

BUSINESS ENVIRONMENT

In this Business Environment section, unless otherwise specified, sector-wide market data (those data not specific to AstraZeneca or any of our products) are based on moving annual total (MAT) data for the third quarter of 2007, and the 2006 comparisons are based on MAT data for the fourth quarter of 2006.

GROWING DEMAND FOR HEALTHCARE

There remains a strong fundamental demand for healthcare that underpins the industry's future growth prospects. Although this growth is slowing as a result of increased pressure on healthcare budgets in certain key established markets and evolving generic competition, specific elements that continue to contribute to the strength of the industry include:

- > The increasing number of people who can access the highest standards of healthcare, especially among the elderly, who represent a rising proportion of developed nations' populations.
- > Many diseases are under-diagnosed, sub-optimally treated or do not have effective therapies.

The demand for healthcare will be met not only by existing therapies but also by new ones originating from advances in both the understanding of the biology of disease and the application of new technologies. Innovative new products have been launched by the industry in recent years, which are both changing therapeutic approaches and improving the quality of life for patients.

In addition, fast-developing economies such as China and India continue to offer new opportunities for the industry to gain access to an expanding number of patients who can benefit from medicines. Pharmaceutical companies that are able to make efficient investment decisions, fully utilise their intellectual property and manage relationships with their stakeholders should be well positioned to benefit from the demand for healthcare and the new opportunities for the industry.

WORLD MARKETS

The world pharmaceutical market in 2007 was valued at \$629 billion. This represents an increase in constant US dollar terms of 6% over the year, down from 7% during 2006. The US is still the world's largest pharmaceutical market, accounting for \$286 billion (45%) of total sales. US growth fell to 6% in 2007 (from 8% in 2006), as growth driven by the 2006 Medicare Part D prescription drug benefit scheme peaked, so removing a counter to the impact on market value of increasing cost-containment pressures from payers, continuing patent expiries for branded medicines and the consequent increase in the use of generic pharmaceuticals. Japan is the second largest pharmaceutical market with sales of \$57 billion (9% of worldwide sales). Market growth during 2007, on a constant exchange rate basis, was 2%, up from 1% in 2006.

Europe accounts for 30% of the world market and experienced growth of 6% in 2007, up from 5% in 2006. Growth across major markets in Europe ranged from -1% in Italy to 10% in Spain, with Germany, France and the UK showing growth of 4%, 6% and 5%, respectively.

Asia Pacific and Latin America accounted for 7% and 4%, respectively, of worldwide sales. Notable growth from countries in these regions in 2007 came from China (sales of \$13.1 billion, growth of 22%), Brazil (sales of \$9.6 billion, growth of 10%), Korea (sales of \$9.5 billion, growth of 10%) and India (sales of \$6.4 billion, growth of 12%), which ranked ninth, 10th, 11th and 15th respectively in world markets.

BIOLOGICS AND VACCINES

The biopharmaceuticals industry develops vaccines and medicines based on proteins such as monoclonal antibodies (MAbs), often referred to as 'large molecules' in comparison to chemical compounds that are usually much smaller. In 2007, biological products contributed to about 24% of the sales of the top 100 drugs worldwide (20% in 2006) and some forecasters predict that this proportion could grow to about 37% by 2012. The rate of growth for biological products together with vaccines has been faster than the small molecule segment during the last few years and this trend has been forecast to continue in the immediate future. Some forecasters predict that the compound annual growth rate for the biopharmaceutical market could be 13% in the period up to 2010.

Biological products are, in general, more complex to manufacture compared to small molecule drugs because they are effectively made by generating biological material from cells or other living tissue, rather than through the process of chemical synthesis used for small molecule pharmaceuticals. Essential for this biological manufacturing is a high degree of fermentation, purification and formulation expertise, which biotechnology companies have typically developed as a result of their work and investment over a number of years. The regulatory regimes for 'biosimilars' or 'follow-on biological products' (similar versions of existing biological products) are also far less developed than those for generic pharmaceutical drugs, although in Europe and increasingly in the US, formal paths leading to the approval of biosimilars are being evaluated by regulatory authorities. These factors can help produce longer product life cycles for biological drugs compared to traditional pharmaceutical products. Biopharmaceuticals typically have a higher success rate from when a biological drug is tested in man for the first time until it is approved for marketing. This is particularly the case up to the end of phase I development when biological drugs often have a more predictable pharmacokinetic and toxicity profile compared with small molecule pharmaceuticals at the same stage of development.