

**MARKET ANALYSIS OF GLOBAL PHARMACEUTICAL
INDUSTRIES AND TREND ESTIMATION**

REPORT SAMPLE

8/16/2015



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1.1 Pharmaceutical Company

A pharmaceutical company, or drug company, is a commercial business licensed to research, develop, market and/or distribute drugs, most commonly in the context of healthcare.

Pharmaceuticals companies devote themselves to making medicines that helped patients. They also made profit too.. After the Second World War, Merck & Co and other big pharmaceutical companies began a golden age in drug development producing better antibiotics, vaccines and other treatments that transformed patients' lives

Medical innovation looks rather different now. In the 1990s many big companies made billions from small improvements in care. Then a number of important patents expired and manufacturers began losing intellectual-property protection for their medicines. Pharmaceutical companies such as Merck trimmed their research

departments. Since then a new crop of drug companies has sprung up. Genomics, the study of man's genetic code, has brought dramatic advances in the understanding of disease. And recently biotechnology stocks have soared. In "The Antidote", Barry Werth uses one company to describe a new era for the drugs business.

Developing a medicine requires stamina and mountains of capital. Scientists can struggle for their whole careers, only to have a medicine foiled by side effects or anxious regulators. Given this, it takes a certain type of person to want to start a drug company. In the 1980s Josh Boger was one such man: brilliant, with a confidence that at times approached zealotry.

Mr Boger left Merck in 1989, a heyday for that firm, to start Vertex. His goal was not just to create new drugs, but to create a new type of drug company—a "social experiment", as Mr Werth describes it. In an earlier book, "The Billion-Dollar Molecule" (1994), Mr Werth recounted Vertex's early days. Twenty years later "The Antidote" describes its journey from scrappy start-up to public company with more than \$1 billion in annual revenues.

It was a long, hard trudge—and still is. Mr Werth describes one scientist "isolating protein from calf thymus, on his swollen feet past dawn night after night...his hands raw and eyes -burning from solvents until he blanked out". Competition among companies is fierce as they race to publish data that prove how effective their drugs are. Executives are ushered in, only to be kicked out again. Mr Boger was replaced in 2009. This relentless work is broken by occasional moments of euphoria, as when Vertex transformed the treatment for cystic fibrosis. Until then many patients died before they were 40.

Mr Werth keeps a brisk pace, describing Vertex as the antidote to older pharma and Merck in particular. He infuses the book with drama, even managing to make a regulatory meeting seem exciting. In general he explains scientific concepts clearly, though readers must endure some technobabble. ("Of course," Mr Boger muses at one point, "they were nucleotide guys.")

But Mr Werth's account comes at a cost. Vertex gave the author access to its executives and scientists. Having devoted two books to the firm, Mr Werth at times seems too allied with it. "The Antidote" describes Mr Boger as an evangelist; in Mr Werth, he seems to have found a convert

2.3 Leading Companies in the Generic Industry

- In recent years Big Pharma has begun to look beyond brand-name drugs to the generic markets.
- Teva Pharma (TEVA) is the largest public company in the generic drug industry with trailing 12month sales over \$9 billion and a market cap of just under \$34 billion, and it derives over half of its revenues from generic drugs.
- With the rising costs of healthcare, governments and payers alike are pushing for increased generics usage, and Big Pharma companies like Bayer and Pfizer are paying attention, striking deals with generics companies and even building units of their own.

- The generic industry is currently worth an estimated \$ 225 billion US, and the largest four generic companies worldwide by sales (Teva, Sandoz, Mylan, & Watson) account for nearly 50% of generic prescriptions in the US and 40% worldwide.

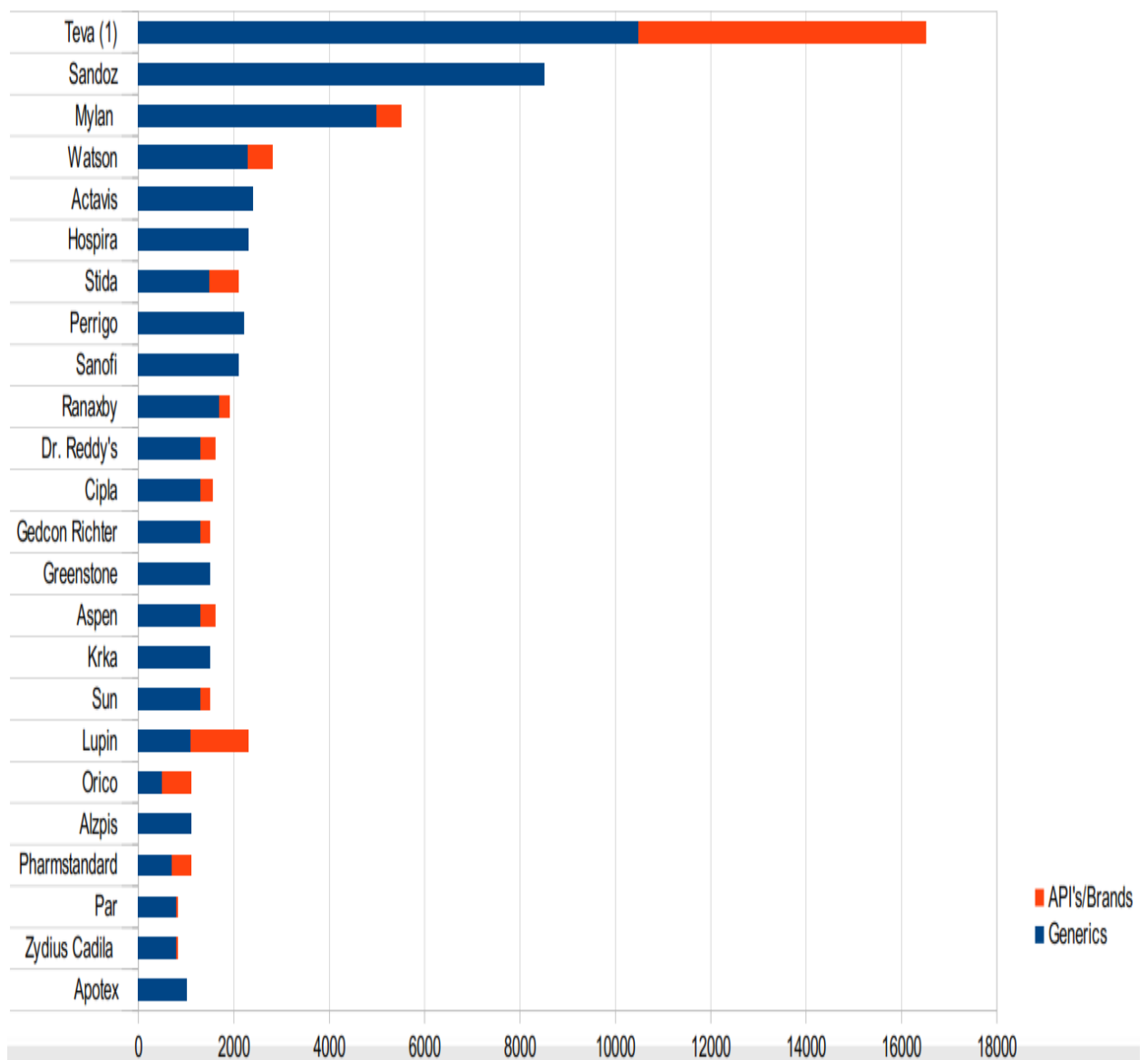
- Teva is the world's biggest generic company and is continuing to climb. During the course of 2010, Teva launched 18 generics that targeted drugs with 12.2 billion in U.S. Sales.

- Teva reported that it accounts for 21.8% of total U.S. Generic prescriptions. Teva manufactures 71 billion tablets a year in 77 pharmaceutical and API facilities around the world.

- Sandoz is the number two generic company worldwide. It is Novartis' generic unit, located in Germany with an 7.8 % market share. The company has strong results from the U.S., Canada, Russia, Italy, Japan, and biosimilars.

