

## Case 1

# GlaxoSmithKline

Keeping it going?

## INTRODUCTION

In John Kay's 1990s bestseller, *Foundations of Corporate Success*, Glaxo was confidently identified as 'the most successful European company of the 1980s' using the then fashionable measure of excess profits, which Kay termed 'added value' (1993: 30). Glaxo was then the leading firm in the British pharmaceutical industry which the journalist and commentator Will Hutton described as 'a beacon of UK excellence in an industrial landscape otherwise depressingly bare of success' (*Guardian*, 8 March 1995). A decade and two mergers later in 2002-3, the high-profile public issue was how an under-performing GlaxoSmithKline (GSK) could possibly justify a pay deal which offered \$18 million per annum to its chief executive. The now global pharmaceuticals industry had meanwhile suffered major reputational damage after pricing and drug-safety scandals, so that one of its conferences featured advice from a tobacco company executive 'on how an industry can improve its tarnished public image' (*The Economist*, 27 November 2004).

Strategy discourse is sometimes surprised and embarrassed by the discovery that (unexamined) corporate success has turned into (under-explained) under-performance as in the case of GSK. But classical strategy lacks the intellectual resources to do anything except regularly change the examples as individual companies lapse into failure, while confidently identifying the general basis for long-term corporate success through positioning, core competences and suchlike. Each company vignette is used to tell a simple story about the rights and wrongs of business choices, so that strategy deals in parables where the moral of the story is dependent on simple one-dimensional characterization and just desserts in the world of James 4:17 where sin is knowing the right thing to do and not doing it. Against this, our case tries to do something rather different because we believe that analysis of the transition from corporate success to under-performance adds depth and perspective. Thus, the case deconstructs Glaxo's earlier trajectory up to the mid-1990s which was one of upward mobility and financial achievement in a growth industry, before



analysing Glaxo's subsequent slow-motion struggle after 1994 to keep things going by merger over a decade of increasing problems for the industry.

Any attempt at understanding this more difficult period from the late 1990s brings us quickly to the limits of orthodox strategy discourse, particularly RBT explanations, which immediately seems the most appropriate because such accounts would highlight patents and marketing as the basis of corporate success (and failure). While patents and marketing are relevant in pharma, RBT provides an inadequate explanation in so far as it fails to give proper weight to the narrative element and focuses unduly on intra-company resources when the industry and its environment are equally important. The first section begins by analysing the broader context in terms of the industry frame. The key issue here is the pharma industry's recurrent (and latterly rather unsuccessful) struggle with its critics. The struggle takes the form of a contest between two accounts of the activity: the industry's vision is of good pharma as a research-driven, innovative activity whereas its critics charge that bad pharma is about marketing-driven profiteering. The outcome of this struggle over reputation is crucial because it influences the regulatory environment in which the industry operates and the collective possibilities of cost recovery.

Within this broad social framing of the industry and its reputation, stock-market analysts, consultants and journalists understand the performance and prospects of individual companies in narrower terms. The second section analyses stock-market understandings of the pharma-company business model, where marketing is applied to create blockbusters, so the key questions are about patent expiry and new product coming through the pipeline. Under these conditions, the stock market has traditionally assumed that the pharma industry offers high visibility and predictability of future revenue. This differentiates it from other industries such as auto assembly, where predictability is necessarily limited when new models so often represent another throw of the dice.

The second half of the case study develops an analysis of the Glaxo company set within an industry frame about contested social accounts and narrow market understandings. The third section analyses Glaxo as the upwardly mobile, *arriviste* of the 1980s, on a brilliant trajectory of organic growth driven by focused marketing which made Zantac then the world's best-selling drug. With patent expiry imminent, the question from the early 1990s was how to keep things going for the stock market, and Glaxo's answer was defensive, cost-reducing horizontal merger. The third section shows how the Wellcome take-over of 1994 both bought time and encouraged market expectations of further success that could not easily be met in the subsequent much larger merger with SmithKline Beecham.

If the numbers increasingly disappoint, Glaxo has responded by putting more emphasis on a forward-looking public narrative about company achievement, which is intended for stock-market and media consumption. The fourth section shows how

this narrative covers both process and product, as Glaxo makes promises about the reorganization of research for higher productivity and about the new drugs in the later stages of the pipeline. Of course, public promises without corroborating numbers do not convince everybody. Hence, as the fifth section demonstrates, the CEO pay of Jean-Pierre Garnier became an issue against a background of increasing uncertainty about Glaxo's performance in a pharma industry whose insecurities consultants now exploit with a flood of reports about reinvention and new business models.

The Glaxo company provides the basis for our first case because Glaxo as a company in the pharma industry is rather simpler and easier to understand than Ford in automotive assembly or the conglomerate GE. Unlike GE, Glaxo has all its turnover in one activity (pharmaceuticals) and the pharma-company business model about the global marketing of blockbusters to maximize revenue is easier to understand than the business model of the average car assembler which cross-subsidises between different segments and markets and combines assembly with variable amounts of parts manufacture and car finance. Furthermore, GSK is not reliant on a finance subsidiary in the same way that both GE and Ford are. However GSK does fit the developing argument about financialization, not least because of the expectations of its shareholders and the interest of the business press and analysts in a company with a large market capitalization that has, in the 2000s, failed to maintain both the growth and excitement that it delivered in the 1990s. Overall, GSK's strategy is one of keeping things going (by merger) for the stock market, in a world where multiple and contested narratives are as important as the financial numbers.

If the Glaxo company is relatively simple to understand, the case is not straightforward, because it illustrates the complexity of the strategic space around the corporation. As in many other late-capitalist companies with technology products, market-based cost recovery is only possible within an appropriate regulatory framework which depends on governmental regulation at national and international level. While the nature of that framework, especially in the USA, can be crudely influenced by corporate donations and lobbying, the nature and bounds of regulation also depend on the reputation of the industry. When reputation is lost, current events in pharma show that predictability is greatly reduced and the industry can no longer keep things going in the same way. This has already led to a revaluation of companies like Merck and Pfizer whose shares were once growth stocks with starry P/E ratios but which now figure as underperformers whose attraction is yield and current earnings.



## INDUSTRY FRAME: PHARMA'S CONTESTED REPUTATION

The major global pharmaceutical firms operate within an industry frame which is unusual because the major issues here are reputational ones about whether, in the terms of the established cliché, the industry exists for people or profits. In the first part of this section we present basic data that shows how patents allow large pharmaceutical companies to generate high profits. This analysis is fairly uncontroversial for the industry's defenders and critics whose divisions are illustrated by their different answers to the question about whether the industry's high profits are the necessary precondition for continuing industry investment in fundamental scientific innovation.

There are two contesting representations of the pharma industry that imbue it with different moral value: on the industry's own account, good pharma is R&D led and recycles profits to sustain innovation that offers the social benefit of improved health and welfare; radical critics allege that bad pharma is marketing driven and makes large profits by exploiting the sick (and those who pay their health-care bills). One of the most interesting aspects of this contest is that much the same arguments are reworked by both sides (with regular updating of the supporting facts) over forty years. But the balance between positive and negative representations shifts over time and the reputation of the industry oscillates, with the 2000s (like the late 1950s and early 1960s) representing historic lows.

The accumulating criticisms of big pharma since the later 1990s by ourselves (Froud et al. 1998) and others fundamentally do no more than reinscribe or reinvent the critique produced by the radical US senator Estes Kefauver, whose Senate hearings from 1957 to 1963 criticized the industry for profiteering in unsafe drugs. But by the mid-2000s (like the 1960s), such criticisms have now gained social credence in ways that leave the industry once again with a tarnished public reputation. The intervening twenty years from the mid-1970s to the mid-1990s were much kinder to an industry that was much more in charge of its own publicity. These issues about reputation and image are important because they potentially have feedback effects on the regulatory regimes that determine the collective possibilities of making money from the industry.

### Pharma patents and the 'licence to print money'

One of the pioneers of commercial television in the UK and then-chairman of Scottish Television (STV), Roy Thomson famously described a radio- or television-station franchise as like 'having a licence to print money' (Sendall 1982: 120). Much the

same point could be made about patents in the ethical pharmaceutical business. More exactly, the licence to print money comes out of a combination of three conditions: enforceable patent rights, price-insensitive purchasers and a sympathetic regulatory environment whereby the rules of the game have allowed high returns to be generated.

The pharmaceutical industry includes several kinds of company making different categories of drugs, as well as vaccines and other related health-care products. From a capital-market point of view, the most interesting are *ethical* pharmaceuticals, which are recently developed drugs, in patent, marketed under a brand name and available usually only on prescription. Ethical drugs should be distinguished from *generics*, which are patent-expired substitutes available on a prescription basis and made by various firms to one standard formula. Last, there are over-the-counter (OTC) products, which are branded medicines available without prescription at pharmacy counters, supermarkets and other places.

Patented ethicals are important because they command premium prices: generics represented 51 per cent of all US prescriptions in 2002 but captured just 17 per cent of the total value of the US drug market (UBS Warburg 2003: 6). In the absence of patent protection, generic prices are determined by competition and reflect costs of production so that generic substitutes are usually between 10 per cent and 70 per cent cheaper than their ethical counterparts (Reuters Business Insight 1998: 19). As such, the average margin for generics is considerably lower than for ethicals: in 1997 the top eight generic manufacturers managed an average net-income margin of 4.1 per cent compared with 19 per cent for the top eight ethical manufacturers (calculated from Reuters Business Insight 1998: 28, 196). Some of the giant pharma companies have diversified health-care businesses including OTC and health-care products but generally cede generic production to cost-conscious smaller manufacturing firms. The classic pattern is that the larger part of turnover, and an even larger share of profit, in giant pharma companies is in ethicals. As Exhibit C1.1 demonstrates, in 2002 almost all pharma giants generated over 80 per cent of their turnover from ethical pharmaceuticals. The exceptions include Merck, which at that time generated three-fifths of its revenue but only one-twentieth of its net income from the pharmacy benefit management service Medco Health, while Johnson & Johnson and Novartis both had extensive OTC interests.

Ethical pharmaceuticals are attractive not only because they offer high margins but also because historically they have offered strong year-on-year growth, so that a successful ethical company in the 1980s or 1990s could easily rack up double-digit growth of sales revenue. This growth came without any of the problems about cyclicalities that afflict many consumer and producer goods or many of the risks attached to rapid and unpredictable change that afflict most technology companies. As we noted in this book's



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**Exhibit C1.1** Ethical sales as a percentage of total sales for major pharmaceutical companies, 2002

|             | Total sales revenue<br>\$m | Total ethical sales<br>\$m | Ethical sales as a %<br>of total |
|-------------|----------------------------|----------------------------|----------------------------------|
| Pfizer      | 32,373                     | 28,288                     | 87.4                             |
| GSK         | 31,819                     | 27,003                     | 84.9                             |
| Merck       | 51,790                     | 21,631                     | 41.8                             |
| AstraZeneca | 17,841                     | 17,343                     | 97.2                             |
| J&J         | 36,298                     | 17,151                     | 47.3                             |
| BMS         | 18,106                     | 14,700                     | 81.2                             |
| Novartis    | 23,151                     | 13,493                     | 58.3                             |
| Pharmacia   | 13,993                     | 12,037                     | 86.0                             |
| Wyeth       | 14,584                     | 11,733                     | 80.5                             |
| Lilly       | 11,077                     | 10,384                     | 93.7                             |

Source: Reuters Business Insight (2003a: 104), company accounts and SEC filings

Note: The apparent low significance of ethical drugs for Merck in 2002, compared with the other companies in the table, is due to the large sales generated by Medco Health, a pharmacy benefit management service which generated \$30,159 in 2002. This business was owned by Merck in 2002 but has since been spun off. The BMS figure used is the 2002 figure restated from the 2003 accounts. The table excludes Roche/Genentech and Aventis due to non-standardization of total ethical sales

of GDP growth in advanced countries, and much of the manufacturing sector across the USA and Europe faltered after the mid-1970s as GDP growth slowed. But the long boom continued globally for two decades longer in ethical pharmaceuticals, as investors bought into a group of companies that grew at least twice as fast as GDP in most advanced countries, which provide the largest market for ethical drugs. Here, the high-income capitalist countries in western Europe, North America and Japan still account for more than 90 per cent of world consumption (Keynote 2002: 18).

The licence to print money rested on three interrelated conditions that jointly facilitated cost recovery by all ethical pharmaceutical companies. The conditions are: first, intellectual property rights in the form of time-limited patents; second, the existence of price-insensitive corporate and social purchasers; and, third, a regulatory environment that allows high returns to be made by companies. This schema of three conditions provides us with a first indication of complexity because together they indicate how pharma operates in an environment where market competition is channelled and constrained by institutions and regulations.

Intellectual property rights are generally important because they allow the exclusion of competitors and protect prices and margins from erosion. In pharma, the key rights are time-limited patents which are generally taken out at the earliest pre-clinical stage in the development of a drug and last (without possibility of renewal) for twenty years from the point at which the patent is filed (Keynote 2002: 45). However, this twenty-year period includes pre-clinical development with usually over a year of laboratory tests, followed by clinical trials, which can take around six years (though sometimes

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Together this implies that the patent life for drugs after they have been launched has been typically around eleven to twelve years (Strongin 2002: 3). The Hatch-Waxman Act of 1984 allowed an extension of a further five years to this time, but in all cases the Food and Drug Administration (FDA) limits the total patentable life of a drug to fourteen years from the point of approval, including any extensions that might be granted (Center for Drug Evaluation and Research 2005). Over the patented period, pharmaceutical firms can capture significant shares of particular therapeutic areas, which may also allow them to develop further products within these segments.

Property rights are of considerable importance when a substantial and enduring market for the product exists. This is certainly true of patents on ethical drugs where property rights are valuable because various forms of socialized medicine across western Europe, North America and Japan have created a mass market in medication paid for through social insurance in western Europe and corporate welfare or private insurance elsewhere. In almost all cases, the state one way or another subverts demand. Even in the USA where private health care is the dominant mode of funding, public-sector spending still accounted for 43 per cent of total national health-care expenditure in 2002, largely due to the high costs of the Medicare and Medicaid programmes (Deutsche Bank 2003a: 5).

Traditionally, both public- and private-sector purchasers have been relatively insensitive to the prices of prescription drugs in systems that pass cost on to a separate funding body. The structural separation of consumer (patient) from prescriber (doctor) and paymaster (usually the state or insurance firm) has generally reduced price sensitivity in a world of approved drug lists (Holman 1988: 3). This is all the more important when the cost of drugs has accounted for a relatively small proportion of very large budgets for private-sector purchasers such as US health-care providers or public-sector purchasers like the NHS in the UK. In both cases, labour and other costs are far larger items of expense so that drug costs have only fairly recently been closely scrutinized. As Exhibit C1.2 shows, pharmaceuticals and other medical non-durable items together accounted for only 10–20 per cent of all health-care expenditure between 1991 and 2000 in different advanced countries, and their share is actually lowest in the USA, presumably because the US system is even less successful at controlling other costs such as surgeons fees or the hotel costs of hospital stays.

Of course, drug-cost control has moved up the political agenda in recent years, especially in Europe and Japan. Thus, the National Institute for Clinical Excellence (NICE) was established in the UK in 1999 to consider, *inter alia*, the cost-effectiveness of medical treatments, including pharmaceuticals (NICE 2005). One of the objectives of NICE was to reduce what had become known as 'postcode prescribing' whereby doctors in different areas took varying attitudes to prescribing certain (usually relatively high-cost) treatments. Glaxo's flu drug, Relenza, was the first case that NICE considered, and its decision that the high cost of the product was not justified by its benefits (and hence that it should not be funded) was a landmark. In 2001, NICE considered the case of a



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**Exhibit C1.2** Total expenditure on pharmaceuticals and other medical non-durables as a percentage of total health expenditure, 1991–2000

|      | France<br>% | Germany<br>% | Italy<br>% | Japan<br>% | Spain<br>% | UK<br>% | USA<br>% |
|------|-------------|--------------|------------|------------|------------|---------|----------|
| 1991 | 17.1        |              | 20.4       | 22.9       | 18.1       | 13.8    | 9.1      |
| 1992 | 17.0        | 14.7         | 20.4       | 22.0       | 18.3       | 14.2    | 8.8      |
| 1993 | 17.4        | 13.1         | 19.9       | 22.3       | 17.9       | 14.8    | 8.6      |
| 1994 | 17.3        | 12.8         | 19.9       | 21.1       | 17.8       | 15.1    | 8.6      |
| 1995 | 17.5        | 1.5          | 20.9       | 21.5       | 17.7       | 15.3    | 8.9      |
| 1996 | 17.5        | 12.6         | 21.1       | 21.3       | 18.2       | 15.6    | 9.2      |
| 1997 | 17.9        | 12.7         | 21.3       | 20.0       | 19.0       | 15.9    | 9.7      |
| 1998 | 18.5        | 13.2         | 21.8       | 17         |            |         | 10.3     |
| 1999 | 19.2        | 13.5         | 22.2       | 16.4       |            |         | 11.3     |
| 2000 | 20.1        | 13.6         | 22.6       |            |            |         | 12.0     |

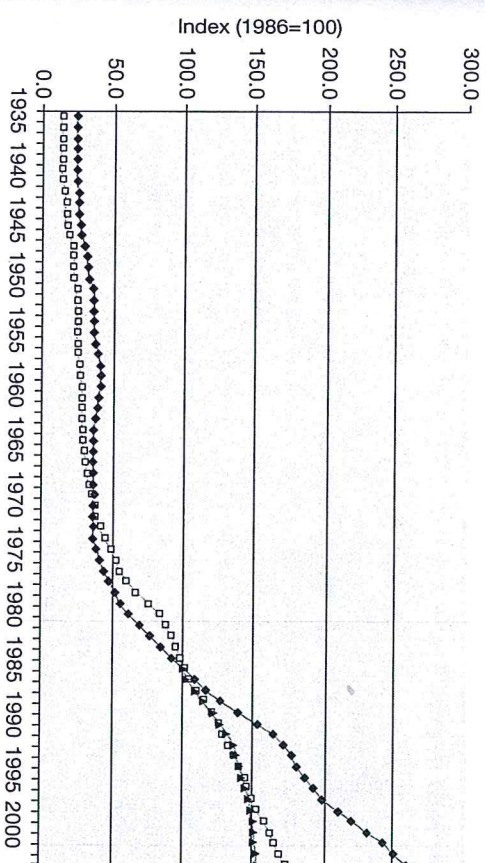
Source: OECD Health Data 2002, 4th edn, in Seget (2003: 27)

But, on the long view, the more important point is that efforts to control drug prices in the key US market have been conspicuously unsuccessful. Exhibit C1.3 shows that nominal prices for ethical drugs in the USA were more or less flat for over forty years from the mid-1930s to the late 1970s and during that period faithfully follow the consumer price index (CPI) for all items. However, the 1980s shows the rapid growth in prescription drugs prices (the vast majority of which are accounted for in value terms by ethical drugs) compared with the CPI for all items and non-prescription drugs. In 1990, the average cost per prescription for brand-name medications (i.e. ethical drugs) was \$27.16, and by 2000 it had nearly tripled to \$65.29 (Emanuel 2003). According to Balance et al. (1992: 29) price rises were the industry's response to broader problem of slow-down in new medical discoveries and stagnant demand in some therapeutic areas. This would appear to be supported by findings from Credit Suisse (2004: 12), who found that increases in retail pharmaceutical prices, either from direct price increases or benefits from therapeutic upgrades, have comprised 50 per cent of annual sales growth on average from 1984 to 2003 and 32 per cent from 1994 to 2003.

