienting itself and focussing on self-developed medicines and/or contract research and production for western drugs companies. Also the expansion of Indian firms abroad looks set to continue – preferred target markets are the US and European countries.

Despite the positive outlook India will lose market share in the Asian market in future. The winner, first and foremost, will be China, which will remain the No 1 thanks to its expected higher sales growth and volume, as Indian companies' strategic reorientation away from generics to original preparation is still in its infancy. The sooner India manages to close the infrastructure gap, the higher growth will be in the country's pharmaceutical industry.

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