- Sandoz has three strategic priorities:
 1. To be first-to-market as originators' substance patents expire or become unenforceable;
 2. To be cost competitive by leveraging economics of scale in development and production;
 3. To differentiate Sandoz based on its extensive global reach and advanced technical expertise in the development

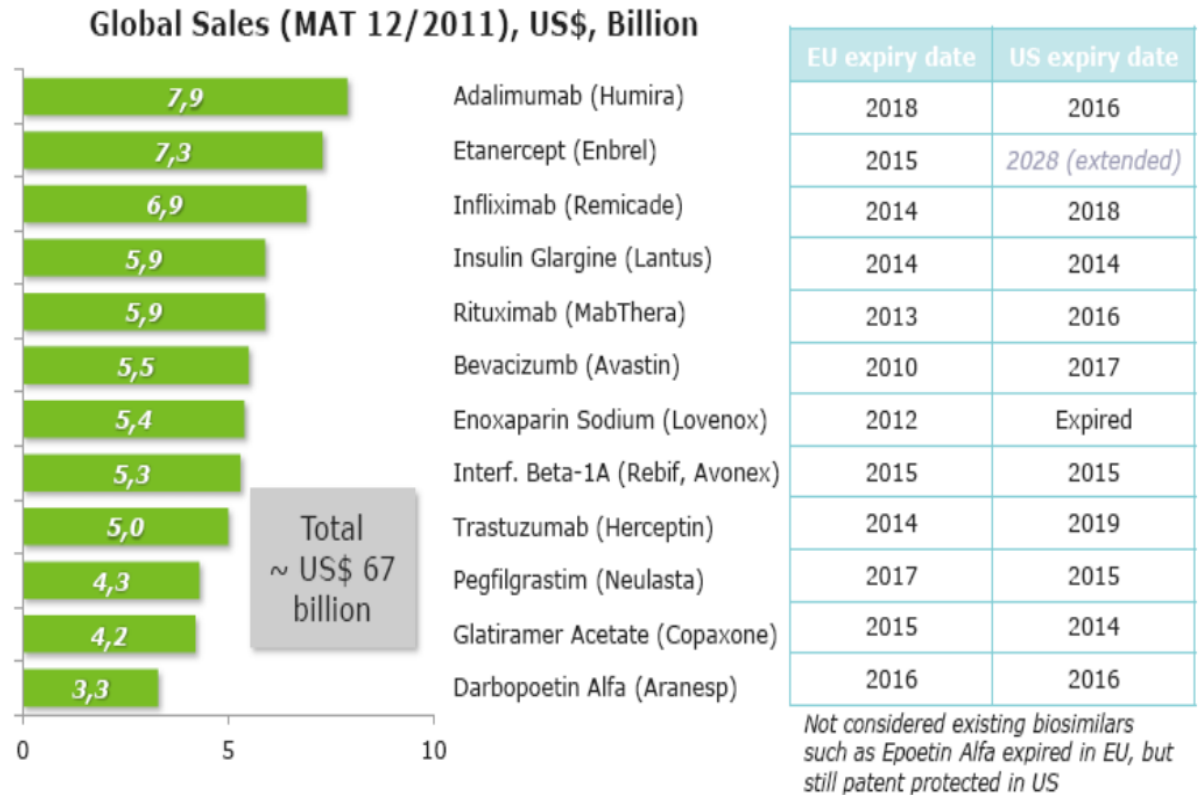
- Third largest is Mylan with a 11.3% market share

Figure 2.1 Leading Companies in the Generic Industry

Consolidation has been a dominant theme for generic market leaders. The following graph shows the trend in consolidation of revenue in few generics companies.

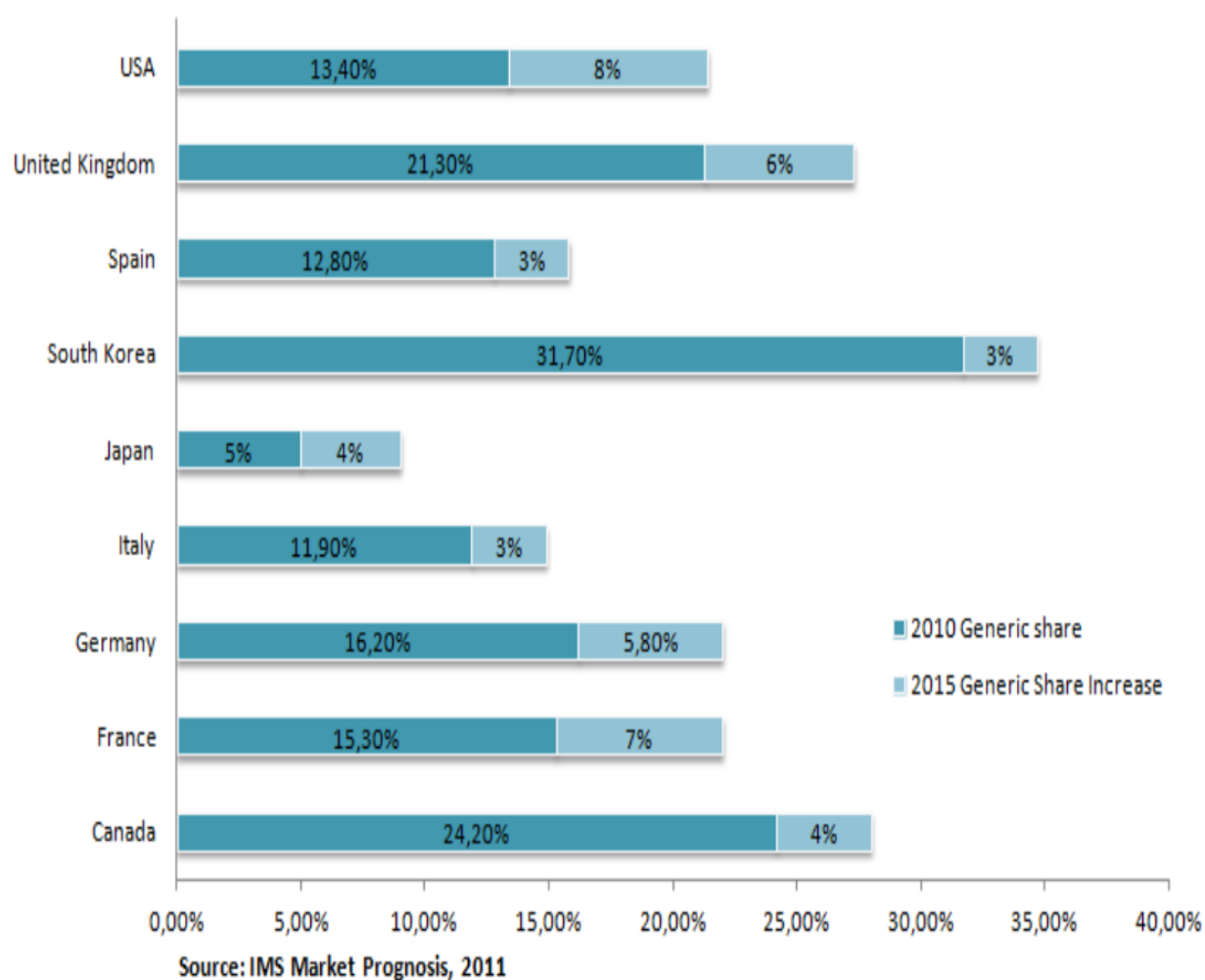
Twelve compounds will present a US\$ 67 billion opportunity

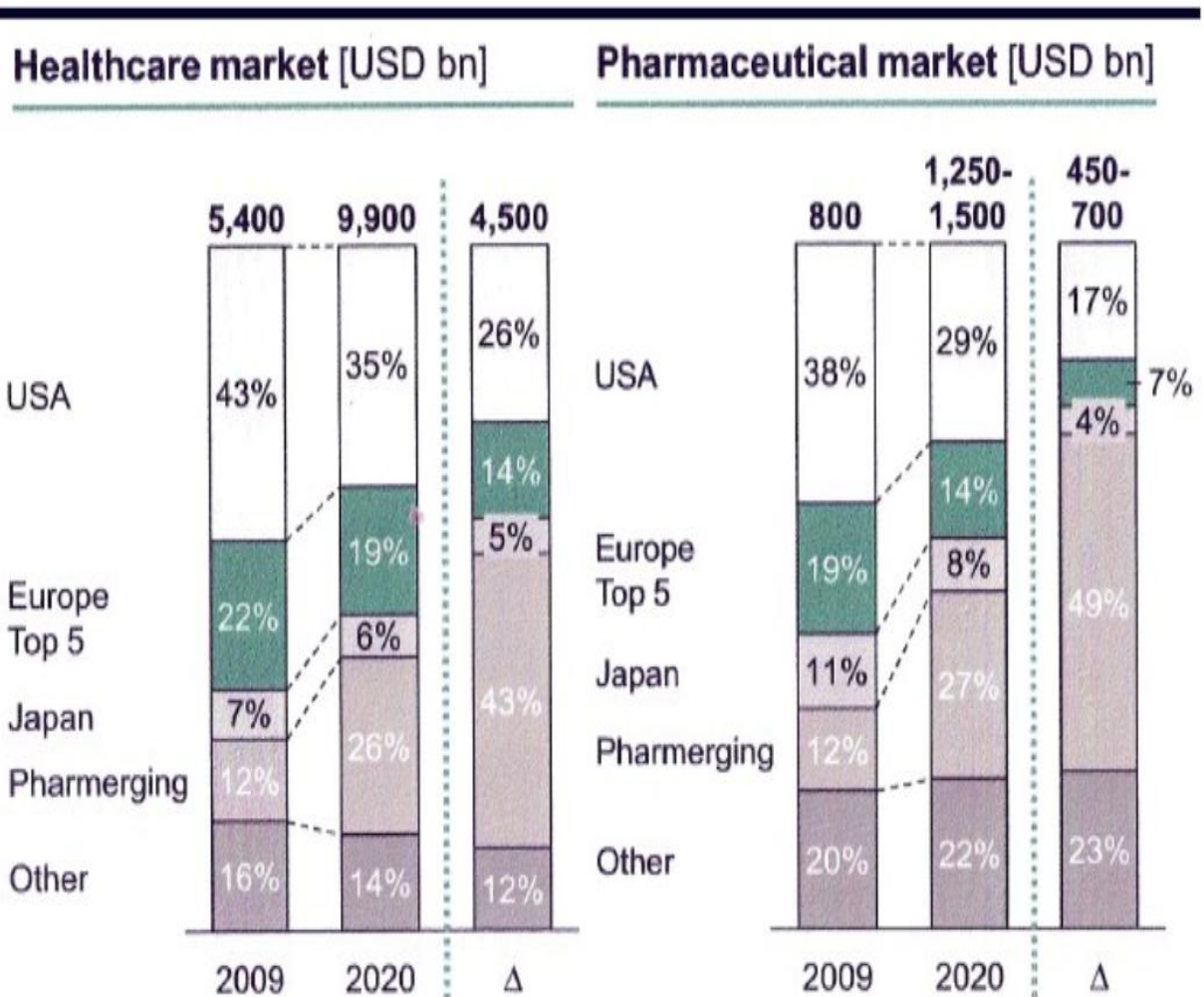
All these products will lose patent protection by 2020, but Enbrel whose US patent has been extended until 2028