The third key condition has been the (favourable) regulatory framework which reflects a close relation between corporate pharma and supportive government. The main UK industry association, the ABPI (Association of British Pharmaceutical Industries) has its head office in Whitehall, while the US organization PhRMA (Pharmaceutical Research and Manufacturers of America), has its offices on 15th Street NW in Washington, DC, a short walk from the main political hub of the USA.

This close relationship has led to the creation of pricing regulations across most of western Europe, North America and Japan, which historically have been very favourable to the supplying industry of giant pharma firms. In the USA there are regulations with respect to safety and efficacy, but no direct price controls and a liberal approach to patents

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**Exhibit C1.3** Consumer price index of prescription drugs, non-prescription drugs and all items, 1935–2004

Source: Bureau of Labour Statistics, Consumer Price Index Statistics

Note: Figures are not seasonally adjusted; figures are for US city average; 1986 is used as the base year

(McIntyre 1999: 151–2, 156). In the UK, the Pharmaceutical Price Regulation Scheme (PPRS) regulates ROCE rather than price, to ensure pharmaceuticals companies are guaranteed a minimum rate of return, which through most of the 1970s and 1980s was a very healthy 30 per cent (Froud et al. 1998), though this has been reduced over time and was set at 21 per cent in the 1999 and 2005 schemes (Department of Health 1999, 2004). In Japan, the situation is somewhat different with some price-setting by the Government based on either a classificatory or cost-based pricing scheme, with pharma firms reimbursed by national health insurance. However, even under this arrangement, pharmaceutical companies have prospered through the exploitation of a favourable regulatory system that offers a reimbursement price set up to one-third higher than the price charged to the doctor or medical institution (McIntyre 1999: 165).



## Contesting representations: 'researchers in white coats' or 'reps in cars'?

The basic facts about cost recovery as described above cannot be disputed; this is an industry that operates in a regulated space where competition is limited in a way that licenses high margins. The contest is then about the social value of this activity, which has for forty years been polarized around two competing representations of the pharma business: good pharma is represented in a positive way as a virtuously innovative activity by researchers in white coats who benefit society, while bad pharma is represented in a negative way as an insidious form of profiteering that uses intensive marketing by sales representatives, which also raises prices and, at times, foists potentially unsafe products onto consumers. The positive representation of good pharma was originally articulated by the pharma trade associations and developed by individual companies but has also been endorsed by many academics and politicians who are generally willing to embrace anything that could be described as knowledge-based. The negative representation of bad pharma originates with Senator Estes Kefauver in the late 1950s, who formulated a kind of intellectual charge sheet using arguments that have subsequently at various times been both marginalized and reintroduced into the mainstream. This section first outlines the industry's own positive justification for patents and high profits before introducing the critical perspective.

The industry's own argument differs slightly depending on audience. Publicly, the industry argues that patents are the necessary and appropriate means to encourage the large outlays on R&D that bring new drugs to market and thereby benefit patients. Without patents, R&D levels would be lower because companies would be much less certain about their ability to turn scientifically successful research into a revenue stream. These arguments have been reiterated by trade organizations like the ABPI in the UK and PhRMA in the USA, which have played a key role in presenting the pharmaceutical industry as one that is driven by research that finds better *medicines*.

Here, for example, is Alan Holmer (2002), the President of the PhRMA, rehearsing a familiar argument:

weakening intellectual property would constrain progress in treating and curing disease . . . Copying most pharmaceuticals costs a small fraction of the amount invested in the research and development of that medicine. Without patents, competitors who have not invested in research could easily undercut the price charged by the company that did make the investment. No company could afford to invest hundreds of millions of dollars per drug in research on such terms.

An effective patent system . . . is essential to provide the necessary incentive to invest in R&D so as to deliver new innovative medicines to patients . . . Crucially any reform of the patent system should not erode the protection for medicines and thus dilute the incentive for pharmaceutical R&D. Otherwise, it would have a negative impact on the industry and on the provision of healthcare to patients.

However, pharmaceutical companies are also profit-oriented businesses with shareholders, and so this narrative changes when addressing the business community. Here companies, rather than trade organizations, extend the patents/R&D couplet to include profits, which might seem less acceptable in a public debate. The company-level articulation of this position was demonstrated by Merck which (until the recent Vioxx scandal) was widely considered to be the most ethical and science-based of all the big pharma companies. At an acceptance speech given at the Harvard Business School Alumni Awards, Raymond Gilman, the current CEO, resurrected the motto originated by George Merck, the founder's son, in the 1950s when the contested representations were first formulated in their modern form. George Merck famously claimed that 'medicine is for the people, not for the profits' and then went on immediately to add, 'if we remember that, the profits will follow' (Merck 2003). On this bold view, the pharma company's fundamental aim is to deliver improved health benefits and the circle is then squared (and critics are forestalled) by arguing that profits will follow so there is no inherent conflict between the two objectives.

In recent years, all the major pharma companies have publicly endorsed versions of the patents/social-benefits/private profits syllogism and Exhibit C1.4 illustrates how the big pharma companies associate innovation with quality of life in their mission statements, presenting intellectual property rights as the precondition of innovation.

Such statements by trade associations and companies create an image of good pharma as a research-driven activity where the continued employment of researchers in white coats depends on the company's patent lawyers who sagely understand the fundamental truth that profit in pharma is simply deferred investment in research. Other classes of employee, such as marketing executives and sales reps, barely figure at all in the positively imagined company which acquires a heroic quality – so much so that Alan Holmer, then President of the PhRMA, likened pharmaceutical companies to the firemen of 9/11 in their selfless struggle to serve the people (cited in Hawthorne 2003: 10).

This framing of good pharma has dominated public debate and convinced regulators, politicians and media commentators for most of the past thirty years. In the central decades of this period, from the mid-1970s to the late 1990s, many believed the industry's own publicity, and critics of the pharma industry found it difficult but not impossible to get an audience. In this period in the UK, for example, only one of three vociferously critical books (Heller 1977, Braithwaite 1984 and Chelley 1990) was published by a mainstream, large UK publishing house. But, both before and after this central period, critics of the industry mounted a better-received attack and ideas of bad pharma chal-



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**Exhibit C1.4** *Mission statements and defence of patents by major pharma companies*

| Company           | Mission statement                                                                                                                                                                                                                                                                       | Defence of patents                                                                                                                                                                                                                                                                                                            |
|-------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Pfizer            | 'We dedicate ourselves to humanity's quest for longer, healthier, happier lives through innovation in pharmaceutical, consumer, and animal health products'                                                                                                                             | 'where inadequate therapies exist, patents provide the incentives to invest in the search for new medicines . . . Without patent protection it is unlikely that patients would receive many new medicines' (Pfizer 2000: 3)                                                                                                   |
| GSK               | 'our quest is to improve the quality of human life by enabling more people to do more, feel better and live longer'                                                                                                                                                                     | 'we support intellectual property protection because it stimulates and fundamentally underpins the continued R&D of new and better medicines, including those for diseases prevalent in the developing world' (GSK 2002: 11)                                                                                                  |
| Merck             | 'to provide society with superior products and services by developing innovations and solutions that improve the quality of life and satisfy customer needs, and to provide employees with meaningful work and advancement opportunities, and investors with a superior rate of return' | 'To be successful, the pharmaceutical industry must help create an environment that encourages and rewards risk taking . . . Strong patent laws allow companies to generate the profits required to finance future R&D while providing investors with a competitive return on their capital' (Merck 1998: 6)                  |
| AstraZeneca       | 'The people of AstraZeneca are dedicated to:<br>Discovering, developing and delivering innovative pharmaceutical solutions<br>Enriching the lives of patients, families, communities and other stake-holders<br>Creating a challenging and rewarding work environment for everyone'     | 'The international protection of intellectual property rights underpins future investment by the pharmaceutical industry in the research and development of new medicines and, like other pharmaceutical companies, we will continue to work to uphold our intellectual property rights where appropriate' (AstraZeneca 2003) |
| Johnson & Johnson | Reject a mission statement and instead have a 'credo' which begins: 'We believe our first responsibility is to the doctors, nurses and patients, to mothers and fathers and all others who use our products and services'                                                               | N/A                                                                                                                                                                                                                                                                                                                           |

Source: All mission statements were taken from either mission statement links on the company web site or the captions that appear below company logos on company web sites. The defence of patents were taken

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own representation. In the early 2000s in the USA, mainstream publishers produced a slew of critical books (see, for example, Abramson 2004, Angell 2004, Gozner 2004, Hawthorne 2003 and Robinson 2001). The next part of this section focuses on these two critical periods: the first, in the late 1950s and early 1960s after the Kefauver hearings; the second, from the mid-1990s to the present time.

### *Kefauver's analysis and the political response*

The original and definitive indictment of bad pharma was put together by Estes Kefauver, a radical Democrat and Chairman of the Senate's Anti-Trust and Monopoly Subcommittee between 1957 and 1963, whose remit was to examine the effects of a lack of competition on an industry-by-industry basis. Against the backdrop of public concern about the pharmaceutical industry, Kefauver's committee began an investigation into the uncompetitive practices of the industry and into the efficacy and safety of the drugs the companies produced (Gorman 1971: 304, 341). Led by Kefauver, the investigative hearings and supporting research indicated the industry on three counts:

- 1 Patents sustained predatory prices and unreasonable margins that were much higher than in most other kinds of manufacturing. The immediate issue was drug prices and in particular why ethical drugs in the USA were much more expensive than those in mainland Europe and other parts of the world (Kefauver 1965: 55). Kefauver claimed that this could not be explained by higher costs of research or higher labour costs where labour costs per unit of net output were actually lower in the USA than in Europe (Kefauver 1965: 56). Instead, he charged that pharmaceutical companies were profiting from the patent system and set prices so as to achieve handsome returns on investment. Evidence presented included statistics that showed the pharma industry averaged a return on investment (ROI) of 20 per cent compared with 10 per cent for all of manufacturing between 1957 and 1962 (Kefauver 1965: 61). As for individual companies, thirteen of the USA's fifty most profitable companies in 1958 were pharmaceutical companies based on net profit after taxes and return on invested capital. All of the top three at this time were pharmaceuticals companies (Kefauver 1965: 61).
- 2 Costs and prices were wastefully increased by large expenditures in marketing. Kefauver charged the industry with 'excessive advertising' as salesmen (or detail men as they are known) placed considerable pressure on physicians to prescribe new drugs. It was shown that, while R&D expenditure accounted for 6 per cent of total receipts, 25 per cent of receipts were attributable to sales and marketing (Kefauver 1965: 68), reinforcing the claim that, 'if new discoveries do not materialize from the corporation's laboratories, they are artificially created by the advertisers art' (Kefauver 1965: 72). Moreover, Kefauver argued that the dominance of marketing had created what we would now call an industry culture whose



encouraged the premature release of drugs, which could threaten the health of consumers (Kefauver 1965: 72).

3 Many industry products were ineffective (and some were unsafe) because the industry's regulatory institutions lacked the necessary independence. Kefauver noted that the industry charged high prices for new compounds that were often no more effective than established drugs already on the market. He criticized the industry's preoccupation with patentable, non-fundamental innovation and what we would now call 'me-too drugs', with minor molecular changes and performance similar to that of other patented drugs. Such drugs were routinely approved by weak regulatory institutions and an unhealthy close relation between the pharmaceuticals firms and the government departments responsible for vetting new drugs. For example, he found that a number of key officials in the FDA, the body responsible for the approval of new medical drugs, were paid by drug companies for a variety of 'promotional' purposes (Kefauver 1965: 352-3).

It is striking that all subsequent criticism of bad pharma reworks or reinvents these criticisms. They retain much of their original force because Kefauver's problem definition was more influential than his solutions, which involved patent reform and tougher regulation. The solution of patenting the process not the product was offered to prevent the proliferation of me-too drugs and to encourage price competition once a different process had been discovered (Kefauver 1965: 56-7). More generally, it was argued that the time-limited seventeen-year patent protection for ethical drugs should be scrapped and replaced by a system that cancelled new drug patents after three years if the patentee refused to license all 'qualified applicants' at a specific maximum royalty of up to 8 per cent of sales (Kefauver 1965: 44). Kefauver also pushed for a stronger FDA, not only with powers to grant patents only to those goods that could prove efficacy as well as safety, but also with the powers to remove drugs from the market where efficacy is unproven. The historians' verdict is that, following extensive lobbying by the pharmaceutical industry, the Kennedy Administration produced a very watered down version of these reform proposals in a Bill that Kefauver himself denounced as 'the weakest possible' (Harris 1964: 166). The Bill abandoned not only Kefauver's pricing provisions, but also most of the safety and efficacy recommendations too (Gorman 1971: 335).

Events then intruded after the scandal about Thalidomide, which was not on the general prescription list in the USA but which had disastrous consequences in Europe when prescribed to control nausea in pregnancy. Some of Kefauver's original safety and efficacy proposals were then rehabilitated and incorporated into legislation in the Kefauver-Harris Amendments of 1962. Interestingly, this modest change had a significant effect on the number of new chemical entities (NCEs) (i.e. the number of new therapeutic molecular compounds never before used or tested on humans) and other drugs entering the market and on the number of existing drugs in circulation. Exhibit C1.5 shows that the number of patentable NCEs and other drugs per year dropped significantly from 1962 onwards so that the industry introduced on average three times

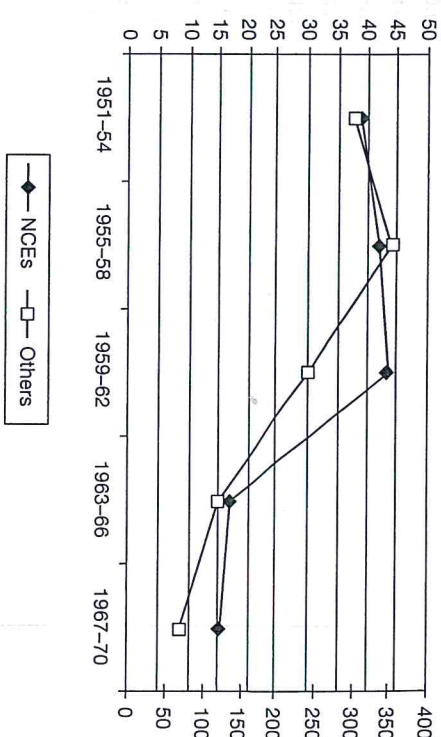


Exhibit C1.5 Number of NCEs and 'other' drugs patented per year, 1951-70

Source: Paul de Haen International Inc. (various years)

as many new drugs before the enactment of the law as after. Additionally, the law was applied retrospectively to drugs already on the market, leading to the additional withdrawal of 1,925 of the estimated 4,000 drugs in circulation (Warden 1992: 11).

The dramatic results of half-hearted pharma reform were a wake-up call to an industry which, in the mid-1960s, faced real political threats to cost recovery in its richest national market under Presidents Kennedy and Johnson. Paradoxically, the Democratic social conscience also created opportunities for the industry to rework its relation with government and to find new markets. The key measure here was the belated introduction in 1965 of a modicum of socialized medicine for the old and poor: Medicare promised comprehensive health care at an affordable cost for all older adults while Medicaid offered to pay medical bills for those on low incomes. The medium-term consequence of post-Kefauver reform plus Medicare was a new relation whereby the US Government became an active partner in the practice of medicine (Schnee 1978: 13). In the absence of any system for funding political parties or controlling electoral expenditure, that relation opened the way for intensive lobbying and political contributions that would increasingly align government and industry interests on the industry's own terms. For example, in the 1999-2000 election cycle alone, the pharma industry made campaign contributions topping \$23.4 million as well as funneling hundreds of millions of dollars to front groups and lobbyists and reportedly spending more than \$40 million on 'issue-ads' (*Washington Post*, 11 February 2001). Drawing on lobby disclosure reports filed with the Secretary of the Senate and Clerk of the House, Public Citizen, a non-profit organization, found that pharmaceutical-industry expenditure on lobbying grew from \$67 million in 1998 to almost \$109 million in 2003 (Public Citizen 2004: 44).

It is thus unsurprising, given the pharmaceutical industry's political importance and the apparent general acceptance of the good pharma narrative, that the Drug Price



Competition and Patent Term Restoration Act (or Hatch–Waxman Act) was presented as a pro-generic manufacturer's Bill but in reality carried enough concessions in the detail to ensure that pharmaceutical profits were not badly damaged. Prior to the Hatch–Waxman Act, manufacturers who wanted to market generic copies of ethical drugs had to wait for the original patents to expire before beginning a lengthy application and approval process and proving efficacy and safety by repeating many of the clinical tests already undertaken on the ethical equivalent. Under Hatch–Waxman, generic manufacturers were allowed to seek FDA approval to market the generic drug before the expiration of the ethical drug using an Abbreviated New Drug Application (ANDA) which meant that manufacturers only had to demonstrate bio-availability (i.e. the amount of active ingredient in the blood over a period of time has to come within plus-or-minus 20 per cent of that which is observed when the innovator's drug is ingested) rather than repeat the same tests as the innovator drug (Mossinghoff 1999: 190). The aim of this legislation was to introduce price competition quickly into the market once a drug's patent had expired and thus save the state and the consumer money on expensive ethical.

Yet the review that led to the Hatch–Waxman Act began under the Carter Administration as an attempt to compensate large pharmaceutical companies for the patent time lost whilst drugs were under regulatory review (Mossinghoff 1999: 188), and the Reagan Administration sought to remedy this problem to 'balance' the negative effects of generic competition on the large pharma companies. The Hatch–Waxman Act therefore also formally established a five-year data-exclusivity period and a total market-exclusivity time of fourteen years for new molecular entities. It also established that if a generic manufacturer claimed a patent was invalid or not infringed, then the patent owner had forty-five days to file an infringement action which automatically ensured another thirty months of exclusivity before an ANDA could be approved and generic competition could begin (Mossinghoff 1999: 190). Therefore, the industry was relatively protected from the effects of generic competition and managed the voracious competition from the generic companies by raising ethical prices during the patented period, as Exhibit C1.3 illustrates.

On market access, the Reagan Administration actively sought to open up international markets for US pharmaceutical companies, most notably through the 1985 market-oriented sector selected (MOSS) talks, which aimed to increase US access to the lucrative Japanese market. This priority was perhaps unsurprising when Edward Pratt, CEO of Pfizer Inc., was also a member of President Reagan's business advisory committee on international trade (Sherer 2000: 2248).

After the 1979 victories of Reagan and Thatcher in the USA and the UK, old social-democratic assumptions about regulation were turned upside down in the name of enterprise and without any recognition of the probability of unintended consequences. Thus, in the UK, the Thatcher Government reduced the Department of Health's regulatory requirements for the approval of clinical trials in a bid to boost efficiency in the

Kefauver had been solved it was highly probable that issues about drug safety would return to haunt legislators. As we have argued elsewhere, the emergent political ideology in the UK and USA was neo-liberalism with responsibility, where the electorate were promised a combination of market dynamism with social responsibility ensured by corporate governance and other kinds of re-regulation in financial services and privatized utilities (Erturk et al. 2004). From this point of view, scandals about drug safety and corporate social responsibility were a political crisis waiting to happen, even though Kefauver was more or less forgotten.

### *Back to the future: criticism of the industry in the 1990s and 2000s*

Nevertheless, the industry's lurch into crisis in a few short years after the late 1990s is really quite remarkable. When the authors of this case study published an updated statement of the bad pharma case (Froud et al. 1998), their academic article was seen by its few readers as a provocative, revisionist attack on an industry with a shining reputation. But within five years new stories about the old Kefauver problems of predatory pricing and unsafe drugs were on the front pages of the *Financial Times* and *Wall Street Journal* (e.g. *Financial Times*, 6 January 2005, 3 June 2004 and *Wall Street Journal*, 25 January 2005, 1 October 2004). These issues had a much higher profile in general business-press coverage of the pharma industry than the Ford Explorer roll-over problem had in coverage of Ford. The proportionality was not related to numbers killed or exposure to litigation, because the Explorer was in these terms very bad news when media reports alleged 600 had been killed in rollover accidents (see Case Study 2). The business press was obsessively interested in accumulating criticisms of bad pharma because everybody understood that (via reputation and regulatory change) these criticisms threatened pharma profitability in a way that overturned sport utilities did not in the auto sector. For example, large investors such as Legal & General, Schroder and Jupiter have warned that big pharma might find its corporate reputation shredded and profitability eroded if it failed to responsibly address health crises in poor countries (*Financial Times*, 24 March 2003).

The original issue at the heart of revived criticism of pharma was the unresolved contradiction between the high prices of ethical drugs and the low incomes of most of the rest of the world. Some low-income countries have ignored patents and produced copies of in patent ethical drugs for local consumption: for example, in Brazil, the Government licensed local production of in-patent anti-retroviral drugs, as well as importing generics from India, where patents have not until recently been recognized. Where patents have been respected by low-income countries, however, patients and funding bodies have been expected to pay the same prices as high-income countries, and this became the basis for the South African Government's 1997 Medicines Act, which was an attempt to provide a legal framework for producing lower-cost drugs. The law did not immediately



companies took the South African Government to court, with the public support of the Clinton Administration in the USA (Oxfam 2001a).

The legal dispute lasted two years and became the focus for newspapers and pressure groups in the late 1990s which focused on the needs of the 25 per cent of South Africans of working age who were HIV positive and who could not afford high-priced patented medicines (*Guardian*, 24 October 2001). Thus Kefauver's arguments were revisited and reworked in a new international context whereby the victims of pharmaceutical greed were not US citizens paying over the odds for drugs but poor Africans dying because they could not afford medication. Newspapers used human-interest articles and compelling photographs to mount a fierce critique of the prices pharma charged for drugs that might extend or save the lives of the poor (see, for example, *Observer*, 3 August 2003, *Guardian*, 22 February 2001). Such stories were supported with campaigns by organizations such as *Medicins Sans Frontières* (MSF) and Oxfam: the MSF newsletter condemned the high prices of Roche's AIDS drug Viracept (*Medicins Sans Frontières* 2002) while Oxfam's 'Cut The Cost' campaign highlighted the high costs of AIDS drugs and other medicines to sub-Saharan Africa (Oxfam 2001b).

The AIDS crisis in Africa changed the terms of public debate about pharma so that Stephen Lewis, the UN Special Envoy on AIDS, claimed 'the intellectual property debate is rendering human rights subsidiary to human greed' (quoted in the *Observer*, 3 August 2003). Pharma and Africa had been coupled to establish an image of corporate irresponsibility which overpowers discussion about practicalities such as the inadequacy of health-care infrastructure in some of the poorer countries. It was entirely appropriate that the questionable role of global pharma in Africa was the theme for a popular British novelist, John Le Carré (2001), who sets his thrillers against political backdrops. If Le Carré dealt with imagined corporate social irresponsibility in a far-away country, drug safety was much more explosively damaging to reputation when it became an issue inside the USA in 2004.

Events in 2003–4 vindicate Kefauver against all those senators and lobbyists who accused him of exaggeration. Now one major pharma company, GSK, has been damaged by allegations of failing to disclose relevant but adverse clinical-trial data for a major product, while another company, Merck, has been forced to withdraw a hugely successful blockbuster under suspicion of its safety, as accumulating problems raise fundamental questions about the integrity of the drug-approval process more generally.

GSK's problem was the allegation that it had concealed data about the side effects of its anti-depressant Paxil (also known as Seroquel) on children and adolescents. An ABC *Primetime Live!* news programme alleged internal company documents showed that Glaxo knew the drug was ineffective in treating such cases (see ABC 2004 for the full allegations). In unprecedented legal action, New York State Attorney Eliot Spitzer charged that GSK had concealed side effects from doctors by publishing only one of five clinical studies (*Business Week*, 3 June 2004). GSK settled the Spitzer law suit for \$2.5 million without admission of wrongdoing and on FDA instructions added a side-effects

limited, standard industry practices were called into question. GSK has reacted by posting more information about its clinical trials on the Internet via its Clinical Trial Register (GSK 2004b), a move that has been followed by the world's major pharmaceutical associations.

Merck's withdrawal of Vioxx was more damaging to the company. Vioxx was a blockbuster anti-arthritis drug which, according to observational studies, has potentially serious side effects in the form of substantially increased risk of heart attacks and sudden cardiac death (*Financial Times*, 7 January 2005). Again, there were claims that senior management in the firm knew about the risks of Vioxx and failed to disclose the relevant information. This case showed how, although blockbuster drugs could be the making of a global pharma company, they could also wreak substantial damage or even be its undoing. Through withdrawal Merck directly lost \$2.5 billion in annual sales and exposed itself to the threat of multi million-dollar lawsuits from patients and relatives. One month after the withdrawal Merck's share price was still down 40 per cent (*Financial Times*, 9 November 2004).

The next company in the dock was Pfizer, which spooked the market by toughing it out and refusing to withdraw Celebrex, another anti-arthritis drug with similarities to Vioxx, when it has already been censured by US regulators for misleading safety and efficacy claims in its consumer ads (*Financial Times*, 13 January 2005). The accumulating evidence suggests a systemic problem about how company financial interests colour safety and efficacy judgements and about thoroughly ineffectual regulation of drugs, especially after initial approval. These issues were focused by David Graham, a whistle-blowing FDA scientist called to testify before the US Senate's finance committee which was investigating Merck's withdrawal of Vioxx. Graham claimed the FDA was too close to the industry and that, as a consequence of flawed approval processes, it 'seriously undervalues, disregards and disrespects drug safety' while over-valuing the benefits of drugs (*The Economist*, 27 November 2004).

In December 2004, the White House Chief of Staff opined the FDA was doing a 'spectacular job' and 'should continue to do the job they do' (*Washington Post*, 21 December 2004). However, more bad news came for the industry when it was reported that controversial US documentary-maker Michael Moore had chosen health care as the subject of his next documentary. The PhRMA Director of Communications then showed he had learnt something but forgotten nothing: 'We have an image problem – not only with Michael Moore but with the general public... We're criticized on the Hill and in the press – put in the category of the tobacco industry even though we save lives' (*Detroit News*, 22 December 2004). Amidst all this criticism the FDA has proposed a new safety board, whilst even conservatives, such as Iowa's Republican senator Chuck Grassley, have called for more rigorous regulation through a new office of drug safety separate from the FDA (*Time*, 28 February 2005).



## THE PHARMA BUSINESS MODEL AND THE DRUGS PIPELINE

The focus now shifts away from contested representations of good or bad pharma and towards narrower issues about the pharma business model and how companies recover their costs, which involves analysis of corporate cost-recovery strategies and capital-market understandings of those strategies. These market understandings exist in a relation of constructive overlap with the companies' business practices on drug production and marketing, described in the opening pages of this section. And they are understood at firm level through the key analyst concept of the drugs pipeline.

Business models are, of course, dynamic and develop in response to changing industry conditions. It has been argued, for example, that in the 1940s and 1950s cost recovery in pharma was achievable through rapid scientific (mainly biochemical) advances which brought many new and socially useful drugs such as antibiotics to market (Bogner and Thomas 1996: 54). However, with the onset of tighter regulation following Kefauver and a more general slowdown in biochemical discovery, the pharmaceutical industry has developed a different business model that encompasses several interrelated practices. First, the objective is volume sales of blockbuster drugs as a basis for cost recovery; second, the means is productive conservatism and aggressive marketing to build such blockbuster sales.

Pharma-company strategy also includes a company narrative. Pharma companies have traditionally traded at starchy P/E ratios, and any loss in confidence by the capital market can undermine the share price. At the centre of the business narrative about the pharma industry is the idea of the pipeline. This has become the subject of extensive corporate disclosure and explanation because it promises to give outsiders an insight into the future portfolio. The pipeline makes the future visible and revenues predictable in so far as drugs move slowly through the development phases towards the market and, for drugs that are in the market, patent-expiry dates are also public knowledge. While patent-expiry dates are apparently fixed, there is considerable uncertainty about other aspects of the business model.

### The pursuit of blockbuster sales

More than twenty years ago, Piore and Sabel (1984) announced a general tendency towards flexible specialization and manufacture of short runs of differentiated products. Nobody told the pharma companies, who constructed a growth industry around repeat sales of 'blockbuster drugs' which are defined technically as ethical drugs that generate annual sales of at least a billion dollars.

Blockbusters are important to the large pharmaceutical firms because they account for a significant (and growing) proportion of the total spend on drugs, thus increasing the incentive to own the relatively few drugs that capture a larger slice of total prescriptions in a particular therapeutic segment. The top-fifty selling drugs in the USA accounted for 44 per cent of total outpatient retail drug sales in 2001 while the remaining 9,482 drugs accounted for the other 56 per cent available for sale (NIH/CDC 2002a: 6). Moreover, pharmaceutical firms can charge more for blockbusters than they can for other drugs – in 2001 the average price of a prescription for one of the top fifty drugs was \$71.56 compared with just \$40.11 for the others, with those blockbusters with the largest market share in their therapeutic areas being the most expensive (NIH/CDC 2002a: 8). Evidence on the pharmaceutical industry shows that blockbuster drugs have become more important over the past twenty years. In 1990 there were just seven blockbusters but, by 2002, this figure was sixty-five (Deutsche Bank 2003b: 11). Furthermore, the top-ten best-selling drugs accounted for 5 per cent of industry revenues in 1985, while in 2002 this figure was 12 per cent (Deutsche Bank 2003b: 27).

Blockbusters are not accidental products, they are deliberately created by pharma firms who are now consequently more reliant on blockbusters than they have ever been historically (Reuters Business Insight 2004: 25). At the same time, the focus on blockbusters also reflects an adaptation to what the individual pharma company encounters as two environmental fixities: first, the segmentation of the market into discrete therapeutic areas and second, the marked slowdown in biochemical advance. Of course, therapeutic areas are partly the constructs of companies who use them as a way of classifying the drugs in their portfolio, but they also exist in a very real sense as ineluctable market constraints. Although companies attempt to patent drugs for as wide a range of patients and conditions as they can, no one drug has the healing properties to make it suitable to treat a broad spectrum of illnesses and conditions. The pharmaceuticals market is thus segmented into a number of small, fragmented and discrete therapeutic areas which companies aim to dominate.

The pharma industry is one of contrasts in terms of industrial structure and market segmentation. The supplying industry is unusual by late-capitalist standards because it remains relatively fragmented despite a whole series of M&A in the 1990s and 2000s: as Exhibit C1.6 shows, in 2003 only one company, Pfizer, had a market share of more than 10 per cent and only two (Pfizer and GSK) had shares of more than 5 per cent. But, as explained above, companies compete in a segmented market with discrete therapeutic areas within which small numbers of individual drugs have high shares: as Exhibit C1.7 indicates, the largest companies achieve market shares of more than 15 per cent in at least three therapeutic areas. The therapeutic areas are effectively separate product markets because there are few drugs that can be used to treat problems in more than one therapeutic area. This creates the opportunity to secure a large proportion of the revenue in particular therapeutic segments by convincing physicians that a particular drug is the most effective. Once achieved, market share is buttressed by patents which insulate



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**Exhibit C1.6 Market share of the ten largest pharmaceutical companies, 2003**

| Ranking | Corporation          | Market Share (%) |
|---------|----------------------|------------------|
| 1       | Pfizer               | 10.1             |
| 2       | GlaxoSmithKline      | 6.6              |
| 3       | Merck & Co           | 4.8              |
| 4       | Johnson & Johnson    | 4.8              |
| 5       | Novartis             | 4.3              |
| 6       | AstraZeneca          | 4.1              |
| 7       | Aventis              | 3.7              |
| 8       | Bristol Myers Squibb | 3.4              |
| 9       | Roche                | 3.3              |
| 10      | Abbott               | 2.8              |

Source: ABPI (2005)

Strategies of dominating particular therapeutic segments become all the more attractive under conditions of limited scientific advances and hence fewer new products. And this has been the case in pharma over the past few decades. In 1955 the total number of new products approved by the FDA was 403 compared with just seventy-eight in 2002 (Schnee and Calgarcan 1978: 94 and FDA/Centre for Drug Evaluation and Research statistics). The industry can make good the deficit of innovation by increasing the price of those drugs that are in the market (see Exhibit C1.3), which may partially compensate for the relative lack of new product, but it does also make the pharma companies more reliant on a small number of high therapeutic-share blockbuster drugs. Exhibit C1.8 illustrates this point: for some smaller pharmaceuticals companies such as Biogen, TAP and Forest, one or two blockbusters can account for 70 per cent to 90 per cent of company revenues for as long as the patent lasts. This also suggests that because fewer new patented products are in circulation it becomes easier to dominate one therapeutic segment with just one drug.

However, this makes the individual company desperately vulnerable to patent expiry. As Eli Lilly shows, patent expiry can be a big problem for medium-sized companies: once the Prozac patent ran out, there were severe falls in unit price and thus revenues and stock price, as generic competitor products become available while the Lilly company did not have another blockbuster that could maintain growth. The largest drug companies have a significant portfolio advantage here. Those like Pfizer, Merck and GSK are also heavily dependent on blockbusters to generate sales revenue but are less vulnerable because they have a portfolio of blockbuster drugs across therapeutic areas, which spreads risk and limits exposure to early patent challenges on one drug. As Exhibit C1.8 shows, Pfizer's eight blockbusters together contributed 79 per cent of company sales in 2002, while GSK's eight blockbusters generated a more modest 53 per cent of sales.