Source: IMS MIDAS, 12/2011, IMS Patent focus

Generic Drugs: Market Share Forecasts for Developed Markets to 2015





3.1 German pharmaceutical Industry

In 2011, Germany's drug market was the fourth largest worldwide after the United States, Japan and China, with annual sales of 32.25 billion Euros. The German government remains committed to its fiscal austerity program and to further spending cuts by 2014. Market consolidation continues, and drug prices have been under pressure from de-reimbursement, fixed-level drug pricing and referencing pricing schemes. Between 2011 and 2015, the market is projected to grow annually at 3%, with the fastest growth in the specialized hospital market for new and expensive pharmaceuticals. The statutory health insurance system accounts for about 80% of the market, with tight reimbursement rules, greater use of generics and downward pressure on generic prices due to the rebate system and the full VAT of 19% levied on drug sales. Opportunities also exist for local production, research and acquisition of German drug firms.

Table 3.1.1 Main suppliers of pharmaceuticals to Germany (in million Euros)

	2006	2007	2008	2009	2010	2011

Switzerland	2,729.9	4,502.61	4,333.46	4,845.13	5,463.7	6,376.5
USA	5,027.26	5,931.85	6,501.5	7,193.86	6,253.57	5,728.23
Ireland*	8,283.95	8,626.71	8,985.03	7,934.95	6,751.54	4,653.31
Netherlands	952.55	1,369.03	1,224.94	1,182.51	1,954.97	4,127.49
United Kingdom	1,815.59	1,847.81	1,682.72	2,299.63	2,569.65	3,313.73

source: German Pharmaceutical Industry Association/BPI; December 2012)

3.2 Russian Pharmaceutical Industries

Russia, in the times of the Soviet Union, preferred to live by five year periods. Today's Russia is developing larger market economy. In 2013, Russia has launched a number of new federal programs related to a variety of areas - from health care to aviation industry. Over the period of 2013 - 2015, the expected funding of the 50 federal target programs will be at 1,021 billion Rubles in 2013, 926.2 billion Rubles in 2014 and 935 billion Rubles in 2015.

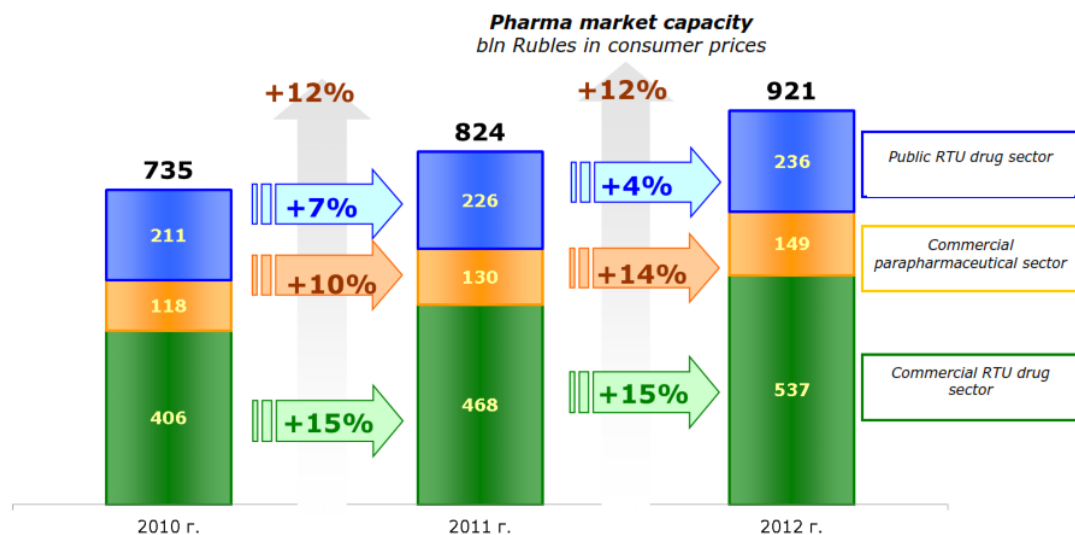
One of the first long-term projects related to the pharmaceutical market was the **Concept of Long-Term Socio-Economic Development of the Russian Federation until 2020** adopted in 2008.

In 2012, the **Strategy for the Development of Medical Science in Russia until 2025** was approved. The strategy includes measures to develop innovative products and critical technologies. The main purpose of the document is to create high-tech innovative products and use them in public health practices. The expected share of innovative products on the market will be up to 10% of the amount of newly registered products. Today, Russia is in the fourth place after China, the U.S. and Japan in the total number of scientists. As regards research funding, Russia ranks ninth in the world. As regards the number of scientific publications, it is in the 15th - 18th place.

On December 24, 2012, the State Program **Development of Health Care of the Russian Federation until 2020** was approved. Over 33 trillion Rubles will be allocated from budgets of all levels to support its implementation. The State Program measures are expected to be implemented in two phases: the first phase - from 2013 through 2015, the second phase - from 2016 through 2020. The State Program includes 11 subprograms: "Prevention of Diseases and Promotion of Healthy Lifestyles. Development of Primary Health Care"; "Enhanced Provision of Specialized, including High-Tech, Health Care, Emergency Care, including Emergency Specialized Care, Medical Evacuation", etc.

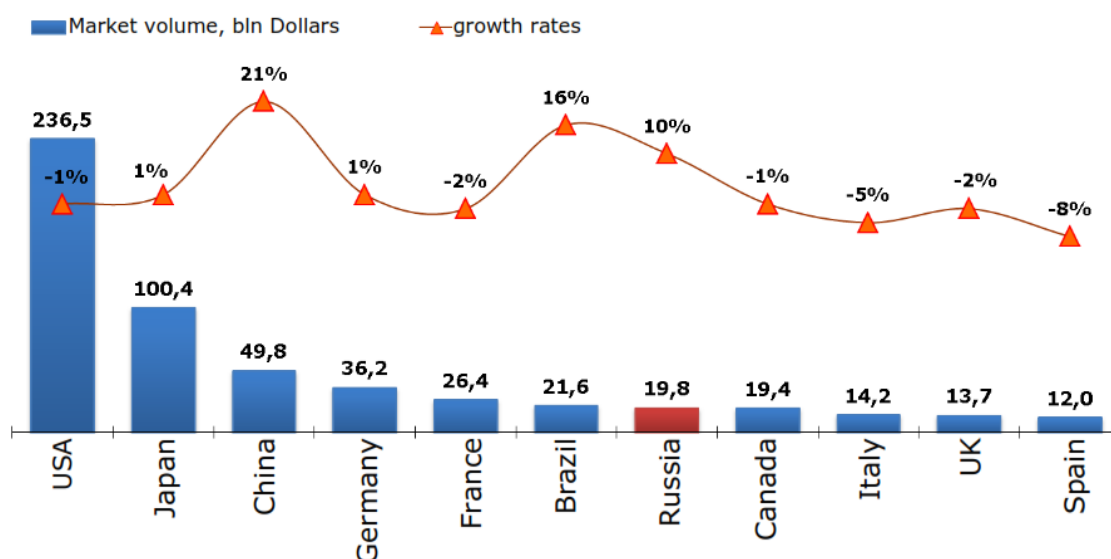
The **State Program of Development of Pharmaceutical and Medical Industries** was adopted. It involves the allocation of more than 100 billion rubles out of the federal budget by 2020. The State Program is to ensure the application of international standards in the industry, and the inflow of foreign investments.

Figure 3.2.1 Russian Pharmaceutical market capacity



Source: DSM Group. ISO 9001:2008

Table 3.2.3 List the TOP 20 Manufacturers that are Sales Leaders in the Commercial Market in Russia in 2012.



Source: IMS Health, DSM Group. ISO 9001:2008

Note: The RTU drug pharmacy market = the commercial segment of RTU drugs + DLO

Russia is still 3 and 5 times behind, respectively, the average European and US drug consumption. Only Brazil and China have smaller per-capita drug consumption than Russia (140 Dollars) at 115 and 38 Dollars, respectively.