**Exhibit C1.7 Share of key pharmaceutical products by therapeutic segment (2002)**

|                      | Cardio          | CNS            | Anti-infectives  | Respiratory     | Metabolism    | Gastro-intestinal | Oncology       | Hormones         | Muscular        | Other           |
|----------------------|-----------------|----------------|------------------|-----------------|---------------|-------------------|----------------|------------------|-----------------|-----------------|
| AstraZeneca          | XX<br>Crestor   | X<br>Seroquel  |                  | XX<br>Pulmicort |               | XXX<br>Nexium     | XXX<br>Zoladex |                  |                 |                 |
| Aventis              | X<br>Lovenex    |                | X<br>Several     | XX<br>Allegra   |               |                   | XX<br>Taxotere | X<br>Lantus      |                 |                 |
| Bristol Myers Squibb | XX<br>Pravachol |                | XX<br>Zerit      |                 |               |                   | XX<br>Various  |                  |                 |                 |
| Eli Lilly            |                 | XXX<br>Zyprexa |                  |                 | X<br>Evista   |                   | X<br>Gemzar    | XXX<br>Insulin   |                 |                 |
| GlaxoSmithKline      |                 | XX<br>Paxil    | XXX<br>Trizivir  | XXX<br>Advair   | X<br>Avandia  | X<br>Zantac       |                |                  |                 | XXX<br>Vaccines |
| Merck                | XXX<br>Zocor    |                | X<br>Crixivan    | XX<br>Singulair | XX<br>Fosamax |                   |                |                  | XXX<br>Vioxx    | XXX<br>Vaccines |
| Novartis             | X<br>Diovan     | X<br>Clozaril  |                  |                 |               | XX                |                | X                | XXX<br>Voltaren | Neoral          |
| Roche                |                 |                | XXX<br>Rocephin  |                 | X<br>Xenical  |                   | XXX<br>Rituxan |                  |                 | X<br>Cellcept   |
| Schering-Plough      | XXX<br>Lipitor  | XXX<br>Zoloft  | XXX<br>Zithromax | X<br>Zyrtec     |               |                   | X<br>Camptosar | XX<br>Genotropin | XXX<br>Celebrex | X<br>Viagra     |
| Schering-Plough      |                 |                | XX<br>PEG-Intron | XX<br>Clarinet  |               |                   |                |                  |                 |                 |
| Schering-Plough      | XX<br>Plavix    | X<br>Ambien    |                  |                 |               |                   |                |                  |                 |                 |
| Schering-Plough      | X<br>Blosser    |                |                  |                 | X<br>Actos    | XX<br>Prevacid    | X<br>Lupron    |                  |                 |                 |
| Schering-Plough      |                 | X<br>Effexor   |                  |                 |               | X<br>Protonix     |                | XXX<br>Premarin  | X<br>Enbrel     | XX<br>Vaccines  |

XXX = 15+% market share, XX = 5–15% market share, X = good presence

Source: Deutsche Bank (2003b: 23)



**Exhibit C1.8** Contribution of blockbuster drugs to total ethical sales, 2002

| Company           | Blockbuster sales<br>\$ million | Total ethical sales<br>\$ million | Blockbusters as<br>% of total sales | Number of<br>blockbusters |
|-------------------|---------------------------------|-----------------------------------|-------------------------------------|---------------------------|
| Biogen            | 1,034                           | 1,148                             | 90                                  | 1                         |
| TAP               | 3,600                           | 4,037                             | 89                                  | 1                         |
| Pfizer            | 22,291                          | 28,288                            | 79                                  | 8                         |
| Forest            | 1,423                           | 2,022                             | 70                                  | 1                         |
| Merck & Co        | 14,670                          | 21,631                            | 68                                  | 5                         |
| Aigen             | 3,187                           | 4,991                             | 64                                  | 2                         |
| J&J               | 9,754                           | 17,151                            | 57                                  | 5                         |
| GSK               | 14,240                          | 27,003                            | 53                                  | 8                         |
| Schering Plough   | 4,538                           | 8,745                             | 52                                  | 2                         |
| Novo Nordisk      | 1,881                           | 3,810                             | 49                                  | 1                         |
| Lilly             | 4,692                           | 10,384                            | 45                                  | 2                         |
| AstraZeneca       | 7,746                           | 17,343                            | 45                                  | 3                         |
| Wyeth             | 5,022                           | 11,733                            | 43                                  | 3                         |
| Aventis           | 5,463                           | 15,104                            | 36                                  | 3                         |
| Bayer             | 1,588                           | 5,352                             | 30                                  | 1                         |
| Sanofi-Synthelabo | 2,590                           | 8,705                             | 30                                  | 2                         |
| BMS               | 4,156                           | 14,700                            | 28                                  | 2                         |
| Novartis          | 3,810                           | 13,493                            | 28                                  | 3                         |
| Pharmacia         | 3,050                           | 12,037                            | 25                                  | 1                         |
| Abbott            | 1,102                           | 8,451                             | 13                                  | 1                         |
| <b>Total</b>      | <b>115,837</b>                  | <b>236,129</b>                    | <b>49</b>                           | <b>55</b>                 |

Source: Reuters Business Insight (2003a: 104)

Note: excludes Roche/Genentech due to non-standardization of total ethical sales and Purdue Pharma (privately owned); blockbusters are defined as ethical drugs that generate at least \$1 billion of sales in one year

## Productive conservatism and aggressive marketing

If the aim of the giant pharma companies has been blockbuster-driven growth, how is this to be achieved? Blockbusters do not simply happen, they have to be created through a combination of scientific and marketing efforts. The discussion of means and instruments takes us back to the industry-framing about good and bad pharma. Are sales enhanced through investment in R&D which generates innovative products from fundamental advances as the industry claims? Or, are sales driven by marketing of imitative products which result from slower scientific advance as suggested by the industry's critics? This section's examination of the evidence supports the second, more critical, view of pharma as an industry characterized by modest innovation and aggressive marketing.

The good-pharma frame couples R&D expenditures with 'new medicines', but many patented drugs are 'me-too' variants of existing products and do not represent significant discoveries. Some of the most successful drugs of the 1990s and 2000s are simple variants with slight molecular alterations which allow a new patent: in Glaxo's case, Zantac was a variant on the original anti-ulcerant, Tagamet, from SmithKline just as Paxil/Scroxat was a variant on Eli Lilly's Prozac. More systematic evidence confirms this impression. The US FDA has a grading system for new drugs awaiting patent approval. Of the 1,035 new drugs approved by the FDA between 1989 and 2000, two-thirds used active ingredients already on the market (Harrison 2003: 14). It was also found that just 153 of the 1,035 new drugs approved were 'Priority' rated NMEs (which indicates significant medical improvement). The rest were deemed to be 'Standard' rated, i.e. of little or no medical improvement (NIH/CMM 2002b: 3).

If relatively few significant medical improvements emerge from the R&D effort in pharmaceuticals companies, this may be because research is only a very small part of the R&D process: laboratory research by scientists in white coats typically accounts for less than 10 per cent of total R&D expenditure with development taking the form of product testing focusing on efficacy, dosage, safety and side effects in clinical trials accounting for the rest (Financial Times Management Report 1995: 32). Dosage and side effects are inherent major problems of the blockbuster model. The ultimate business objective is to find a universal remedy within each therapeutic class, i.e. a drug that could be prescribed to every patient who presents with high blood pressure, depression or whatever. But that is complicated by considerable variation in the response of individual subjects and the presence of other medical conditions.

If the good-pharma frame emphasizes research not development, it also glosses over the practice of marketing, which is central in the bad-pharma frame. Marketing is again inevitably costly because, in the absence of fundamental innovation, many ethicals are high-price drugs that are competing with older but cheaper generic alternatives which do much the same job. The data on the level of marketing expenditure is striking in two ways. First, giant pharma company accounts disclose that sales and marketing expenditure is typically two to three times higher than expenditure on R&D: as Exhibit C1.9 shows, typically companies spend 13–15 per cent of sales revenues on R&D while sales and marketing absorbs at least 30 per cent of sales. Second, as Exhibit C1.10 shows, many pharma companies spend as much or more of revenue on sales marketing as do companies, such as Coca-Cola, Nestlé or Proctor & Gamble, that sell branded goods to consumers.

The huge pharma expenditure on marketing is not generally visible to the ordinary citizen because pharma marketing has always been focused on the doctor/prescriber, rather than the patient or the general public. Many countries, like the UK, retain regulations which prevent direct marketing of ethicals through television adverts and suchlike. Even in the USA, where direct-to-consumer (DTC) advertising is allowed, DTC marketing spend accounts for just 1.5 per cent of US pharmaceutical sales (PhARMA 2003: 14).



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**Exhibit C1.9** Comparison of expenditure on sales and marketing with research and development in 2000

|                      | Spend on sales and marketing as a % of sales revenues | Spend on research and development as a % of sales revenues |
|----------------------|-------------------------------------------------------|------------------------------------------------------------|
| Pfizer               | 39                                                    | 15                                                         |
| Schering Plough      | 37                                                    | 13                                                         |
| GSK                  | 37                                                    | 13                                                         |
| AstraZeneca          | 36                                                    | 17                                                         |
| Roche                | 30                                                    | 13                                                         |
| Aventis              | 32                                                    | 15                                                         |
| Novartis             | 31                                                    | 13                                                         |
| Eli Lilly            | 28                                                    | 19                                                         |
| Bristol Myers Squibb | 21                                                    | 12                                                         |

Source: Company Annual Report and Accounts, various years

**Exhibit C1.10** The significance of sales and marketing costs for selected non-pharma companies in 2000

| Company          | Spend on sales and marketing as a % of sales revenues |
|------------------|-------------------------------------------------------|
| Coca-Cola        | 36                                                    |
| Nestle s.a.      | 32                                                    |
| Panasonic        | 27                                                    |
| Proctor & Gamble | 26                                                    |
| Sony             | 24                                                    |
| Microsoft        | 18                                                    |
| IBM              | 17                                                    |

Source: Company Annual Report and Accounts, various years

relatively small group (Harrell 1978: 70) with discretion about how to spend significant drug budgets. The industry employs a huge and growing sales force to influence the doctor's choice: Reuters estimate that the sales force of the largest pharmaceutical companies in the USA doubled between 1996 and 2001, with an estimated 100,000 sales reps presently servicing the US market alone (Reuters Business Insight 2003b: 116, 118).

It is estimated that in the USA, roughly 75 per cent of the sales and marketing budget of pharmaceutical companies goes on 'detailing', where a sales representative meets a doctor face to face, with roughly 70 per cent of physicians admitting that they would consider changing their prescription habits in response to detailing messages (Reuters Business Insight 2004: 33). If detailing is an attempt to educate physicians, it has also traditionally involved giving away free samples, small trinkets, meals and even all-expenses-paid trips to resorts (Madhavan et al. 1997: 207). This has sometimes led to

criminal fines and out-of-court settlements following an investigation of their marketing of Zoladex, a prostate cancer treatment. The Department of Justice alleged that AstraZeneca had given away free samples of the treatment 'knowing and expecting' that some doctors would seek reimbursement for the treatments from Medicare and Medicaid, while doctors were paid 'illegal remuneration' including travel and entertainment (*Financial Times*, 21 June 2003).

Even if detailing is an effective way of communicating, it is expensive and adds to the cost of every prescription paid for by the taxpayer or the patient. One campaign group estimates that in 2000 pharmaceutical companies' detailing expenditure amounted to a colossal \$12.7 billion when the cost of free samples is included (CALPIRG 2004: 3).

The balance between R&D and marketing reflects the difficulty of fundamental biochemical advance which would create new treatment possibilities for diseases such as Alzheimer's and arthritis. But it also reflects the appropriation of research and marketing activity characteristics inside a capitalist business model. The two key activities in the business have very different characteristics: research is characterized by unpredictable timing, informality, modest expenditure and unpredictable results, while marketing is characterized by predictable timing, formality, huge expenditure and planned results (Chiesa 1996). Under pressure for financial results, giant capitalist enterprises find marketing much more congenially predictable and financially rewarding.

From a productive perspective, the industry estimates that there is only a one in 5,000 chance of any compound eventually getting approved by the FDA (PhRMA 2003: 6) and that the average development cost for each approved drug is approximately \$800 million, with such costs recovered in only 30 per cent of cases (PhRMA 2003: 5). The cost of drug development is almost certainly exaggerated in such industry estimates; a public-interest group, Public Citizen (2001: 4) put the figure closer to \$110 million. But the development costs are still significant enough for Big Pharma to pursue a two-pronged strategy of productive conservatism that reduces exposure to risk. First, companies develop and secure patents on me-too variants of already-successful drugs, as previously discussed; second, they attempt to manage the product life cycle so as to extend the patent life of a drug beyond the usual twenty years allowed by the FDA. A classic tactic here is to change the delivery method: thus, Bayer's Cipro was originally only available as an oral tablet, but was later developed as an intravenous formulation so that it maintained a strong revenue stream for a sixteen-year period, which contrasts favourably with the industry average of around six to ten years per drug (Reuters Business Insight 2003a: 53). The cost savings are spectacular when the \$10–50 million cost of clinical trials for reformulations and line extensions is compared with the \$800 million figure mentioned previously (Reuters Business Insight 2004: 22).

In stark contrast to the conservatism of Big Pharma's R&D effort, marketing is aggressively focused on the continuous promotion and regular relaunching of 'improved' product. Ideas are turned into saleable product over a development lead time of ten to fifteen years (Dauterbach 2003a: 13). And any reduction of innovative R&D expenditure on



fastest-growing therapeutic areas (oncology) may prove misguided when these can change dramatically over that development period. By way of contrast, marketing is about nimble decisions to exploit therapeutic areas with volume potential once drugs clear the development stages or competitors' drugs lose patent. The pharmaceutical business model therefore is about positioning, but it is about positioning from a marketing perspective where quick, focused strategic moves can make or break a drug. Marketing moves can establish a strong sales base in areas with volume potential in several ways: by pushing a new drug, rejuvenating an old one or relaunching old drugs for new applications.

When new drugs clear the approval system, they must be established as quickly as possible to crowd out competitors. This is because the growth rate and market share gained in the first year after launch has a great influence on the sales that can subsequently be achieved (Reuters Business Insight 2003a: 43). However, marketing can also be used to extend the revenue stream despite equal or even weaker trial performance. AstraZeneca's aggressive marketing of Nexium as a successor to out-of-patent Losec led many physicians to change over to the new drug even though trials suggested Nexium performed no better and was perhaps even less efficacious than Losec (Reuters Business Insight 2003a: 50–2). Furthermore, the most successful drugs are not necessarily the new ones that have just emerged from Phase III trials. Blockbuster sales in the two largest therapeutic segments, cardiovascular and CNS, have been driven by Pfizer's Lipitor, Lilly's Zyprexa and Wyeth's Effexor (Reuters Business Insight 2004: 24) which are all established drugs that had been given a marketing push.

Timing is critical in pharma. This is particularly so if a major competing product comes off patent, where the vigorous marketing of either an old or new drug presents an opportunity to 'make' a new blockbuster. The successful pharmaceutical company is therefore one that can maintain a portfolio of drugs in areas of volume sales, and these are not (or at least not only) created and sustained by developing novel drugs with superior medical-trial results, but by applying marketing to new or existing drugs at critical times. This is supported by Reuters Business Insight's (2004) finding that pharmaceutical revenues are directly proportional to investment in sales and marketing, so that the more a company spends, the more it will recoup in terms of sales revenues.

The significance of marketing is also underlined by the growing importance of Phase IV trials. Phase IV trials are those that take place after the FDA, European Medicines Evaluation Agency (EMA) or Ministry of Health and Welfare (MHW) Japan have given approval for the drug to be manufactured, distributed and marketed. The function of Phase IV trials are in theory to further monitor and assess drug safety once a product enters the open market. However, increasingly they are also used to gather further performance results from head-to-head studies, which can then be exploited by their marketing departments in an attempt to expand the remit of the drug to treat new ailments or to further differentiate the product from those of its competitors (Reuters Business Insight 2003a: 38, 40). Under conditions where fewer NCEs are passed by the FDA, pharmaceutical companies have to leverage maximum value from their existing

products and provide whatever support they can for their marketing team. In each of these cases, the profitability of the drug in question does not depend on its overall record on safety or efficacy but on how sales and marketing exploit this information in a reactive way to secure positions in therapeutic areas with volume potential. Hence, it is not surprising that the compound annual growth rate of pharmaceutical spending on Phase IV trials increased from 17 per cent between 1985 and 1995 to 23 per cent between 1995 and 2000. This rate of growth is higher than that for Phase I–III trials where the comparable growth rates have been 14 per cent and 16 per cent over the same periods (Reuters Business Insight 2003b: 121).

### The analysts' view: visibility and predictability?

The pharma business model can be described from public interest and academic texts. What analysts offer is a stock-market appropriation of that business model with a distinctive extra emphasis on key indicators such as patent expiry and the development pipeline, which have direct implications for revenue and profit at the individual company level. Thus blockbusters for analysts have much the same significance as stars for Hollywood producers because the bankable star or product is a key indicator of present (and future) success. Until recently, blockbuster-driven sales growth has remained a largely unquestioned strategy in stock-market commentary with blockbusters presented as the only viable way of meeting shareholders' high growth expectations (Reuters Business Insight 2003a: 10).

One of the central dilemmas of the stock market is that the price of shares should notionally reflect the discounted present value of future earnings, but in most activities it is difficult to predict the future trend of earnings with any certainty because of product market competition, as for example in cars, where much depends on the relative success and failure of new and yet-to-be-launched models. From the analyst's point of view, pharma is different because the future stream of earnings is much more predictable under three special-case revenue conditions which derive from the property rights that limit competition: first, analysts know the unexpired patent life for the key products of the business; second, future earnings are closely related to the current portfolio of drugs; and third, the pipeline of new product is disclosed and discussed at length by the giant pharma companies. Some have proposed alternative measures for assessing the prospects of giant pharma companies, so that Britzman et al. (2002) suggest a patent-based analysis, but the three orthodox indicators continue to dominate analyst understandings of the business.

In this section, we will briefly describe how the revenue conditions operate, noting that they increasingly do so in ways that complicate an already-stressed traditional business model. But the revenue conditions remain important for analysts because they



should make the earnings prospects of pharma companies much more transparent and visible. The language used in analysts' reports explicitly refers to pipeline and patents as the principal generator of 'news flow' (CIBC 2003: 1, Bear Stearns 2003a: 1) while the visual language used in many reports is equally striking when, for example, Morgan Stanley (2002: 2) discusses the pipeline in terms of 'long-term revenue growth visibility'.

It is also quite clear that pharma-company managements release news about pipeline developments, through briefings and annual R&D days, in ways that make the companies and their analysts joint-authors of a narrative. This emerges clearly in many reports as when Lehman Brothers (2004: 1) claim 'management reiteration of EPS guidance . . . (and) positive comments on pipeline visibility . . . has encouraged the market'.

Patent expiry is relevant in the pharma business because the expiry dates of major drug patents are public knowledge, and it is nearly certain that revenue will fall away precipitously as soon as the patent expires and generics become available. Generic versions of ethical drugs are exact molecular copies and hence, in principle, equally effective but, as previously mentioned, typically retail at a discount of between 10 per cent and 70 per cent (Reuters Business Insight 1998: 19) so that an ethical drug that comes to the end of its patent term will usually lose two-thirds of its revenues within three years. For example, three months after Naprosene went off patent, Syntax, its manufacturer, lost 75 per cent of its market to the generic product (Mossinghoff 1999: 191) or, more famously, Lilly's anti-depressant Prozac lost 73 per cent of its share of new prescriptions to generic copies in the first two weeks of going off patent (Tuttle et al. 2004: 89). The complication is that ethical drugs are typically covered by a variety of different patents and there is scope for attack and defence so that expiry dates are increasingly less certain than they appear. We have already noted that pharma companies are extending drug patents by, for example, changing delivery systems, and we could now add the point that the growing number of incrementally modified drugs provides a high return on investment because they use active ingredients with a proven track record of safety and efficacy, thus reducing both risk and costs (NIH/CDC 2002b: 4). Generic manufacturers also increasingly use legal challenges through the courts to break patent protection, such as Indian generic company Ranbaxy's audacious attempt to overturn Pfizer's patent on Lipitor (*Wall Street Journal*, 11 January 2005). The front pages of analysts' reports on pharma companies often discuss the implications of recent patent defences against generic manufacturers which might indicate a shortened patent life. Hence, in the past three years, various analyst reports on Pfizer have headlined at least three patent challenges: Lipitor (Smith Barney Citigroup 2004), Neurontin (Salomon Smith Barney 2003) and Norvasc (Credit Suisse 2002).

The loss of patents on old ethical drugs matters in so far as the company does not have new drugs coming through the pipeline and onto the product market. The stock market is therefore intensely interested in the new-product pipeline and in the number of promising products in the later stages of development. Analysts and companies stereotype the development process in terms of a series of phases which follow on from discovery with average duration from Phase I to market currently around eight years.

Phase I tests are conducted on a sample of healthy trialists; Phase II tests are on a small number of patients at various dosages; while Phase III tests the drug on a large number of patients at multiple sites (Hara 2003: 21). For analysts, the pipeline is of as much interest as the patent status and expected term of those products that have been approved.