Figure 3.10 Shows the Index of Prices for Different Groups of Drugs

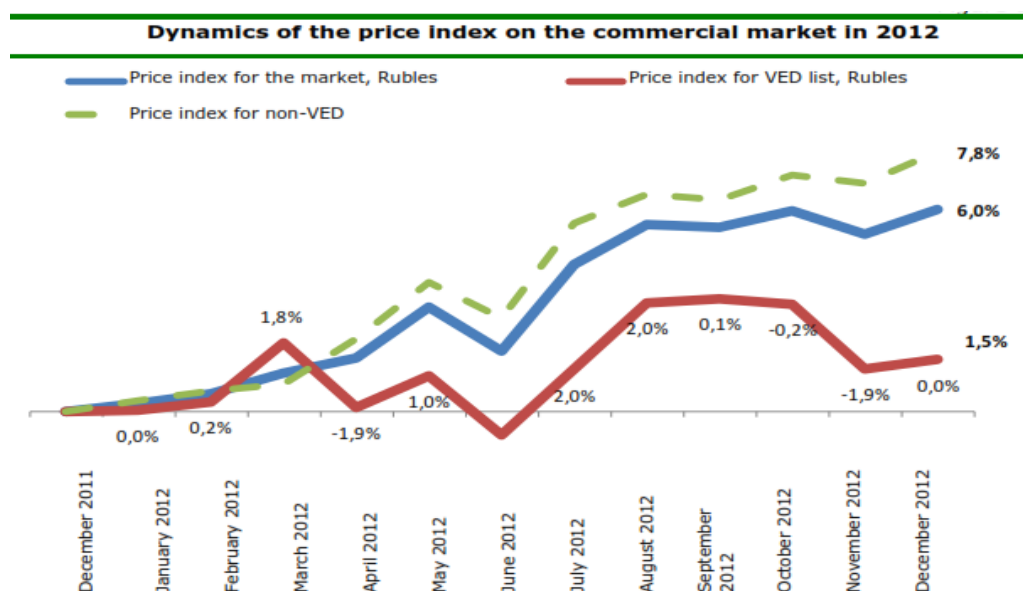


Figure 3.3.14 Market Dynamics and Structure Focus on OTC.

Commercial OTC market dynamics, 2013, RUR bn

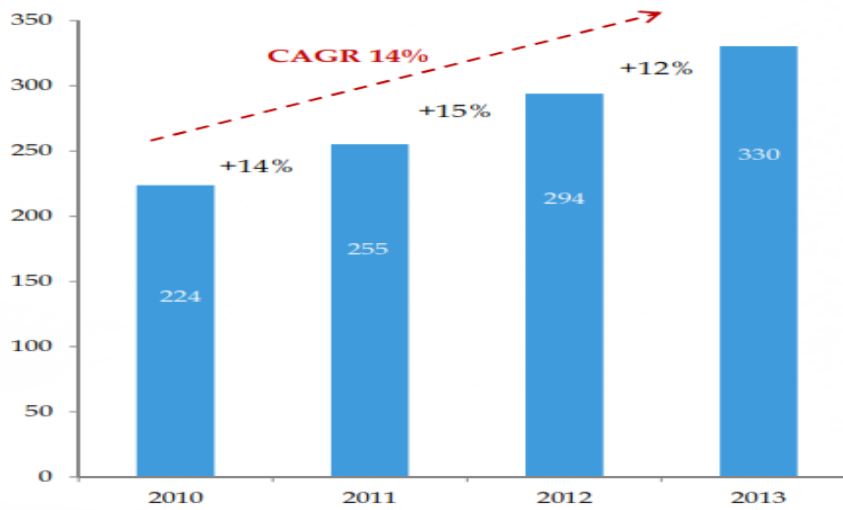


Figure 3.3.15 Commercial market structure, 2013

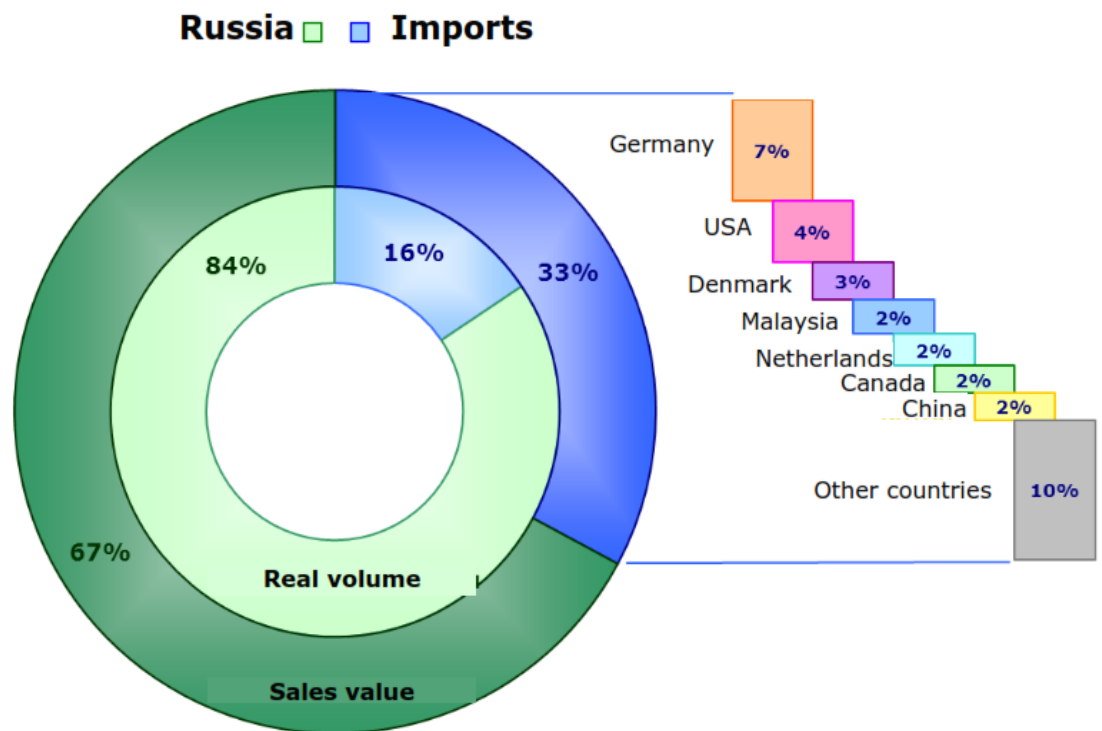
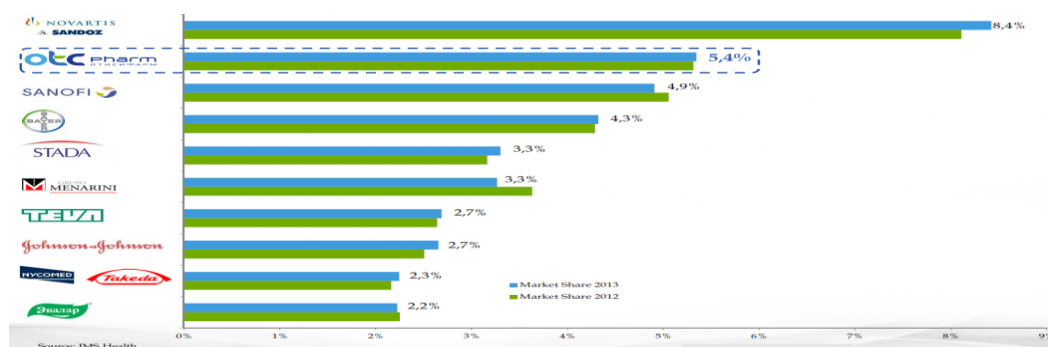


Figure 3.3.16 Leadership position on Russian OTC Market



3.4. 1. Russian Pharma Strategy 2020

PLANNED STRATEGY FOR THE PHARMACEUTICAL INDUSTRY AND R&D

The main objective of the Russian state policy regarding the development of national pharmaceutical industry for the period up to 2020 is creating conditions for the transition of the Russian pharmaceutical production towards an innovative development model. For this purpose and by special order of the government, the “Strategy of Development of Pharmaceutical Industry in the Russian Federation” was developed and approved by the Ministry of Industry and Trade in 2008 ("Pharma 2020" Strategy).

Table 3.4.2. Innovative Drugs, Production Planned to Start in Russia by 2020

List of INNs - innovative drugs	
1. Abacavir	34. Quetiapine
2. Alemtuzumab	35. Lamivudine
3. Alteplaza	36. Lamivudine + Zidovudine
4. Amino-acids for parenteral foods + other drugs (Dextrose + mineral salt)	37. Lapatinib
5. Amisulprid	38. Levodopa+Benserazid
6. Aripiprazole	39. Levosimendan
7. Atazanavir	40. Lenograstim
8. Atracurium besylate	41. Linezolid
9. Basiliximab	42. Lopinavir + Ritonavir
10. Bevacisumab	43. Moxifloxacin
11. Bortezomib	44. Nadroparin

12. Budesonide + formotero	45. Olanzapine
13. Valganciclovir	46. Omalizumab
14. Voriconazole	47. Paliperidone
15. Gadobutrol	48. Peritsiazin
16. Gadodiamid	49. Peginterferon alfa-2a
17. Ggadopentetic acid	50. Peginterferon alfa-2|3
18. Ganciclovir	51. Pegfilgrastim
19. Gefitinib	52. Rabeprazole
20. Hydroxyzine	53. Rituximab
21. Goserelin	54. Rocuronium bromide
22. Granisetron	55. Ropivacaine
23. Daclizumab	56. Salmeterol + fluticasone
24. Darbepoetin alfa	57. Sevoflurane
25. Didanosine	58. Sertindole
26. Dinoprost	59. Sirolimus
27. Dornase alpha	60. Sorafenib
28. Drotrecogin alfa [activated]	61. Tacrolimus
29. Ziprasidone	62. Temozolomide
30. Zuclopenthixol	63. Tenecteplase
31. Imatinib	64. Tiotropium
32. Imiglucerase	65. Topotecan
33. Caspofungin	