More exactly, it is the later stages of the pipeline that matter because the failure rate is high as drugs move from one phase to the next. Thus, for example, ABN AMRO (2002: 7) includes only Phase III and marketed drugs in its discounted-cash-flow valuations of companies within the sector. Phase I and II drugs are completely omitted from forecasts because proof of concept or efficacy data is rarely generated until late Phase II trials. More generally, the fact that 60 per cent of all drugs entering Phase II trials will not make it to Phase III (Deutsche Bank 2003b: 34) justifies brokers' sceptical handling of Phase II pipeline products as there is little guarantee that these will eventually reach the market. Thanks to regular and detailed disclosures by the large companies, the products in the later stages of the pipeline are well understood by analysts.

Here again, complications prevent certainty and predictability. In the later stages of development, the key issue for analysts is which drugs are likely to gain approval (and for what treatments) and how quickly approval can be gained. There is uncertainty about both timing and outcomes when drugs can fail at the later stages of development. The rejection of late-stage drugs can have a dramatic effect on revenues and, by implication, future strategy. AstraZeneca sacked 10 per cent of its US workforce to save costs after the regulators rejected Exanta, a blood-thinning drug, and a study showed that its cancer treatment drug Iressa failed to help cancer patients live longer (*New York Times*, 7 January 2005).

All this discussion of individual company prospects takes place against a background where the pharma trade associations and others admit the business model is increasingly stressed by industry-wide developments. The stock market can of course adapt to all this because the market is both about the pursuit of perfection and the adaptation to radical imperfection. If analysts had sufficient understanding of the key indicators, and the indicators operated with clear-cut force, then the market could treat pharma shares as promissory notes. As the complications intrude in the form of events such as late stage failure or premature patent loss, they create trading opportunities related to what is not in the price, and trading pharma shares becomes just like trading auto shares without the cyclicity. Adaptation may be more difficult for the pharma companies whose property rights and research productivity traditionally justified a high P/E ratio. For the companies, it is increasingly a struggle to keep things going.



## GLAXO: KEEPING IT GOING

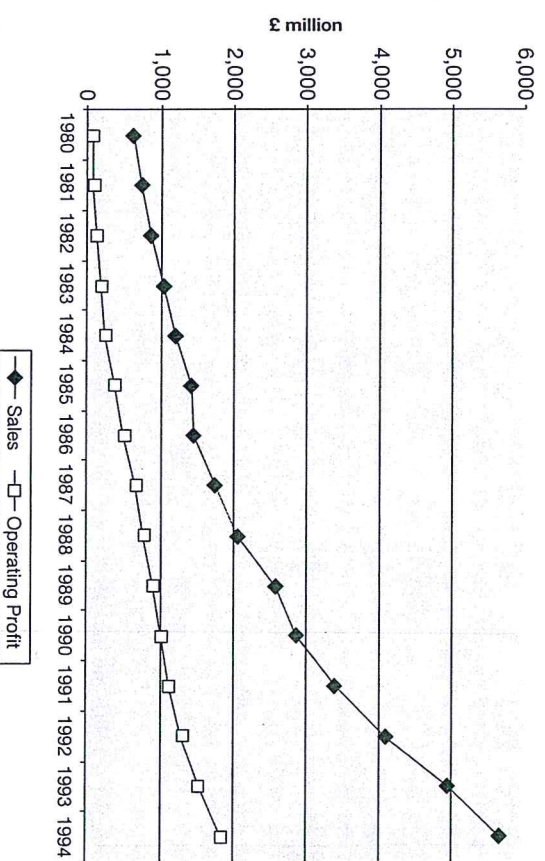
Glaxo since the early 1980s is a brilliant story of upward corporate mobility. In earlier decades it had been a minor national player like many others in Europe, and the company only entered the US pharmaceuticals market in 1978 (GSK 2004a). Thanks first to organic growth and subsequently to merger, between 1981 and 2002 Glaxo then rose from the twentieth- to the second-largest pharmaceutical company in the world by sales (Deutsche Bank 2003b: 18). In the absence of any kind of indigenous British technology sector, this trajectory ensured that Glaxo became an important constituent of the FTSE 100. On a market capitalization basis, by 2002 GlaxoSmithKline was one of the three largest companies in the UK and, together with BP Amoco and Vodafone, accounted for some 25 per cent of the aggregate market valuation of the FTSE 100 (Randles 2002: 344).

Glaxo is also a suitable case for analysis because, as many observers understand, its success has never rested on fundamental innovation. Lynn's (1991) book internalized the good-pharma-bad-pharma opposition through his contrast of innovative Merck and marketing-led Glaxo. More recently, Deutsche Bank (2003b) agrees in a less moralistic way when it recognizes Glaxo's competence in marketing as the company's key corporate asset. Furthermore, the means to growth in successive periods make Glaxo emblematic of the broader industry. From the early 1980s onwards, Glaxo's organic growth was driven by Zantac, the biggest blockbuster the industry had ever seen. Whereas in a second phase, Glaxo shifted to M&A with the 1995 acquisition of Wellcome and the 2000 merger with SmithKlineBeecham (SKB), which were both classic exercises in defensive horizontal merger.

This section considers in turn these two successive phases of Glaxo's growth. In the first phase, the marketing of Zantac brought a brilliant financial success where the stock market was the main beneficiary; and in the second phase, defensive merger aimed to keep things going for the stock market through two major deals within six years. None of this is intended to disparage the company: Glaxo's success has been built on its early and complete recognition of the conditions of success (in first marketing and then cost-cutting) in an industry where others were more complacent or arrogant. Glaxo's first acquisition Wellcome was sometimes described as the only university with a stock market quotation. Glaxo could certainly not be disparaged in these terms and indeed has reversed the relation in so far as Richard Sykes, its CEO from 1993 and Non-Executive Chairman from 2000 retired to become Rector of Imperial College and to found a new role in bringing his expertise to university reorganization.

## Zantac or up, up and away (1982–94)

Glaxo is quite unlike the average FTSE 100 company which, as we have seen in the introduction to this book, grows about as fast as GDP. As *Exhibit C1.11* shows: between 1980 and 1994, nominal sales increased 815 per cent while nominal operating profits increased 2,656 per cent, albeit both from low bases (see also Tables C1.1 and C1.2 in the appendix, pp. 210, 211). Glaxo had several successful products including the asthma drug Ventolin, which in 1981 was the world's most prescribed medicine in terms of number of prescriptions (Glaxo Annual Report and Accounts 1981: 7). But the spectacular growth of revenue and profit was driven by one successful blockbuster, Zantac, an anti-ulcerant launched in 1982 in Europe and 1983 in the USA and aimed primarily at patients with duodenal and gastric ulcers. Zantac became the best-selling drug in history (Wright 1996) and the first pharmaceutical product to achieve sales of £1 billion (Glaxo Annual Report and Accounts 1988: 4).



*Exhibit C1.11 Glaxo sales and operating profit, 1980–94 (nominal data)*

Source: Company Annual Report and Accounts, various years

*Exhibit C.12* clearly shows Zantac's contribution. In terms of revenues, Zantac contributed half of overall sales at the peak in 1989, and this one drug accounted for more than 30 per cent of overall sales in each of the eleven years between 1985 and 1995 (see also appendix, Table C1.13, p. 222). Zantac produced strong and consistent growth



**Exhibit C1.12 Zantac's share of total sales at Glaxo, Glaxo Wellcome and GlaxoSmithKline, 1980–2002**

| Zantac sales | Zantac sales as a % of overall company sales | Zantac sales as a % of therapeutic segment (anti-ulcerant/metabolic and gastro-intestinal) | Annual change in Zantac's sales |
|--------------|----------------------------------------------|--------------------------------------------------------------------------------------------|---------------------------------|
| £ million    | %                                            | %                                                                                          | %                               |
| 1980         | 0                                            | n.a.                                                                                       | n.a.                            |
| 1981         | 0                                            | n.a.                                                                                       | n.a.                            |
| 1982         | 37                                           | 4.3                                                                                        | 100.0                           |
| 1983         | 97                                           | 9.4                                                                                        | 100.0                           |
| 1984         | 248                                          | 20.7                                                                                       | 100.0                           |
| 1985         | 432                                          | 30.6                                                                                       | 100.0                           |
| 1986         | 606                                          | 42.4                                                                                       | 100.0                           |
| 1987         | 829                                          | 47.6                                                                                       | 100.0                           |
| 1988         | 989                                          | 48.0                                                                                       | 100.0                           |
| 1989         | 1,291                                        | 50.2                                                                                       | 100.0                           |
| 1990         | 1,401                                        | 49.1                                                                                       | 100.0                           |
| 1991         | 1,606                                        | 47.3                                                                                       | 100.0                           |
| 1992         | 1,807                                        | 44.1                                                                                       | 100.0                           |
| 1993         | 2,172                                        | 44.1                                                                                       | 100.0                           |
| 1994         | 2,442                                        | 43.2                                                                                       | 100.0                           |
| 1995         | 2,255                                        | 32.2                                                                                       | 100.0                           |
| 1996         | 1,931                                        | 23.2                                                                                       | 99.2                            |
| 1997         | 1,375                                        | 17.2                                                                                       | 99.6                            |
| 1998         | 757                                          | 9.5                                                                                        | 99.5                            |
| 1999         | 640                                          | 7.5                                                                                        | 98.9                            |
| 2000         | 575                                          | 3.2                                                                                        | 46.7                            |
| 2001         | 505                                          | 2.5                                                                                        | 34.1                            |
| 2002         | 382                                          | 1.8                                                                                        | 26.7                            |
| 2003         | 328                                          | 1.5                                                                                        | 23.0                            |

Source: Company Annual Report and Accounts, various years

through the 1980s and mid-1990s, with double-digit sales growth in every year between 1983 and patent expiry in 1997, with the one exception of 1990. This growth trajectory was possible because Zantac had succeeded in capturing the segment: by 1993, Zantac had secured 38 per cent of the total worldwide anti-ulcerant therapeutic segment, having gained well over 50 per cent of the H<sub>2</sub>-receptor blocker market in the USA four years previously (Wright 1996: 29). (An H<sub>2</sub>-receptor blocker is an antihistamine that reduces stomach-acid secretion and helps heal peptic ulcers.) Table C1.13 (p. 222) also shows that Zantac was the one and only Glaxo product within its therapeutic area (anti-ulcerant, metabolic and gastro-intestinal) until the merger with SmithKlineBeecham in 2000.

Zantac's exceptional sales contrasts with its relatively ordinary medical performance. Zantac was a me-too copy of Smith Kline's pioneering anti-ulcerant, Tagamet. Zantac sold at a 15–20 per cent premium and offered twice-a-day dosing over Tagamet's

schedule of four to five times a day (Wright 1996: 25). But Zantac was virtually identical to Tagamet in terms of molecular structure, and trials showed few significant medicinal advantages (Lynn 1991: 203). This anecdotal evidence is further supported by Wright's well-documented study of Zantac, which argues that the difference was marketing, playing off the insecurities of doctors and patients. According to Wright (1996: 26, 28, 29), Glaxo's emphasis on 'educating' primary physicians as well as 'educating' patients suffering from heart-burn managed to generate an estimated extra 500,000 visits to the doctor and a boom in mail-order purchases. Lynn (1991: 203–4) argues that Glaxo's marketing of Zantac was managed cleverly:

Questioning Tagamet's safety was a neat line of attack. It could not be proved that Zantac was better: it had not been used widely enough yet for its side-effect profile to emerge. But by the same logic it could not be disproved. This is the kind of information which, in the hands of skilled marketing professionals, can be twisted into a decisive advantage [because] . . . Doctors are generally cautious people, particularly in the United States where the threat of being sued for negligence makes them fearful.

As a Glaxo marketing employee observed, 'the best way of making more money at Glaxo was to spend more money on Zantac' (Lynn 1991: 206). The industry had always spent on marketing drugs but, according to Lynn (1991: 206), the marketing techniques applied to Zantac established a new marketing model within the industry, whereby considerable amounts were spent on promoting the drug over its whole lifespan rather than to just in its first few years on the market. The aim was also to build a global company rather than license production to competitors. In the late 1970s Glaxo was effectively UK-based: the purchase of Meyer Laboratories Inc. in 1978 only gave the company a US R&D base (GSK 2004a), and in the first half of the 1980s, more than two-thirds of Glaxo's sales revenues were from Europe, Africa and the Middle East (see appendix, Table C1.3, p. 212). To get Zantac into the huge and lucrative US market, Glaxo mounted a textbook two-stage operation. In the first phase between 1983 and 1989, Glaxo forged a co-promotion strategy with French pharma firm Hoffman La Roche who had an under-utilized US sales force (Wright 1996: 25). In the second phase from 1990 to 1994, Glaxo rapidly consolidated the success of Zantac by building its own marketing workforce in the USA to sell what was by then an established product.

The aggressive application of marketing to a single me-too drug gave Glaxo enviable financial results as it moved along a brilliant trajectory of growth. Between 1988 and 1994, Glaxo had a very healthy (pre-tax) return on sales of 30–40 per cent and an outstanding pre-tax ROCE generally exceeded 25 per cent, as Exhibit C1.13 shows (see also appendix, Table C1.11, p. 220), with a balance sheet where less than 10 per cent of the long-term capital was provided from debt (appendix, Table C1.6). These favourable ratios were achievable because Glaxo's business was based entirely on ethical drugs. In operating terms, Glaxo also enjoyed favourable ratios: external purchases accounted for less than 40 per cent of sales revenue and the labour share of internal cost was well under



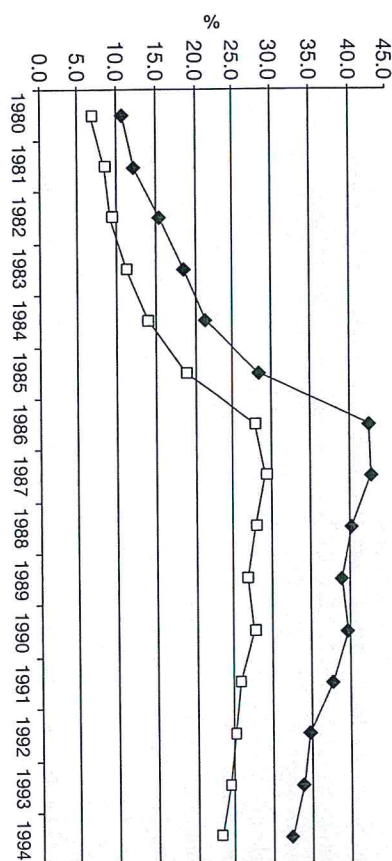


Exhibit C1.13 Glaxo rates of return, 1980-94

Source: Company Annual Report and Accounts, various years

40 per cent, resulting in cash generation of more than 30 pence per pound of sales revenues, roughly twice as much as SmithKlineBeecham or Zeneca, which combined ethicalas with other activities (see appendix, Table C1.12, p. 221).

Glaxo offered the stock market a combination of high rates of return and spectacular growth (with none of the usual disadvantages of cyclical or risky exposure to fast moving technology) and the market found that quite irresistible. The predictable result of the high rates of return and low gearing was a massive growth in market capitalization for Glaxo from £379 million in 1980 to £16.6 billion in 1994, or in real terms (using 2003 prices) a twentyfold increase from just over £1 billion in 1980 to £20.8 billion by 1994, largely due to a rise in year-end share price from £2.24 in 1980 to a peak of £16.60 in 1987 as investors chased this growth stock (see appendix, Table C1.10, p. 219).

As a globalizing pharma company, Glaxo's record on employment creation sets it apart from other UK organic growth success stories such as the retailer, Tesco, where sales growth directly feeds an expanding domestic employment base. In the first phase of US marketing using Hoffman La Roche employees, total employment in Glaxo actually fell between 1980 and 1986, from 29,187 to 24,728. After 1987, company employment begins to increase, but as Table C1.8 in the appendix (p. 217) shows, most of the growth in employment up to the mid-1990s (after which the relevant data is no longer disclosed) is outside the UK because marketing employment is usually close to the customer. Marketing employment was always dominant in the Glaxo workforce: as a result, in 1991 there were 2.5 marketing employees for every person engaged in R&D, and by 1994 this ratio had risen to 2.9 (Exhibit C1.14). The internal workforce did benefit from a relaxed approach to pay rises and wage levels as real annual labour costs per employee rose from £13,964 in 1980 to £34,624 (in 2003 real prices) by 1994 (Table C1.9, 2003

prices, see p. 218), but with no overall increase in labour's share of internal costs (see Table C1.12, appendix, p. 221).

If we turn to look at distributions to shareholders, they were rather differently treated because they did claim an increasing share of the growing cake. As Exhibit C1.15 shows, the amount Glaxo distributed to shareholders as dividends grew over the period of

Exhibit C1.14 Glaxo: breakdown of employment by geographic region and activity, 1990-4

|      | Total number employed | % share by region |          | % share by function |     |                     |
|------|-----------------------|-------------------|----------|---------------------|-----|---------------------|
|      |                       | UK                | Overseas | Manufacturing       | R&D | Sales and marketing |
| 1990 | 31,327                | 39                | 61       | 37                  | 18  | 45                  |
| 1991 | 35,640                | 35                | 65       | 35                  | 18  | 47                  |
| 1992 | 37,083                | 32                | 68       | 35                  | 18  | 47                  |
| 1993 | 40,024                | 30                | 70       | 34                  | 18  | 48                  |
| 1994 | 47,189                | 25                | 75       | 37                  | 16  | 47                  |

Source: Company Annual Report and Accounts, various years

Note: Employment by geographical area is unavailable after 1996 and employment by activity is unavailable before 1991. See also appendix, Table C1.8 for full series

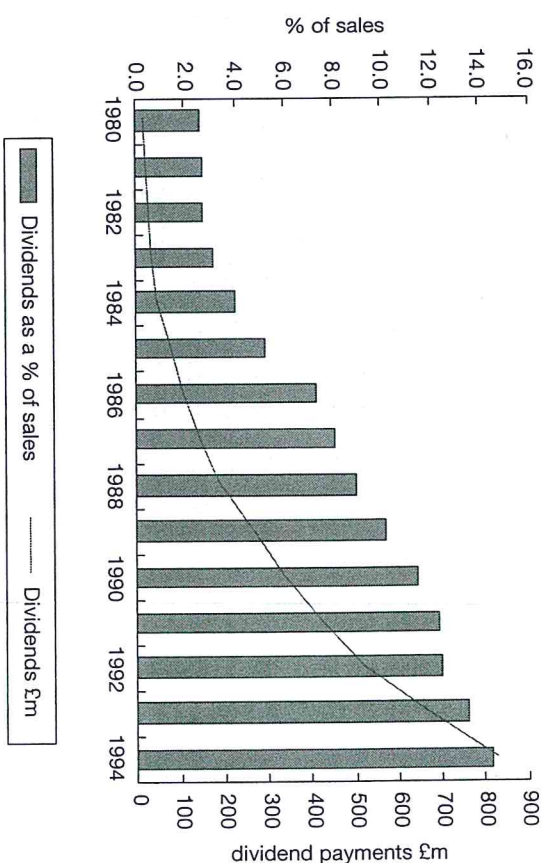


Exhibit C1.15 Glaxo: dividend payouts, 1980-94

Source: Company Annual Report and Accounts, various years

Note: See Table C1.5 in the appendix for full data



organic growth. Glaxo's dividend payments, which were equivalent to less than 10 per cent of sales revenues in the 1980s, grew to reach 15 per cent by 1994. By pharma standards, this was certainly a high level of distribution because the comparable rates for SKB and Zeneca were around 6 per cent in 1994. Although total dividends rose fairly smoothly, as Exhibit C1.15 shows, as a percentage of net (i.e. post-tax) profit, there was a marked step up from a range of around 26–40 per cent in the 1980s to a level of at least 60 per cent after 1994. With generous distributions to shareholders, however, Glaxo made a rod for its own back because it created expectations of dividends, especially as distribution rates were raised in the 1989–94 period with patent expiry on Zantac due in 1997 and effective competition beginning in 1990 with the launch of Astra's Losec, which rapidly began to eat into Zantac's therapeutic market share.

The overwhelming question by the early 1990s was: how would Glaxo keep things going after Zantac? That question was more urgent because Glaxo's best-selling anti-asthma drugs Becotide and Ventolin were also close to expiry and possible replacements – such as Zofran, Immigran and Scorevent – seemed incapable of filling the sales gap (*Financial Times*, 9 September 1994). By the early 1990s, it was already fairly clear that the answer to that question would not be supplied by the efforts of internal R&D. Glaxo's R&D expenditure as a percentage of sales revenue was just 6.1 per cent in 1982 when Zantac was launched, and it was the success of this 'me-too' drug that enabled Glaxo to invest a greater proportion of its sales revenues in R&D while also delivering higher profits and dividends: by 1994, the R&D spend had increased tenfold in real terms and the R&D spend reached 15.2 per cent of sales revenues (Exhibit C1.16).

Yet despite this increase in R&D expenditure, no new blockbuster drug emerged that could feasibly replace the losses that would accrue after Zantac's patent expired. Moreover, while the growth of Glaxo's R&D spend was impressive, throughout most of the 1980s Glaxo's R&D expenditure was well behind the industry norm of 13.5 per cent of sales (Taggart 1993: 260). Although Glaxo significantly increased its expenditure on R&D as the company expanded, reaching levels of 14 per cent of sales revenues in the early 1990s, by the early 2000s it was again falling behind others in the industry. In 2003, GSK's R&D as a percentage of sales was 12.9 per cent, compared with 17.2 per cent for Astra Zeneca, 17.9 per cent for Aventis, 16.7 per cent for Pfizer and 15.6 per cent for Roche (*Wall Street Journal*, 24 March 2003). Lehman Brothers also estimated in 2003 that the current value of GSK's expected R&D investment over the following twenty-five years was equivalent to 39 per cent of its current sales compared with 67 per cent for the average European pharma company and 100 per cent for the average US company (*Wall Street Journal*, 24 March 2003).

Did the preference for distribution compromise the capacity for productive innovation? In many ways, it could be argued that Glaxo's more limited spend on R&D was an intelligent response to the realization that its own competences were based on marketing and that the generic business model did not offer clear productivity gains from growing R&D any faster than the business as a whole. However, it did suggest that growth would have to be sustained through some means other than simply new drug development.

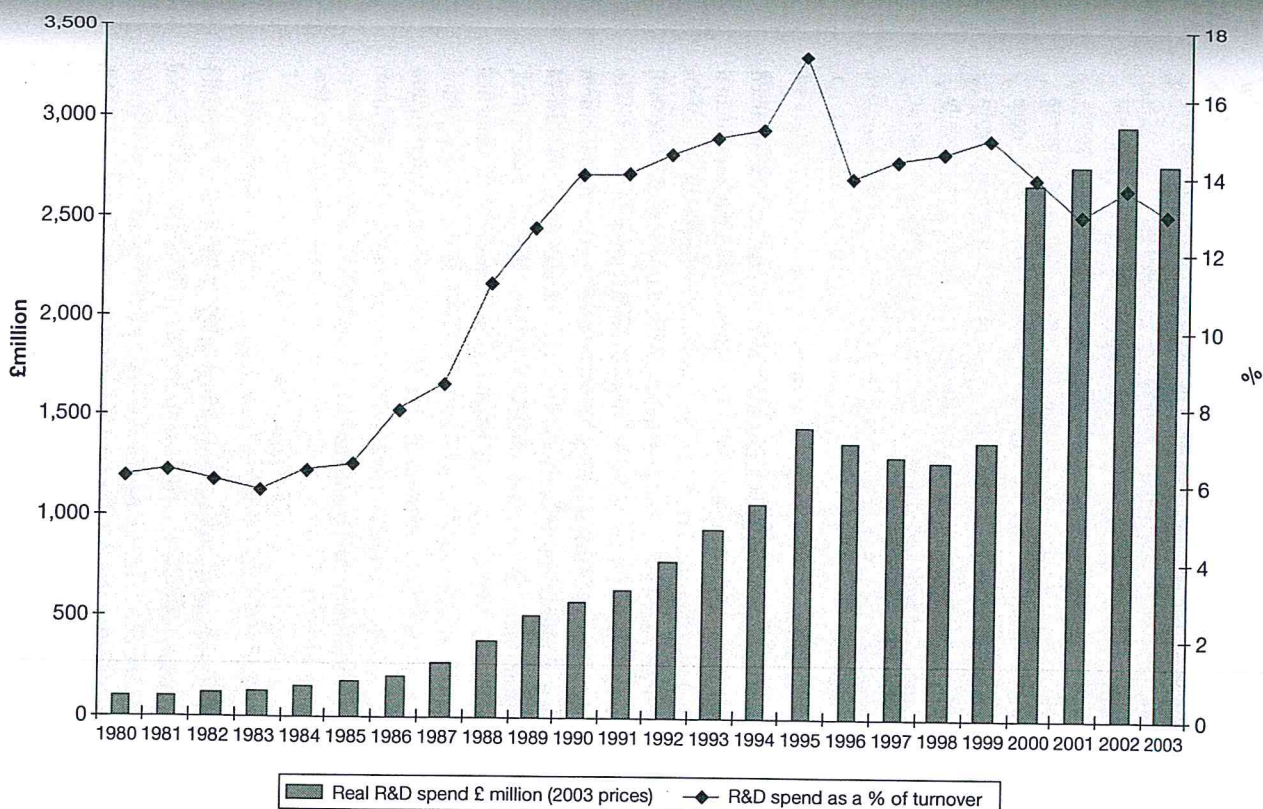


Exhibit C1.16 Glaxo, Glaxo Wellcome, GlaxoSmithKline: the scale and significance of R&D expenditure, 1980–2003 (in real 2003 prices)

Source: Company Annual Report and Accounts, various years

Note: R&D expenditure includes capital expenditure and labour costs



## M&A to keep the numbers going (1995–2002)

One of the few general laws (or behavioural regularities) of corporate capitalism is that, when cost recovery falters, firms turn to defensive horizontal merger which offers cost reduction and improved positioning. The point will be most familiar to older British readers who remember 1960s amalgamations such as British GEC or British Leyland Motor Corporation/British Leyland (BLMC/BL) in faltering industries of electrical engineering or autos. If the quasi-corporate framework around British business has since been dismantled, the recent history of pharma shows that the defensive response remains important, or has become even more so, because after financialization the desideratum is not profit but enough profit and growth to keep the share price going. And, in Glaxo's case, M&A was logically inevitable because organic growth would never keep things going when the Zantac patent expired.

The results of defensive merger are very variable. Such acquisitions can produce sustained advantage, as they did in integrated oil for BP where Lord Browne had the fundamental good sense to buy other oil companies and their reserves in the decade of the 1990s when oil (and oil companies) were cheap and product-market competitors such as Shell were too slow to see the necessity for acquisitions. And, from this point of view, Glaxo deserves some credit as a first mover that was prepared to do mergers that establishment pharma companies such as Merck and Pfizer would not consider at all (in the case of Merck) or only much later (in the case of Pfizer). Glaxo's problem was that its first deal, the acquisition of Wellcome in 1995, bought time but did not solve any of its fundamental problems about a business model that required more new product than the pipeline could generate. This left Glaxo almost immediately searching for a second, bigger deal and SKB has been publicly targeted by 1998. But this turned out to be much more problematic, both before and after the second deal was completed in 2000.

### Glaxo Wellcome: the unsolved problem

The 1995 purchase of Wellcome was a well-executed bolt-on acquisition of a smaller firm. The purchase was straightforward and the financial consequences in terms of capital structure and balance sheet were entirely manageable in such a cash-generative business. The £9.3 billion purchase of Wellcome was made with £6.3 billion of cash (of which around 20 per cent was funded by debt) and the rest paid in shares. This deal was attractive to the Wellcome Trust, which owned 40 per cent of Wellcome, because this not only provided the funds to allow it to become the largest endowed medical charity in the world, but also gave it a stake in the new company of somewhere between 4 and 5 per cent (Ogilvie 1998: 634). For Glaxo, the increase in debt to help finance the deal

was not a major issue. Prior to the acquisition, Glaxo had a remarkably strong balance sheet, characteristic of a highly cash generative company whose growth to date had been financed from internal sources: in 1994 the long-term debt to shareholder equity ratio was 1:17 (appendix, Table C1.6, p. 215), so that the addition of around £1.2 billion of debt introduced a net interest payment equivalent to around 2 per cent of sales (or 10 per cent of operating profit) that could quite easily be met in a high-margin business (appendix, Table C1.5, p. 214).

In operating terms, the acquisition of Wellcome allowed growth to be maintained or, more exactly, prevented a collapse of sales revenue because Glaxo was able to consolidate revenue from the two companies and gained opportunities to rationalize operations and to cut costs, allowing margins to be maintained or even improved. In terms of sales growth, the acquisition of Wellcome was well timed in preventing a collapse in sales. Wellcome's sales of £2.3 billion in 1994 were an attractive bolt-on to Glaxo's £5.7 billion, so that by 1996, the new company had £8.3 billion of sales. Given that Zantac's sales revenue fell from £2.44 billion at the peak in 1994 to £1.93 billion by 1996, as Exhibit C1.12 shows (with Zantac eventually losing 84 per cent of its 1994 total peak sales value by 2003, by which time it was making only a modest contribution to the company of £328 million) the stabilization of Glaxo's nominal sales growth is perhaps an achievement.

However, in real terms, there was no growth after 1996, and it is interesting to observe that a real 20 per cent increase in sales in 1995, following the acquisition of Wellcome was not much more than the organic growth achieved at the peak in 1992 (16 per cent) or 1993 (18 per cent) (see appendix, Table C1.2, p. 211). Wellcome was not large or dynamic enough in terms of product to cover the loss of Zantac sales when the patent finally expired in 1997. Thus, in 1996, one year after the merger and before patent expiry, Zantac still provided around 50 per cent of Glaxo Wellcome's profits (*The Economist*, 26 April 1997). After patent expiry in July 1997, the Glaxo Wellcome results for 1997 showed the first drop in nominal sales in over seventeen years and the combined companies' share of the pharma market fell from 6.2 per cent in 1995 to 5.2 per cent in 1997 (*The Economist*, 22 January 2000). But the bolting-on of Wellcome created opportunities for cost-cutting that cushioned the jolting shock to profit ratios and allowed the pre-tax return on sales (pre-tax profit margin) to be held at around 33 per cent (23 per cent post-tax), which was as good as the immediate period before Wellcome's acquisition, though weaker than in the late 1980s when a pre-tax return on sales of more than 40 per cent was achieved (see appendix, Table C1.11, p. 220). The cost-cutting was achieved through more or less immediate redundancy: 7,105 jobs were cut between the acquisition and the accounting year end in 1995 as 11.6 per cent of the combined Glaxo Wellcome workforce were selected out. Just under 50 per cent of this job rationalization were in marketing and administration, because one sales force could handle the two ranges of drugs, but there were also significant cut-backs in R&D (1,953 jobs) and in manufacturing (1,683 jobs). As well as headcount reductions, Glaxo managed to contain the overall salary bill with real labour costs per employee falling from £41,164 in 1996 to £36,202 by 1999 (in 2003 prices).

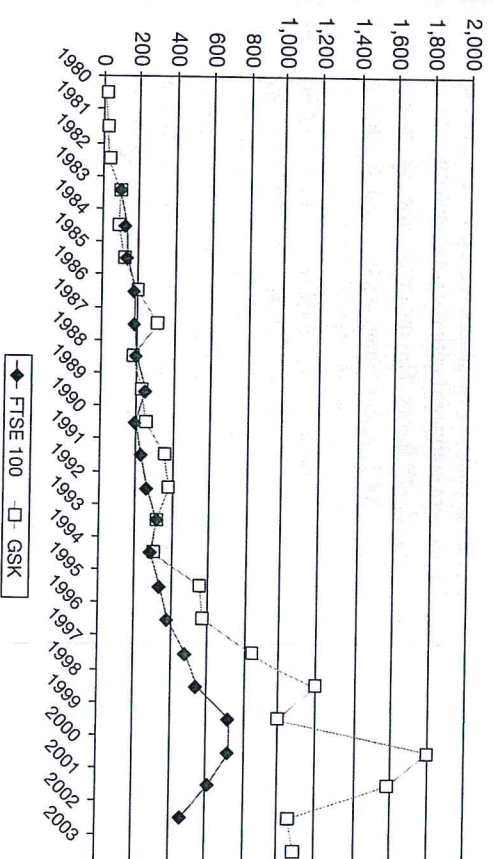


From Glaxo's perspective, the acquisition was a success because adding Wellcome's sales helped avoid the revenue and profit collapse that would have accompanied Zantac's expiry. However, it was clear that buying Wellcome was an interim solution with only short-term savings and, according to *The Economist* (22 January 2000), no long-term growth. It was unlikely that bolt-on acquisition and defensive restructuring would keep the stock market happy for long because they did not resolve the fundamental problem about the pipeline and, after 1997, Glaxo Wellcome had no more internal levers to pull that could improve operating ratios. Between 1995 and 1999, Glaxo Wellcome launched just two new blockbuster (Heracleous and Murray 2001: 436) and suffered notable setbacks with the withdrawal of Lotronex, Raxar and Romozin (Bosanquet and Atun 2001: 74). Despite the failure to solve Glaxo's problem of a weak pipeline, there was no overall boost to R&D effort. After the acquisition of Wellcome, R&D investment was cut as both a percentage of sales revenue and in real terms, signalling that research was not to be at the centre of the new company. As Exhibit C1.16 shows, in 1995 Glaxo Wellcome committed £1,456 million to R&D (2003 prices), which represented 17.1 per cent of total sales revenue. The R&D budget, in real terms, was then cut successively in 1996, 1997 and 1998, only to grow slightly in 1999 as the top line improved. Despite this minor improvement, by 1999 the £1,391 million spent on R&D was still lower in real terms than the peak in 1995, and R&D as a percentage of sales was also lower at 14.9 per cent.

Despite these signs of strain and the near certainty of future under-performance, shares in the new Glaxo Wellcome company rose sharply from 1995 to 1999 so that market value grew from £21 billion in 1995 to just under £77 billion in 1999. This was, of course, in the middle of the bull market but, as Exhibit C1.17 shows, between 1995 and 1998 the Glaxo Wellcome share price (corrected for stock splits) significantly outperformed the FTSE 100 index. This substantial rise in share price is only intelligible on the assumption that the market believed that the Wellcome acquisition represented not so much an event as a formula that Glaxo management could subsequently repeat. This point was proved in 1998 when a second merger with SKB was mooted. This merger then fell through due to boardroom disagreements about how top jobs would be shared between Glaxo Wellcome and SKB senior management (*The Economist*, 28 February 1998) and the share prices of both companies then dropped sharply with Glaxo Wellcome shares falling by £2.47 to £16.57 and SKB shares dropping 83p to £7.24, so that collectively the two companies wiped out 60 points from the FTSE 100 index (*Financial Times*, 25 February 1998).

### GlaxoSmithKline: more of the same?

The aggravation over whether Jan Leschly of SKB or Richard Sykes of Glaxo Wellcome was to become CEO in 1998 should have given everybody pause for thought. So too should the merger mania of the pharma business by late 2000 when Glaxo Wellcome manoeuvred to prevent the merger of SKB with American Home Products (AHP), who



**Exhibit C1.17** Index of GlaxoSmithKline share price against the index of FTSE 100 market value (1983 = 100)

Source: Datastream and GSK report and accounts

Note: GSK share price is corrected for stock splits so that the graph shows the value of one share in Glaxo bought in 1980 and held throughout the period

had previously been in merger talks with Warner Lambert (WL) before WL eventually decided it preferred to hook up with Pfizer (*Financial Times*, 8 February 2000). In 1995, Glaxo had been ahead of the game when it picked up Wellcome; by 2000 Glaxo was just another pressured player in a major round of industry consolidation. The Glaxo Wellcome/SKB merger had been subject to two further embarrassing postponements in August and September of 2000 (*Financial Times*, 13 December 2000) before it was finally completed in December 2000. The merger made GSK the largest pharmaceutical company in the world at that time, with a market value exceeding £110 billion, as well as the second largest firm on the UK stock market behind Vodafone and on par with BP. The dispute about who was to become CEO was solved by recruiting Leschly's deputy, Jean-Pierre Garnier, but a range of other problems were quite unresolved: as the purchase consideration was less favourable to Glaxo, the scope for immediate labour cost-cutting was more limited and the pipeline remained inadequate.

The purchase consideration was notably less favourable because the deal with SKB was not a take-over but a merger achieved through a £115 billion all-share deal that more than doubled the amount of capital in the business from £4.9 billion in 1999 to £11.6 billion in 2000 (Table C1.7, appendix, p. 216). In return, Glaxo got a bolt-on that more or less doubled its size. In 2000, the first full year of the new company, GSK's sales were £18.1 billion, an increase of 113 per cent over Glaxo Wellcome's £8.5 billion in 1999, the year before the merger, and comparing favourably with the £16.9 billion 1999 combined sales of GW and SKB (see Table C1.1, appendix, p. 210). The impact on operating profit



was, however, rather less encouraging with an increase of 79 per cent from 1999 to 2001 and a rise of rather less than 10 per cent compared with the combined operating profits of GW and SKB in 1999, as Exhibit C1.18 shows. This meant that the operating margin (return on sales) fell significantly to 2001, before rising in 2003 back to the level that Glaxo Wellcome enjoyed in 1999.