3.5 US Pharmaceuticals Market

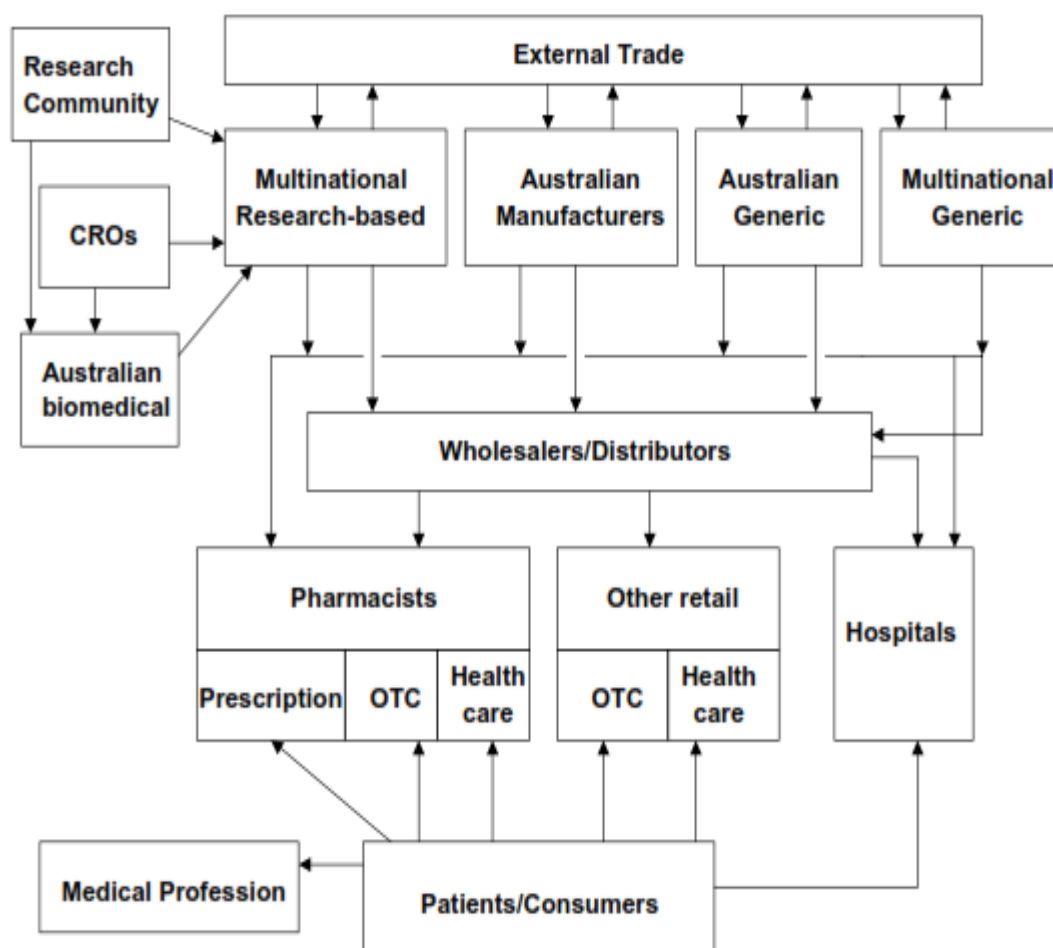
These organizations are searching and investing in promising projects in order to reach the goals and objectives of the Strategy, including projects of foreign companies that are implemented on

ertheless left major coverage gaps. Some were by choice, notably among younger Americans who elected not to buy insurance. But in many instances self-employed or part-time workers found private individual insurance plans unaffordable even as they failed to qualify for public insurance.

	2010		2015		2020	
	Population	Rx (per capita)	Population	Rx (per capita)	Population	Rx (per capita)
Under 26	108,528,000		110,205,000		110,680,000	
Private insurance	63,602,000	209	68,737,000	300	69,033,000	431
Public insurance only	32,192,000	368	37,139,000	528	37,631,000	758
Uninsured	12,734,000	109	4,329,000	156	4,016,000	225
26-64	158,889,000		163,463,000		167,247,000	
Private insurance	115,778,000	915	127,838,000	1,314	136,923,000	1,886
Public insurance only	15,619,000	2,376	22,558,000	3,411	23,582,000	4,897
Uninsured	27,492,000	275	13,068,000	395	6,742,000	567
65 and over	41,158,000		47,695,000		55,969,000	
Medicare only	15,683,000	2,036	18,174,000	2,923	21,327,000	4,196
Medicare and private	20,799,000	2,350	24,102,000	3,374	28,284,000	4,843
Medicare and other public	4,062,000	2,953	4,707,000	4,239	5,524,000	6,086
Uninsured	614,000	1,577	711,000	2,264	835,000	3,250
Total	308,575,000	270,907	321,363,000	446,956	333,896,000	699,517

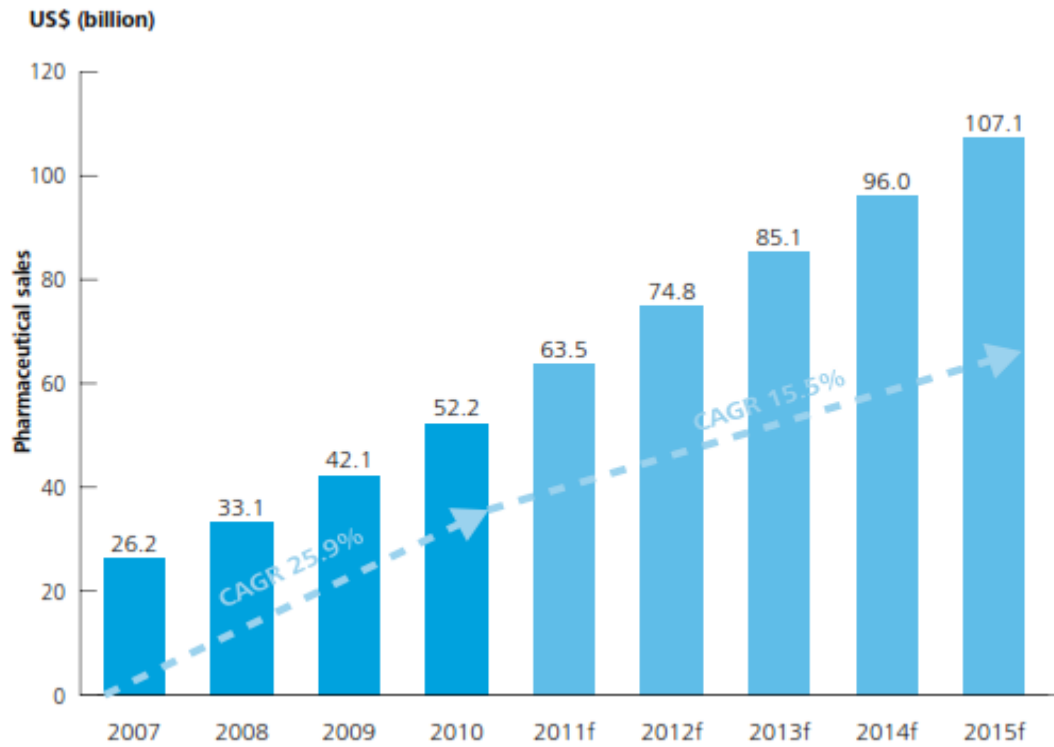
3.6 Australia Pharmaceutical Industry

FIGURE 3.6.1 The Pharmaceutical Sector in Australia



3.7 China Pharmaceuticals Industry

Figure 3.7.5 Pharmaceutical sales in China, 2007–2015



US\$1 = RMB 6.79

Source: Southern Medicine Economic Institute (SMEI), Association of the European Self-Medication Society (AESGP), BMI