The immediate impact on profit was limited because there was much less scope for redundancy at the point of merger so that labour-cost reduction in GSK has been a more gradual process than that following the acquisition of Wellcome. This was partly because the SKB workforce had been pruned pre-merger: in 1998–9 SKB sacked 12,300 workers from their total workforce of 59,500 (SKB Company accounts 1999), leaving much less scope for rationalization after the merger (see also *Financial Times*, 22 January 2001). As Exhibit C1.19 shows, between 2000 and 2002 GSK reduced headcount by just 3,702, representing around 3.5 per cent of the 108,201 workforce at the point of merger (see also appendix, Table C1.8, p. 217). A more aggressive cost-cutting strategy was adopted in 2002–3 as GSK reduced its closed manufacturing plants from 102 to seventy-two, reducing the manufacturing workforce by 7.7 per cent between 2001 and 2003, as well as rationalizing its use of advertising agencies (from 100 to just two), which cut \$3 billion out of operating expenses and boosted GSK's margins (*Forbes*, 8 November 2003).

The merger allowed GSK to take advantage of its size in two ways that were helpful in business-model terms: first, the merger allowed a more focused deployment of the sales force, especially in the USA; and second, it helped cover risk by broadening the firm's range of products and therapeutic areas. After the merger, GSK had a total of 43,000 sales representatives, including 8,000 in the USA, which gave it the largest US sales force in the industry, as Exhibit C1.20 shows. The addition of the SKB sales force allowed more effective targeting of the relatively small number of high prescribing physicians in the USA who write most of the prescriptions that generate high margins in a world where governments in Europe and Japan have sought to contain their drug budgets. The merger immediately brought an increase in sales of 114 per cent in the large and lucrative US market, compared with 52 per cent in Europe and the Middle East and 61 per cent in Asia Pacific.

The merger also allowed Glaxo to extend its portfolio of blockbuster products and spread the risk from generic challenges, product withdrawals and other setbacks. By 2003, GSK had eight blockbusters in a variety of segments, including one in the lucrative CNS segment, and two drugs with at least a 15 per cent segment share (Deutsche Bank 2003b: 23). But adding SKB did not improve a relatively weak pipeline because SKB was just another unproductive drug company that had created just one blockbuster drug since 1995 (Heracleous and Murray 2001: 436). Maybe Glaxo needed that broader portfolio because GSK also experienced increased problems about the limits on patent protection. By 2001, 22 per cent of GSK's sales were exposed to generic competition including their then best-selling drug, Augmentin (*Forbes*, 11 August 2003) and, significantly, there have been a series of high-profile patent challenges to Paxil and Wellbutrin, which in 2003 accounted for 15 per cent of sales (CIBC 2003: 2).

**Exhibit C1.18** Glaxo Wellcome/GSK sales and profitability, 1999–2003

|                                                | Sales<br>£m | Operating<br>profit<br>£m | Operating<br>profit margin<br>% |
|------------------------------------------------|-------------|---------------------------|---------------------------------|
| Glaxo Wellcome 1999                            | 8,490       | 2,625                     | 30.9                            |
| Glaxo Wellcome plus SmithKline<br>Beecham 1999 | 16,871      | 4,338                     | 25.7                            |
| GSK 2000                                       | 18,079      | 4,455                     | 24.6                            |
| GSK 2001                                       | 20,489      | 4,697                     | 22.9                            |
| GSK 2002                                       | 21,212      | 5,662                     | 26.7                            |
| GSK 2003                                       | 21,441      | 6,525                     | 30.4                            |

Source: Company Annual Report and Accounts, various years

**Exhibit C1.19** Glaxo Wellcome and GSK employment and split by activity, 1999–2003

|      | Share of employment by function % |               |      |                               |
|------|-----------------------------------|---------------|------|-------------------------------|
|      | Total<br>employment               | Manufacturing | R&D  | Selling, general<br>and admin |
| 1999 | 60,726                            | 35.6          | 16.2 | 48.2                          |
| 2000 | 108,201                           | 33.4          | 15.4 | 51.2                          |
| 2001 | 107,899                           | 34.4          | 14.0 | 51.6                          |
| 2002 | 104,499                           | 34.0          | 14.0 | 52.0                          |
| 2003 | 103,166                           | 33.2          | 14.3 | 52.5                          |

Source: Company Annual Report and Accounts, various years

Note: See Table C1.8 in the appendix for full series

**Exhibit C1.20** The US sales force of leading pharma companies, 2000

| Company              | US sales force |
|----------------------|----------------|
| GSK                  | 8,000          |
| Pfizer               | 7,500          |
| Pharmacia            | 7,000          |
| Johnson & Johnson    | 5,000          |
| Merck & Co           | 5,000          |
| Astrazeneca          | 4,800          |
| Schering-Plough      | 4,500          |
| Aventis              | 4,200          |
| Bristol Myers Squibb | 4,000          |

Source: Company Annual Report and Accounts, various years



This second merger with SKB had been greeted with initial cynicism in the business press, where some anticipated difficulties in merging two such large corporations (*The Economist*, 25 November 2000) and others could not see how the merger could immediately alter the numbers due to the long development cycles required to get a drug to market and the limited research projects they each had underway (Ansell 2000). And, after the event, the inherent transparency of the activity meant that it was difficult for GSK to present the merger as a solution to its pipeline problems. In financial terms, the results were at best mixed: the combination of the increasing capital in the business, which was partly the consequence of SKB having £1.2 billion worth of minority interest on its balance sheet pre-merger and the only modest increases in profit meant that the ROCE has failed to recover the level that Glaxo Wellcome delivered in the 1996–9 period. As Exhibit C1.21 shows, GSK's performance is very far from being spoilt, but the pre-tax ROCE of 43 per cent to 53 per cent is much lower than the 58–100 per cent range produced in 1995–9 shown in Exhibit C1.13 (see also Table C1.11, appendix, p. 220).

Certainly, the fall in share price from £18.63 at the end of 2000 to £12.80 at the end of 2002 (see appendix, Table C1.10, p. 219), (even allowing for the effects of the tech stock crash in 2001 and its repercussions), suggests that investors were not convinced that adding SKB resolved the product-market problems. Moreover, Exhibit C1.17 shows that, after 2000, the GSK share price falls much faster than the FTSE 100 index as a whole. Although there was no collapse in operating performance after the SKB merger, and ROS and ROCE were still at high levels, investors appear to have formed a much

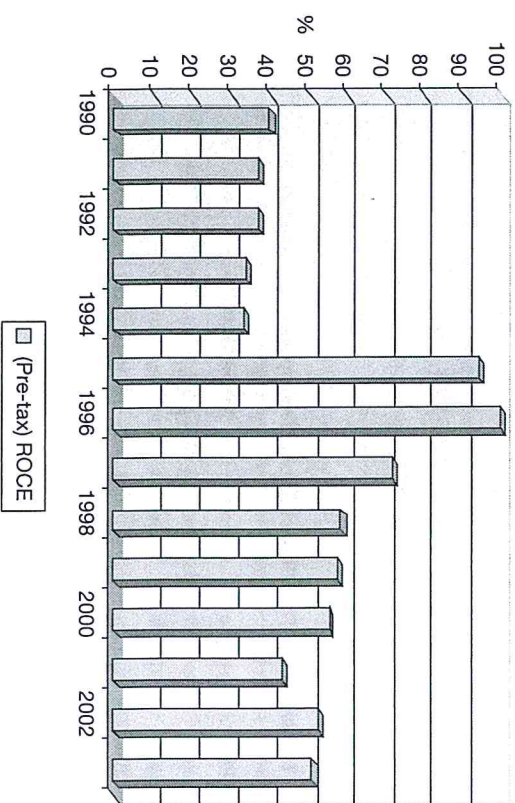


Exhibit C1.21 Glaxo and Glaxo Wellcome ROCE

Source: Company Annual Report and Accounts, various years

more negative view of the company's prospects so that the P/E ratio had fallen from a peak of 40 in 1998, to 17 in 2003 (appendix, Table C1.10, p. 219). GSK has meanwhile continued to increase its dividend payouts so that, with the falling share price, GSK increasingly looks like an income, not a growth stock. Exhibit C1.22 presents the P/E ratio and the dividend yield of GSK over the period since 1980. This historical perspective shows that, after the peak at the end of the 1990s, the P/E ratio had returned to the more typical (though still respectable) range of 12 to 20 times, with the dividend yield returned to the pre-Wellcome level. However, according to Morgan Stanley, the high dividend yield of around 3.5 per cent in 2003 kept stock prices buoyant and allayed investor fears during late 2002 (Morgan Stanley 2003: 3), though this implies it is the handsome payouts rather than the underlying strength of the pipeline that has been securing investor support.

## COMPANY NARRATIVE: MAKING PROMISES

Through the sale and purchase of pharma shares, the stock market is reclassifying the pharma companies in front of our eyes. As organic growth is unsustainable from the internal pipeline and the market is cautious about endorsing more defensive mergers, the pharma company becomes an income not a growth stock: after the recent falls in share price, in early February 2005, Merck and AstraZeneca's shares are valued at \$28.46 and \$39.21 respectively, compared with closing prices of \$48.07 and \$49 on the same day one year earlier (2 February 2004). And in the stock market's broader scheme of things, pharma companies could be filed under mature industries next to utilities, which offer much the same combination of limited organic growth and good earnings subject to uncertainty about future regulatory regimes.

The pharma companies and their analysts are not, however, quite ready to embrace that identification through a discourse of maturity even if the industry's previous success creates expectations that can become a burden and should be revised downwards. The current paradox is that the difficulty of keeping the numbers going at GSK has made the company narrative and promises about the future even more important, because these promises become the main support for the idea that management is in control and the company is moving forward on a trajectory of purpose and achievement. And, of course, the promises have to be made within the orthodox framework about patent expiry and the pipeline, which may not make the future predictable but certainly do make GSK's promises open to scrutiny and challenge by analysts and business-press specialists.

At this point, we move from paradox to irony. As we have argued, Glaxo has historically been a marketing-led company. But all its forward-looking promises are



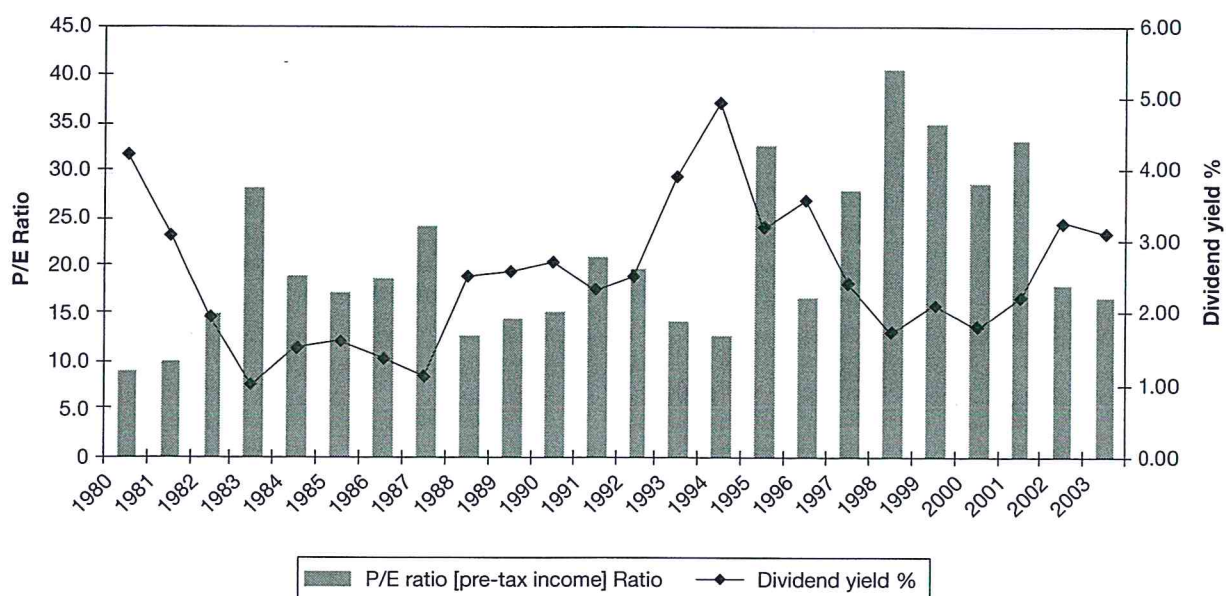


Exhibit C1.22 Glaxo, Glaxo Wellcome and GSK P/E ratio and dividend yield, 1980–2003

Source: Company Annual Report and Accounts, various years

now about what research can deliver. This section analyses the current GSK narrative in two parts: first, it considers GSK's repeated promises about how the reorganization of research can improve research productivity and cost effectiveness and secure revenue streams in the long term; second, it analyses GSK's claims about products emerging from the pipeline that will cover patent expiry in the medium term. The analysis of pipeline claims usefully allows us to consider issues about the reception of the narrative and the extent of scepticism by analysts and the business press.

## The (re)organization of drug development

If the industry's problem is the low productivity and high cost of R&D, Glaxo's narrative response has been to make a series of claims about how it is reorganizing the early stages of drug research in ways that will deliver more new products at lower cost. On the long view, these claims all appear to be rather flimsy because each new and revolutionary approach to R&D is pushed for a short period of time before being dropped from the company's public discourse. The inconsistency of successive large claims does the management no favours.

For example, towards the end of the 1990s, GSK was talking up the possibilities of combinatorial chemistry. According to the then CEO, this introduced a mixture of computer software, chemistry, molecular biology and automated technology to overcome the lottery of new drug discovery (Ingram 1999: 217). It was designed specifically to reduce the number of failed projects and to select scientifically the potentially lucrative new compounds. However, discussion of combinatorial chemistry was dropped immediately before and during the merger with SKB when genomics 2000 became the new *elixir vitae*. This was seen again as a move away from 'blue skies research and towards a more "rational drug design" (J.-P. Garnier quoted in Heracleous and Murray 2001: 431), which would build 'a platform for finding new targets based upon a fundamental understanding of disease mechanisms and for generating a new class of medicines' (Milmo 2000).

Immediately after the merger with SKB, GSK reorganized its R&D departments to emulate small bio-technology firms by creating seven Centres for Excellence in Drug Discovery (CEDDs), each focusing on a separate therapeutic area (*Forbes*, 11 August 2003). CEO Garnier proclaimed that this reorganization would make them 'kings of science' (cited in *Business Week*, 30 July 2001) while also allowing GSK to externalize more of the R&D function. More significantly, Garnier also instructed Yamada, GSK's head of R&D, to fold the licensing division into R&D, so that in-licensing deals could be struck with bio-techs, universities and other pharma companies (*Forbes*, 11 August 2003).



The irony of this reorganization was not lost on the more astute financial commentators: 'no sooner had GSK completed its gargantuan merger than it started breaking itself up into little pieces. It seemed odd that, after arguing vehemently for consolidation, its management should be hell bent on keeping things small' (*Financial Times*, 3 April 2001).

### The pipeline, R&D days and their reception

Most of Glaxo's narrative is not about the reorganization of drug research but about products in the development pipeline that will cover any short- and medium-term problem about patent expiry. On the pipeline issue, Glaxo's corporate public relations, in documents such as the annual report, offers an upbeat overview, though analysis shows that there is a fairly obvious bias towards optimism. Analysts and business journalists are more closely concerned with exactly what's in the pipeline, and the response to Glaxo's R&D day in December 2003 illustrates the range of responses and shows how the usually kindly analysts are increasingly sceptical about GSK's prospects.

The annual reports of Glaxo Wellcome and GSK are, of course, upbeat about what is in the pipeline, though closer analysis suggests that this impression is sustained by emphasizing the scale of expenditure and the number of drugs in early stage development without admitting there is relatively little in Phase III. For example, in Glaxo Wellcome's 1999 annual report, the joint statement by the Chairman and CEO claimed that 'a deliberate decision (was made) to increase our sales and marketing expenditure in the US and Europe to prepare for the excellent range of new medicines in our pipeline' (1999: 3), implying that new products were close. By 2000 it turned out these new medicines were in fact at a fairly early stage: 'in 2000 we invested £2.5bn in R&D. That, and our previous investment in key technologies . . . have yielded a formidable early stage pipeline of promising compounds' (GSK Annual Report and Accounts 2000: 3). By 2001, little had changed: 'we currently have one of the strongest early-stage pipelines in the industry with 118 projects in clinical development, including 56 new chemical entities, 21 new vaccines and 41 line extensions' (GSK Annual Report and Accounts 2001: 3). The 2002 accounts also emphasized the 'promising early stage pipeline' (GSK Annual Report and Accounts 2002: 3), while the 2003 R&D day for investors talked up the number of what it interestingly classed as Phase II/III drugs (GSK 2003). In reality, most of the Phase II/III drugs were in fact in Phase II: out of the eighty-two NCEs in development, roughly 90 per cent were in Phase I or Phase II, leaving Garnier's promises of being the fastest growing pharma company between 2006 and 2008 highly doubtful (Deutsche Bank 2004: 13).

The Deutsche Bank response shows how expert observers such as analysts are not easily deceived by generalized claims in pharma, because they have the expertise and

knowledge to deconstruct them by cross-reference to previous company accounts of the pipeline. Nevertheless, analysts in pharma and other sectors are generally kind to the companies they cover. For example, within a month of the SKB merger, Goldman Sachs raised GSK to a *market outperform* recommendation, arguing that GSK's mid-stage pipeline had been underestimated and that recently launched products would generate significant earnings growth in the first three years of merger (*Financial Times*, 22 January 2001). Interestingly, the independent business press, such as the *Financial Times* and *The Economist*, has a much more distant relation to the companies and is consistently more sceptical about Glaxo's pipeline promises.

The range of analyst and media responses can be illustrated by considering reports of GSK's R&D day on 3 December 2003. This was an important occasion because it was the first for Glaxo since 2000 in an industry where R&D days for analysts and journalists are normally an annual event. Clearly, GSK had problems because analyst opinion split three ways between the reassured, the indifferent and the disappointed.