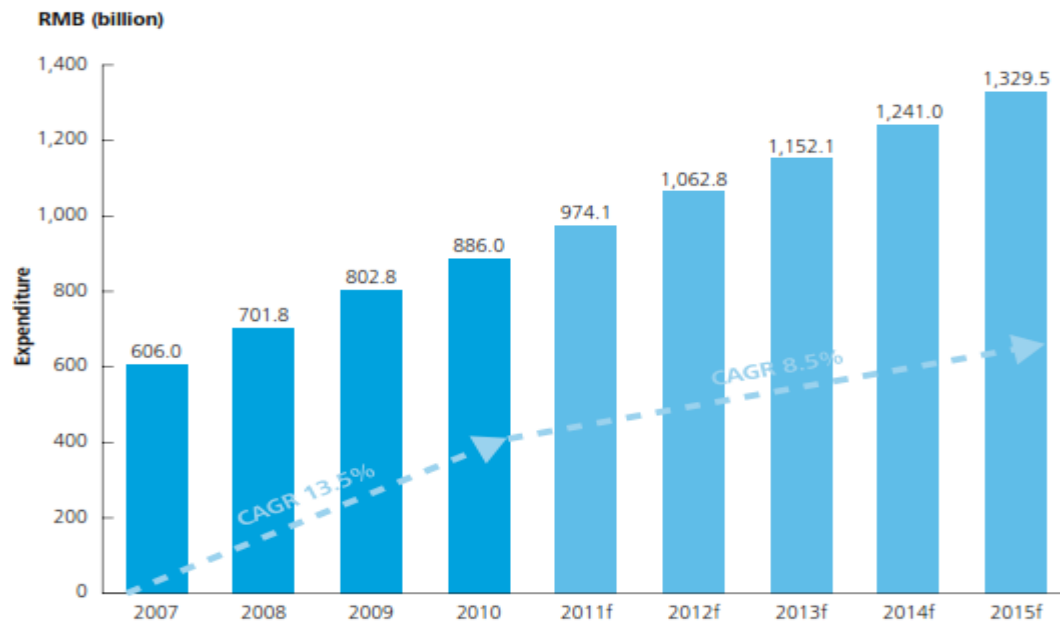
Figure 3.7.6 Private healthcare expenditure in China, 2007–2015

Figure 3.7.8 Healthcare Expenditure per Capita in China, 2007–2015

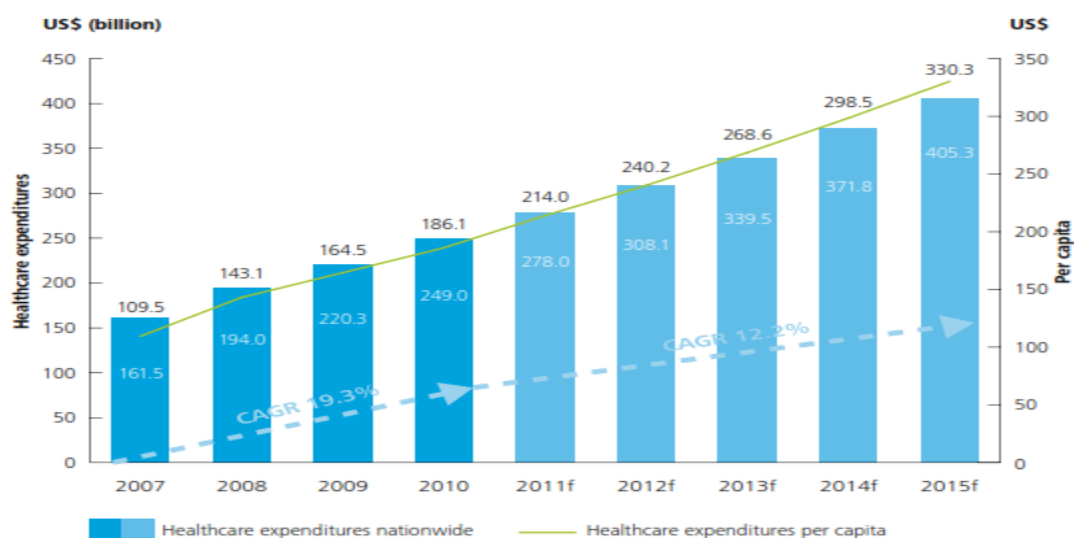
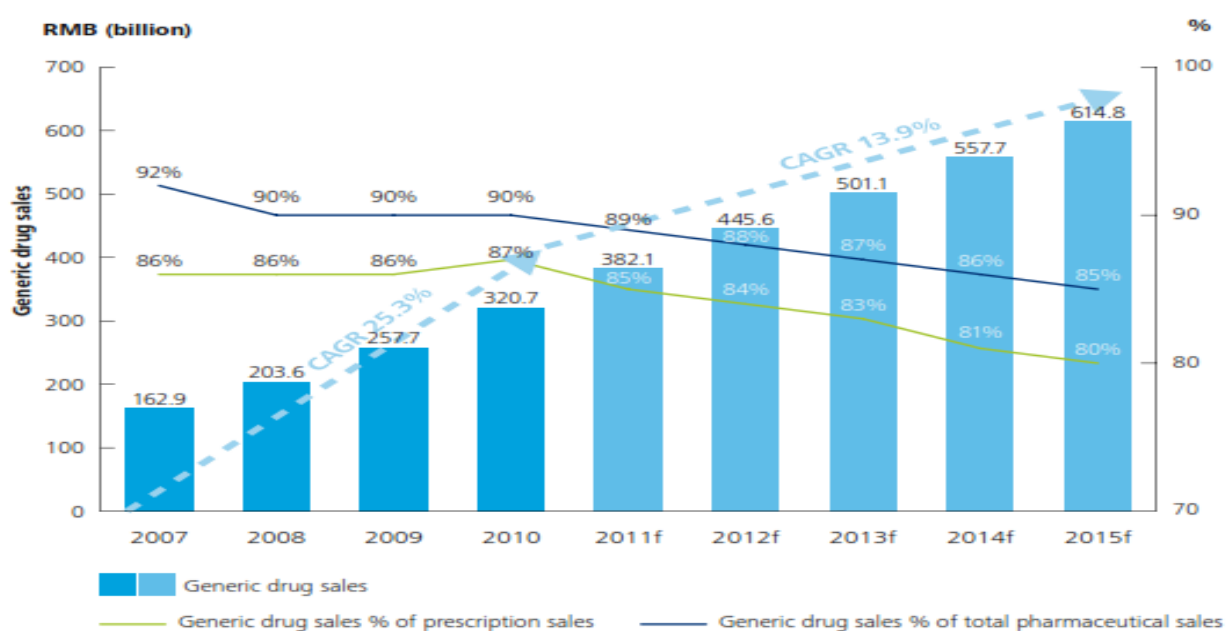


Figure 3.7.10 Generic Drug Sales in China, 2007–2015

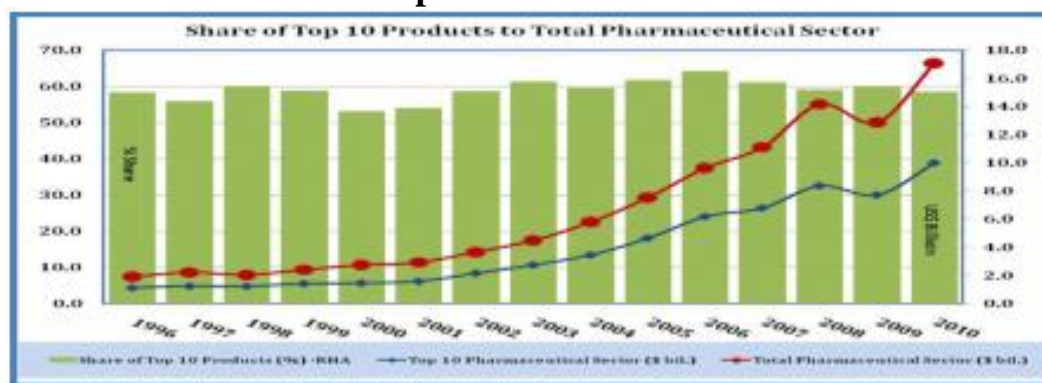


3.8 Indian Pharmaceuticals Industry

Over the past 50 years, Indian pharmaceutical industry has undergone a massive makeover from a modest beginning of “process patents regime” in the seventies to a modern and WTO compatible regime under the TRIPs Agreement in 2005. In last two decades, India has witnessed significant trade and industrial policy liberalisation, which have led to structural changes in the domestic industries. This was accompanied by rapid growth in the pharmaceutical sector in India which was

led by the migration of economic and research activities from Europe to India in particular and some other fast-growing markets.

Figure 3.8.3 Percentage Share of Top Ten products in Total Pharmaceutical Sector Exports



Financial Analysis of Top Pharmaceutical Companies

Table 4.1.3 Pfizer Financial Guidance for 2015

The following table provides our financial guidance for full year 2015 (a), (b).

Reported revenues	\$44.5 to \$46.5 billion
Adjusted cost of sales as a percentage of reported revenues	18.5% to 19.5%
Adjusted selling, informational and administrative expenses	\$12.8 to \$13.8 billion
Adjusted research and development expenses	\$6.9 to \$7.4 billion
Adjusted other (income)/deductions	Approximately (\$500 million) of income
Effective tax rate on adjusted income	Approximately 25.0%
Reported diluted Earnings per Share (EPS)	\$1.37 to \$1.52
Adjusted diluted EPS	\$2.00 to \$2.10

The following table provides a reconciliation of 2015 Adjusted income and Adjusted diluted EPS guidance to the 2015 Reported net income attributable to Pfizer Inc. and Reported diluted EPS attributable to Pfizer Inc. common shareholders guidance:

(BILLIONS OF DOLLARS, EXCEPT PER SHARE AMOUNTS)	Full-Year 2015 Guidance ^{(a), (b)}	
	Net Income	Diluted EPS
Adjusted income/diluted EPS guidance	\$12.4 - \$13.0	\$2.00 - \$2.10
Purchase accounting impacts of transactions completed as of December 31, 2014	(2.5)	(0.41)
Restructuring and implementation costs	(0.8) - (1.1)	(0.13) - (0.18)
Business and legal entity alignment costs	(0.3)	(0.04)
Reported net income attributable to Pfizer Inc./diluted EPS guidance	\$8.5 - \$9.4	\$1.37 - \$1.52

Table 4.2.1 Johnson & Johnson Financial Data

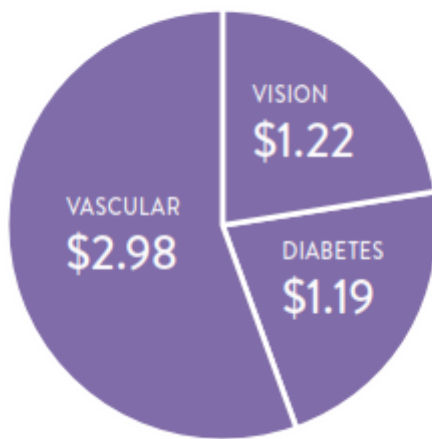
Johnson & Johnson and Subsidiaries:
Five-Year Selected Financial Data 2010-2014

	(Dollars in Millions Except Per Share Figures)				
Operating Results	2014 ⁽¹⁾	2013 ⁽¹⁾	2012 ⁽¹⁾	2011 ⁽¹⁾	2010 ⁽¹⁾
Sales to customers	\$ 74,331	71,312	67,224	65,030	61,587
Earnings before provision for taxes on income	20,563	15,471	13,775	12,361	16,947
Net earnings attributable to J&J ⁽²⁾	16,323	13,831	10,853	9,672	13,334
Basic net earnings per share	5.80	4.92	3.94	3.54	4.85
Diluted net earnings per share	5.70	4.81	3.86	3.49	4.78
Statistics					
Before tax margin	27.7 %	21.7 %	20.5	19.0	27.5
Net profit margin ⁽²⁾	22.0	19.4	16.1	14.9	21.7
Effective tax rate	20.6	10.6	23.7	21.8	21.3
Return on average shareholders' equity	22.7	19.9	17.8	17.0	24.9
Return on total assets	12.4 %	10.4 %	8.9	8.5	13.0
Capital Structure					
Cash and Current Marketable Securities	\$ 33,089	29,206	21,089	32,261	27,658
Debt	18,760	18,180	16,165	19,627	16,773
Equity	69,752	74,053	64,826	57,080	56,579
Total capital	88,512	92,233	80,991	76,707	73,352
Net cash/(debt)	\$ 14,329	11,026	4,924	12,634	10,885
Total debt/total capital	21.2 %	19.7 %	20.0	25.6	22.9
Common Stock Information					
Dividends paid per share	\$ 2.760	2.590	2.400	2.250	2.110
Shareholders' equity per share	25.06	26.25	23.33	20.95	20.66
Market price per share (year end close)	105.06	92.35	69.48	65.58	61.85
Average shares outstanding (mm) - basic	2,815.2	2,809.2	2,753.3	2,736.0	2,751.4
- diluted	2,863.9	2,877.0	2,812.6	2,775.3	2,788.8
Cash dividends	\$ 7,768	7,286	6,614	6,156	5,804
Other Data					
Total assets	\$ 131,119	132,683	121,347	113,644	102,908
Research & development expense	8,494	8,183	7,665	7,548	6,844
Capital expenditures	3,714	3,595	2,934	2,893	2,384
Number of employees (thousands)	126.5	128.1	127.6	117.9	114.0

1) For Adjusted earnings (before and after tax) and adjusted earnings per share, see Reconciliation of Non-GAAP Measures.

(2) After non controlling interests

Figure 4.3.1 Abbott Sales by Division

2014 SALES BY DIVISION (in billions)

The Gilead company's 2014 financial performance, with total revenues of \$24.9 billion, reflects an ongoing focus on scientific innovation that delivers best-in-class medications to patients with diseases that represent significant unmet needs around the world.

Figure 4.4.1 Gilead Product Sales

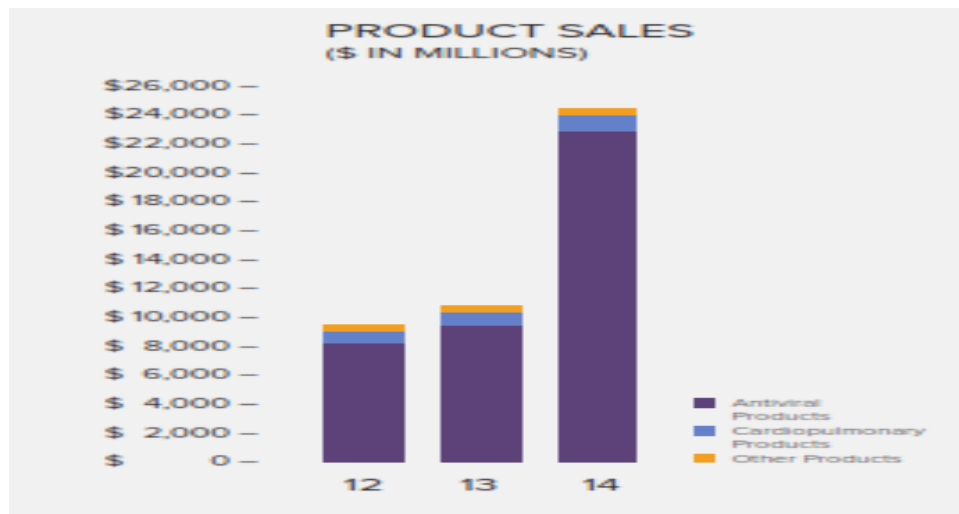


Figure 4.5.1 Key Performance Indicators of Sun Pharma

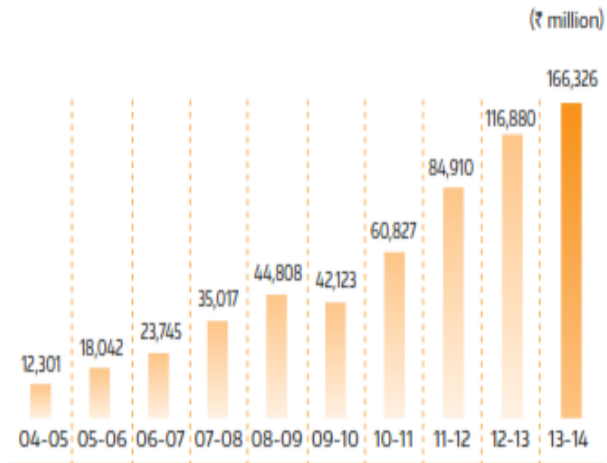
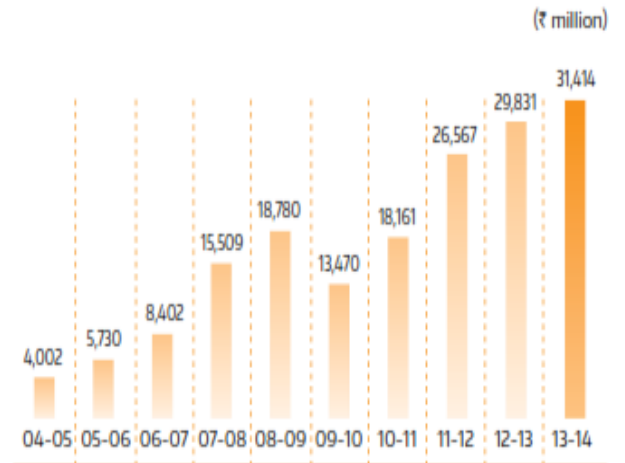
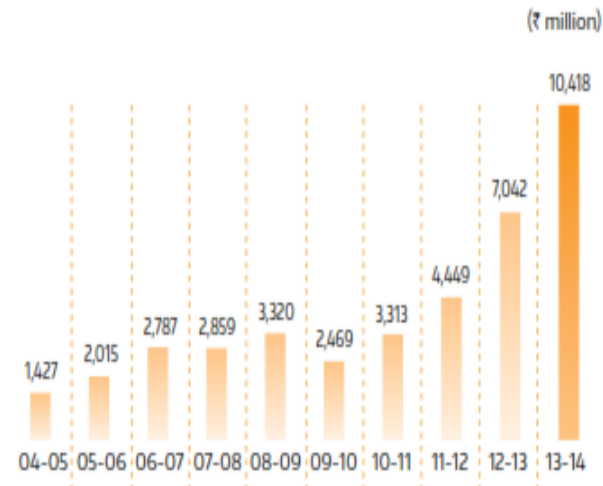
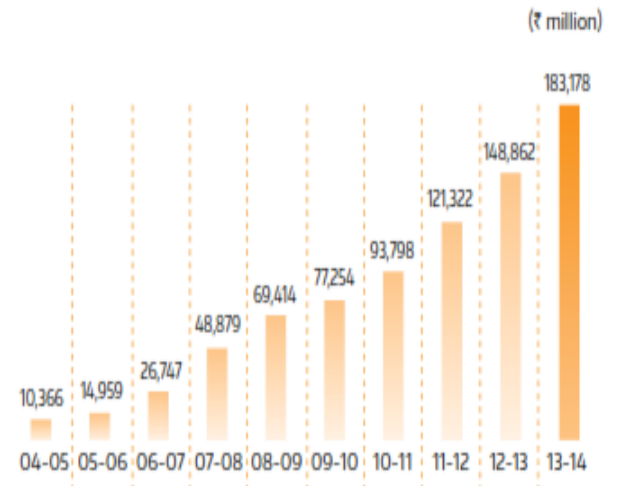
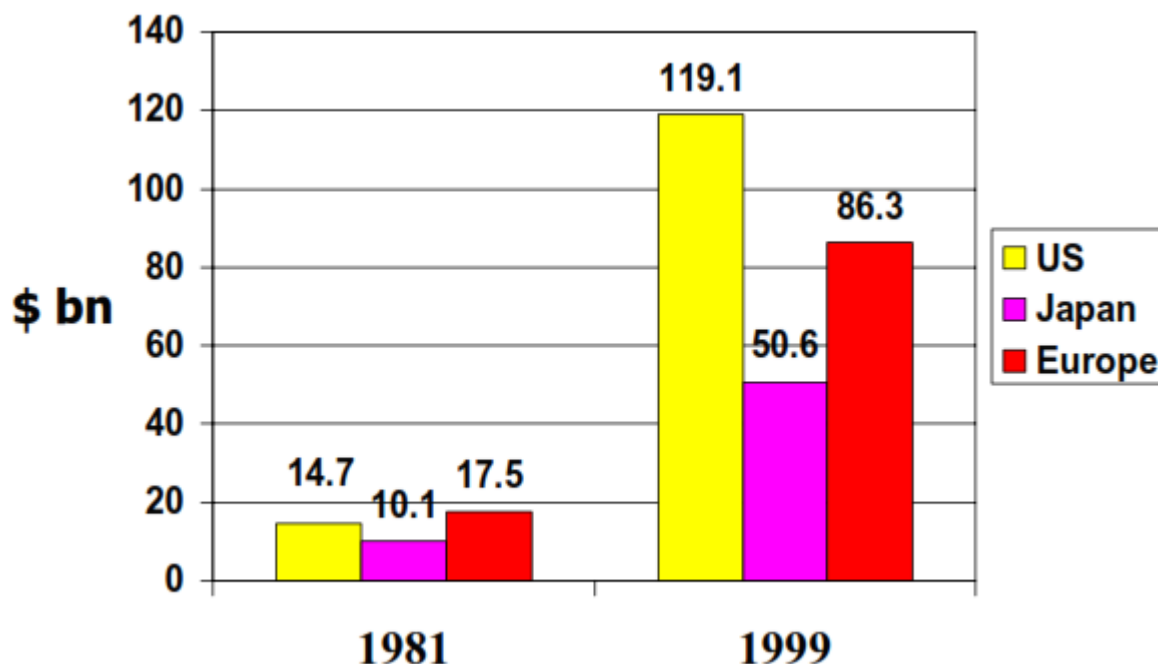
Total Income**Net Profit****R&D Expenditure****Reserve & Surplus**

Table 4.6.3 Statement of Profit & Loss (Glaxo Smith Kline)
for the 15 month ended 31st march, 2015

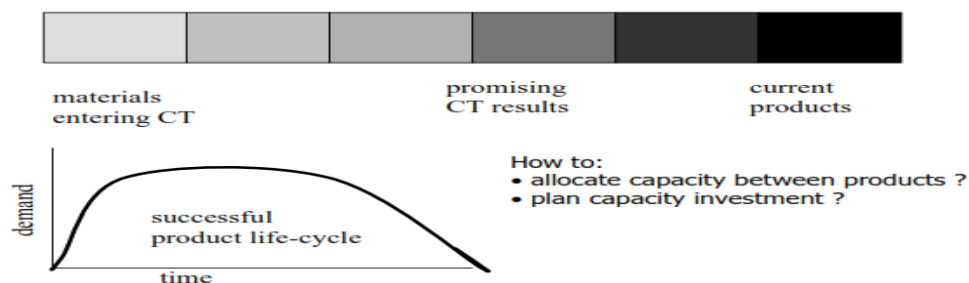
								Rupees in lakhs	
								15 months ended 31st March, 2015	12 months ended 31st December, 2013
						Note No.			
Sale of products	..	..	..	..	..	..		3358,54.49	2593,39.32
Excise duty	..	..	..	..	..	..		(105,13.51)	(73,22.08)
Sale of products (net)	..	..	..	..	..	..		3253,40.98	2520,17.24
Other operating revenue	..	..	..	..	..	..		34,16.82	25,97.50
Revenue from operations	..	..	..	..	..	29		3287,57.80	2546,14.74
Other Income	..	..	..	..	..	30		198,67.17	200,96.86
TOTAL REVENUE								3486,24.97	2747,11.60
Cost of materials consumed	..	..	..	..	..	31		726,73.46	538,56.74
Purchases of traded goods	..	..	..	..	..	32		779,89.39	670,00.11
Changes in inventories of finished goods, work-in-progress and traded goods	..	..	..	..	..	33		(1,38.69)	(50,74.71)
Employee benefits expense	..	..	..	..	..	34		493,02.23	362,04.85
Depreciation expense	..	..	..	..	..	11		25,35.25	19,88.14
Other expenses	..	..	..	..	..	35		662,12.90	504,19.90
TOTAL EXPENSES								2685,74.54	2043,95.03
Profit before exceptional items and tax	..	..	..	..	..			800,50.43	703,16.57
Exceptional Items	..	..	..	..	..	40		(51,88.14)	26,15.46
Profit before Tax	..	..	..	..	..			748,62.29	729,32.03
Tax expense:									
Current tax	..	..	..	..	..			267,78.49	233,00.35
Deferred tax	..	..	..	..	..			9,19.22	(5,56.56)
Net Profit	..	..	..	..	..			471,64.58	501,88.24
Earnings per equity share (basic and diluted) (Rs.)									
Face value Rs. 10 each	..	..	..	..	..	50		55.68	59.25

The accompanying notes are an integral part of these financial statements

5.1 Pharma Supply Chains: Key Issues and Strategies For Optimization

Figure 5.1 Value growth

Product pipeline

Figure 5.8 Product Pipeline and Capacity Plans

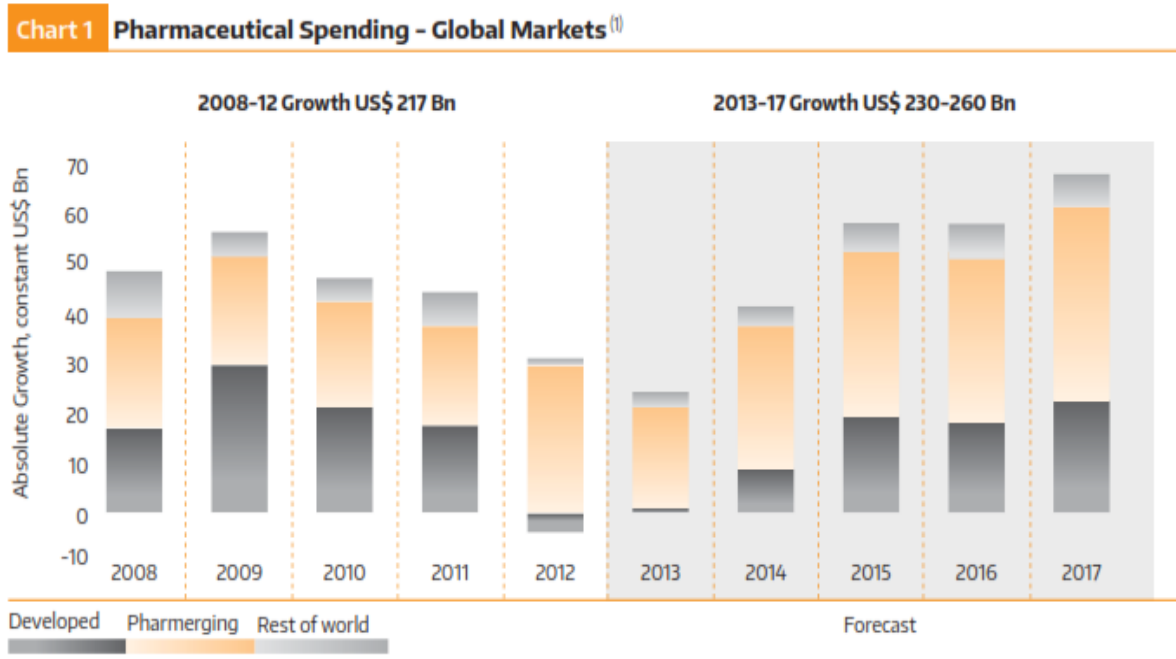
Management, Discussion and Analysis Report of Global Pharma Industry

The market size of the global pharmaceutical industry is estimated to reach US\$ 1.2 trillion by 2017 growing at a Compound Annual Growth Rate (CAGR) of 3-6% and the emerging markets are likely to be the key growth drivers. Several factors like economic growth, demographic changes, transition in community health and policy responses and focus on healthcare funding are expected to lead to double-digit growth in the pharmerging markets. On the other hand, economic and healthcare austerity measures and the savings realized from the growing availability of generic drugs, following their patent expiry, may see developed markets record low single-digit

growth.

The Market Size Of Global Pharmaceutical Industry is Estimated to Reach US \$ 1.2 Trillion by 2017 Growing at A Compound Annual Growth Rate of 3-6% and the Emerging markets are likely to be Growth Drivers.

Figure 6.1 Pharmaceutical Spending – Global Market



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