Some analysts, were reassured by the company's presentation: 'we are upgrading shares of GSK to sector performer from sector underperformer. This is based on improved pipeline visibility and low earnings expectations' (CIBC 2004: 1); and 'GSK's R&D day was significantly better than we had feared. The company unveiled a well stocked mid-term pipeline' (Bear Stearns 2003b: 1). Others were indifferent: '[The R&D day] . . . turned out to be a somewhat mixed affair, with news of a further sizeable uplift in the number of pipeline candidates more than counter-balanced by delays for certain projects and generally distant submission timelines for the majority of compounds' (Deutsche Bank 2004: 3); and Garnier and Yamada are 'doing and saying the right things in terms of running the business . . . but in R&D there is an element of both brains and luck and at this early stage it is difficult to ascertain which of the more interesting Phase II drugs will make it to market and, equally important, when' (Prudential Equity 2003: 2).

Others were disappointed: 'all in all, a fairly disappointing day . . . Whilst our expectations were not very high, we were expecting some details on the pipeline . . . [in particular] progress of some of the phase II pipeline into phase III' (UBS 2003: 2); and 'The company's presentation did not leave us with any positive impression that GSK will be able to manage the decline of Paxil and Wellbutrin sales in the US . . . The question that arises is whether GSK's valuation could end up worse than its current level?' (Credit Lyonnais Securities 2004a: 4).

The business press has been sceptical about Glaxo for some time before and after the SKB merger because there is so little in the later stages of the pipeline. Here, for example, is *The Economist* (25 November 2000) on Glaxo Wellcome immediately prior to the GSK merger:

They have retooled its R&D, investing heavily in new discovery technologies, reaching out to biotechnology firms through acquisitions and alliances, and realigning the new firm's research and marketing units. But drug making is a slow business, and it will



be at least another five years before these new initiatives bear fruit in terms of lucrative new drugs.

Thus, the *Financial Times*'s front-page story about GSK's 2003 R&D lay responded coolly to the event and observed that many of the projects were still at too early a stage to guarantee near-term prosperity:

Despite the upbeat comments, investors remained uncertain about the group's long-term prospects and the shares, which had risen in anticipation, fell 1.4 per cent to £13.11. While analysts welcomed the size of the pipeline, adding that several products had considerable sales potential, they said that many of the projects were still at too early a stage to inspire considerable confidence.

(*Financial Times*, 4 December 2003)

The *Financial Times* has also on several occasions noted that generally few drugs move from Phase I to final market and specifically GSK has had a lower success rate than the industry norm for drugs moving from Phase II and III to the final market (*Financial Times*, 1 December 2003, 4 December 2004). The evidence here is not clear-cut but obviously, in so far as investors base their decisions on late-stage products, companies have a short-term incentive to 'push' drugs into the later stages regardless of the long-term impact this may have on failure rates.

The net result is that the incumbent management at Glaxo Wellcome and then at GSK has suffered a loss of credibility that can be illustrated in various ways. The market appreciates GSK's management focus on cost-cutting and margin-improvement which delivers the numbers in the short run. For example, Morgan Stanley acclaimed GSK's solid Quintile 1 2004 results which, despite 'lighter' than anticipated sales, managed better than expected profits due to reduced R&D and sales, general and administration costs (Morgan Stanley 2004b: 1). But, as Morgan Stanley recognizes, this is not a recipe for longer term growth (2004a: 1). And, the market does not trust the management to make another big move. Given scepticism about the results of the SKB merger, further M&A might not be well received (SG Cowen 2004: 6). This can be clearly seen in the negative market response and share-price drop following rumours of mergers with both Bristol-Myers Squibb BMS (*Financial Times*, 1 June 2002) and Sanofi/Aventis (Credit Lyonnais Securities 2004b). Ultimately, the verdict is that GSK has become a (relatively) cheap income stock which should carry a health warning: 'trading at 13.5 times our 2005 EPS estimate, GSK is the cheapest major drug stock. However, in recent times cheapness has been more indicative of the possibility that the forecasts are wrong. In most cases, the market has been correct and profit warnings have followed' (Morgan Stanley 2004a: 1).

After GSK has gone ex-growth, management has so far won the struggle to keep the numbers going in ratio terms and to deliver earnings but it has lost the struggle to sustain a narrative that can offer credible promises about an exciting future. And that is reflected

in the public discussion of new issues such as top management pay and reinvention of the business model.

## BETWEEN THE FUTURE AND THE PAST: UNRESOLVED ISSUES

It is generally impossible and unwise to try to predict corporate futures, so in the final section of this case study we discuss some key unresolved issues that are pertinent to understanding GSK's current position and the difficulties of delivering convincing narratives and numbers. The loss of management reputation in the GSK company and the damage to the pharma-industry business model change the whole terms of debate around the company in its industry and have brought new issues into focus. The first of these issues is the public-interest issue of top-management pay where the remuneration package of CEO Jean-Pierre Garnier became an issue in 2002–3. While this was an interesting test case for UK corporate governance, in our view the company's confrontation with its shareholders was largely driven by short-term concerns about GSK's financial performance. This same concern about the performance of GSK and other pharma companies is manifest in the second issue which arises from media and consultancy concern with the broken business model of ethical pharma companies such as GSK and the consensus that ethical pharma needs a new business model.

GSK came under sustained attack from shareholder groups after the company told investors in November 2002 about a plan to enhance the remuneration package of Jean-Pierre Garnier to a level that was estimated to be worth around \$18 million per annum (*Financial Times*, 10 February 2003). The company argued that such levels of pay were necessary to recruit and retain exceptional staff in a global industry where US levels of pay have been far higher than those prevailing in the UK. Despite making such arguments, GSK withdrew the plan but then ran into further trouble with shareholders in May 2003 at the annual general meeting when a revised pay package was criticized. In particular, shareholder groups objected to the severance provision that would have ensured a generous 'golden parachute' for Garnier whereby resignation or sacking would result in a pay off of \$23.7 million in bonus, salary and GSK stock, as well as pension enhancements (*New York Times*, 20 May 2003).

The trouble-making investors took advantage of new laws in the UK that only came into effect in 2002 (Directors' Remuneration Report Regulations [SI 2002/1986] and the Companies [Summary Financial Statement] Amendments Regulations [SI 2002/1780]). This allows shareholders to vote on their company's proposed remuneration package as well as obliging enhanced disclosure of the level and conditions of



executive remuneration. Such votes are advisory rather than binding, but criticisms from shareholders, both prior to and during the AGM, have received considerable attention in the press. GSK had little alternative but to make further concessions and, as a result, Garnier's contract was reduced from two years to one (in line with UK corporate governance best practice) and the company also tightened the performance targets that trigger share-option grants (*Financial Times*, 16 December 2003, 27 March 2004).

If all this made good corporate theatre, the furore reflected all the confusions of the broader pay-for-performance debate. One of the underlying problems was that GSK was adopting US practices on pay and contract length in a company that was still nominally British. As we have noted in Chapter 3 of the introduction to this book, the CEOs of giant US companies get six or seven times the million-pound going rate for British CEOs, and the one-year contract that limits compensation is British good practice but not common in the USA. The *Financial Times* identified GSK as part of a new elite of British companies, like Vodafone and Prudential, who were attempting to breach UK top-management pay norms and establish American pay rates (*Financial Times*, 19 November 2002). In Glaxo's case, there was some justification for high pay because, as the introduction showed, Glaxo is just about the only FTSE 100 company which over the past twenty years has offered shareholders a return equal to the growth of management pay.

But the point is not so much that the criticism of Garnier's pay was fair or unfair but that its vehemence reflected deep unease about the performance of GSK. This then spilled over onto the issue of Garnier's pay because GSK's practices were provocatively American. The unfairness was perhaps that incumbent company management was being blamed for industry-wide problems that no management could fix. And this demonstrates the practical difficulties about corporate governance which is ostensibly about universal rules but which is actually context-specific and expectations-dependent. Most importantly, in our view, if GSK had been delivering, Garnier would have got away with it. As GSK was not delivering, the question, as the *Financial Times* (19 November 2002) put it, was whether Garnier was really worth it: 'what investors really need to do is ask themselves whether the man is worth his cornucopia. He has not exactly impressed the city... If Mr Garnier walks, perhaps that will be no bad thing.'

If the criticism of Garnier and Glaxo is depersonalized, the unresolved issue is currently framed as one about the industry's need for a new business model. Many commentators share the general view that the business model of 'Big Pharma' needs reinvention, but there is no consensus as to what a new business model would look like nor indeed about whether there will be one or several such models. *Business Week* (29 November 2004), for instance, argues that 'Big Pharma is far too focused on looking for the next best-seller', which leads to a conservative drug-development approach and urges a more creative, less risk-averse strategy. As part of this, there are calls for a shift to 'personalized medicine', where treatments are targeted more specifically on individual patients (*Business Week*, 18 October 2004).

These ideas of reinvention are, predictably, exciting stimuli for consultancy firms and other organizations, which hope to win business by offering visions of the pharma future.

- Accenture outlines its vision of the 'bioeconomy' which 'argues a shift from medicine created for large populations to focus on the individual patient and the evolution of a patient-centric model of health care' (Baker 2001: 69).
- Datamonitor's new business model has a different starting point, the failure of large scale M&A to solve the underlying problem of the industry's 'deepening productivity crisis' (Coe 2002: 1). Here 'networked pharma' is introduced as a solution to the problem identified by Datamonitor's quite detailed analysis. There are no scale economies from expenditure on sales and marketing and that 'R&D investment is directly proportional to pipeline productivity'; hence getting bigger does not help bolster deteriorating margins. The networked-growth model allows growth 'by downsizing' (Coe 2002: 5) so that companies 'keep in house only the intellectual capital that is critical to its competitive advantage and outsource the rest in the form of temporary and long term, domestic and international strategic alliances with peers and vendors' (Coe 2002: 5).
- Mercer's (2003) response to the end of the 'blockbuster model' is to encourage business-design analysis that does not presuppose any one new model.
- For Arthur D. Little (2003: 1 and 4), the 'unravelling of the value chain' and a shift in power from big pharma to smaller specialists, such as bio-tech firms, leads to two successful new business models: 'activity specialists' that concentrate on one part of the value chain (e.g. drug development, clinical research or production) and 'market specialists' who are integrated through the value chain but who focus on specific 'lucrative markets, such as vaccines, HIV, hormones or dermatology'.

The accumulating problem is that there are so many different (and untried) new business models partly because it is much easier to write a 10,000-word report or give a good presentation than it is to reconfigure the fundamentals of a giant company while ensuring that it meets the next quarter's earnings target. Thus GSK, like other giant pharma companies, has only toyed with new business models in an experimental way. The company remains vertically integrated because R&D expenditure has not been cut back and there have not been wholesale redundancies in the labs. But Glaxo, like other giant companies, has a growing interest in supplementing in-house developed drugs with bought-in product. Under in-licensing deals, Glaxo sales representatives market a competitor's drug for a cut of the profits (*Business Week*, 30 July 2001). Over twenty such deals struck were struck in two years after the 2000 merger with SKB (ABN: Amro 2002: 41). A typical deal would involve licensing a drug for around \$50 million with the aim of eventually earning royalties of up to 10–12 per cent on upwards of \$1 billion sales, and such deals are seen as an important contributor to GSK's new product flow (*Business Week*, 30 July 2001).



This development is interesting because vertical disintegration and a retreat onto marketing represents an admission of failure which raises a whole series of further questions about whether a vertically disintegrated model would be viable for giant pharmaceutical companies. The viability of a disintegrated business would partly depend on the balance of power between giant marketing companies and smaller research-based organizations that can probably play off the big firms. More fundamentally, like everything else in pharmaceutical, it brings us back to the arguments about good pharmaceutical and bad pharmaceutical at the Kefauver's hearings (discussed in the first section of this case study) and, interestingly, this official debate has been renewed in a 120-page report by the UK House of Commons Health Committee published in April 2005 as this case study went to press. What is the justification for the patents that protect the high prices and handsome margins that still survive in the 2000s after market growth has faltered? If giant ethical companies were to reinvent themselves as marketing organizations, they could not so easily invoke the 'good pharmaceutical' argument and argue that their high profits represent deferred investment in drug R&D. This demonstrates the point that now (as in the 1950s) the future of pharmaceutical depends on the framing of social benefits and the choice of private business model, on narrative as much as numbers.

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## APPENDIX

**Table C1.1** Glaxo, Glaxo Wellcome and GlaxoSmithKline: sales and profits, 1980–2003 (nominal data)

|              | Sales     | % change<br>in sales<br>year on<br>year | Operating<br>profit | % change<br>in operating<br>profit year<br>on year | Net profit | % change<br>in net<br>profit year<br>on year |
|--------------|-----------|-----------------------------------------|---------------------|----------------------------------------------------|------------|----------------------------------------------|
|              | £ million | %                                       | £ million           | %                                                  | £ million  | %                                            |
| 1980         | 618       |                                         | 66                  |                                                    | 42         |                                              |
| 1981         | 710       | 14.9                                    | 87                  | 31.8                                               | 61         | 44.9                                         |
| 1982         | 866       | 21.9                                    | 126                 | 45.8                                               | 80         | 32.8                                         |
| 1983         | 1,028     | 18.7                                    | 178                 | 41.2                                               | 115        | 43.5                                         |
| 1984         | 1,200     | 16.8                                    | 235                 | 32.0                                               | 169        | 46.2                                         |
| 1985         | 1,412     | 17.7                                    | 361                 | 53.6                                               | 267        | 58.1                                         |
| 1986         | 1,429     | 1.2                                     | 499                 | 38.1                                               | 400        | 50.0                                         |
| 1987         | 1,741     | 21.9                                    | 665                 | 33.2                                               | 510        | 27.5                                         |
| 1988         | 2,059     | 18.3                                    | 764                 | 14.9                                               | 578        | 13.3                                         |
| 1989         | 2,570     | 24.8                                    | 876                 | 14.7                                               | 688        | 19.0                                         |
| 1990         | 2,854     | 11.1                                    | 998                 | 13.9                                               | 793        | 15.3                                         |
| 1991         | 3,397     | 19.0                                    | 1,104               | 10.6                                               | 881        | 11.1                                         |
| 1992         | 4,096     | 20.6                                    | 1,287               | 16.6                                               | 1,033      | 17.3                                         |
| 1993         | 4,930     | 20.4                                    | 1,525               | 18.5                                               | 1,207      | 16.8                                         |
| 1994         | 5,656     | 14.7                                    | 1,819               | 19.3                                               | 1,303      | 8.0                                          |
| 1995         | 6,993     | 23.6                                    | 1,588               | -12.7                                              | 972        | -25.4                                        |
| 1996         | 8,341     | 19.3                                    | 3,132               | 97.2                                               | 1,997      | 105.5                                        |
| 1997         | 7,980     | -4.3                                    | 2,822               | -9.9                                               | 1,850      | -7.4                                         |
| 1998         | 7,983     | 0.0                                     | 2,683               | -4.9                                               | 1,836      | -0.8                                         |
| 1999         | 8,490     | 6.4                                     | 2,625               | -2.2                                               | 1,811      | -1.4                                         |
| 2000         | 18,079    | 112.9                                   | 4,455               | 69.7                                               | 4,154      | 129.4                                        |
| 2001         | 20,489    | 13.3                                    | 4,697               | 5.4                                                | 3,190      | -23.2                                        |
| 2002         | 21,212    | 3.5                                     | 5,662               | 20.5                                               | 4,045      | 26.8                                         |
| 2003         | 21,441    | 1.1                                     | 6,525               | 15.2                                               | 4,484      | 10.9                                         |
| 1994         |           |                                         |                     |                                                    |            |                                              |
| Glaxo        | 5,656     |                                         | 1,819               |                                                    | 1,303      |                                              |
| Wellcome     | 2,276     |                                         | 911                 |                                                    | 404        |                                              |
| Total G+W    | 7,932     |                                         | 2,730               |                                                    | 1,707      |                                              |
| 1999         |           |                                         |                     |                                                    |            |                                              |
| GW           | 8,490     |                                         | 2,625               |                                                    | 1,811      |                                              |
| SKB          | 8,381     |                                         | 1,713               |                                                    | 1,053      |                                              |
| Total GW+SKB | 16,871    |                                         | 4,338               |                                                    | 2,864      |                                              |

Source: Glaxo, Glaxo Wellcome, GlaxoSmithKline Annual Report and Accounts, various years

**Table C1.2** Glaxo, Glaxo Wellcome and GlaxoSmithKline: real sales and profits, 1980–2003 (in real 2003 prices)

|              | Real<br>sales | % change<br>in sales<br>year on<br>year | Real<br>operating<br>profit | % change<br>in operating<br>profit, year<br>on year | Real net<br>profit | % change<br>in net<br>profit,<br>year on<br>year |
|--------------|---------------|-----------------------------------------|-----------------------------|-----------------------------------------------------|--------------------|--------------------------------------------------|
|              | £ million     | %                                       | £ million                   | %                                                   | £ million          | %                                                |
| 1980         | 1,677         |                                         | 178                         |                                                     | 113                |                                                  |
| 1981         | 1,723         | 2.7                                     | 210                         | 17.7                                                | 147                | 29.5                                             |
| 1982         | 1,933         | 12.2                                    | 282                         | 34.3                                                | 180                | 22.3                                             |
| 1983         | 2,193         | 13.5                                    | 380                         | 35.0                                                | 246                | 37.2                                             |
| 1984         | 2,439         | 11.2                                    | 478                         | 25.8                                                | 343                | 39.2                                             |
| 1985         | 2,705         | 10.9                                    | 692                         | 44.8                                                | 511                | 49.0                                             |
| 1986         | 2,647         | -2.1                                    | 925                         | 33.6                                                | 741                | 45.1                                             |
| 1987         | 3,099         | 17.1                                    | 1,184                       | 28.0                                                | 908                | 22.4                                             |
| 1988         | 3,493         | 12.7                                    | 1,296                       | 9.5                                                 | 981                | 8.0                                              |
| 1989         | 4,045         | 15.8                                    | 1,379                       | 6.4                                                 | 1,083              | 10.4                                             |
| 1990         | 4,102         | 1.4                                     | 1,434                       | 4.0                                                 | 1,140              | 5.3                                              |
| 1991         | 4,611         | 12.4                                    | 1,498                       | 4.5                                                 | 1,196              | 4.9                                              |
| 1992         | 5,361         | 16.3                                    | 1,685                       | 12.4                                                | 1,352              | 13.1                                             |
| 1993         | 6,351         | 18.5                                    | 1,965                       | 16.6                                                | 1,555              | 15.0                                             |
| 1994         | 7,109         | 11.9                                    | 2,286                       | 16.4                                                | 1,638              | 5.3                                              |
| 1995         | 8,500         | 19.6                                    | 1,930                       | -15.6                                               | 1,181              | -27.9                                            |
| 1996         | 9,901         | 16.5                                    | 3,718                       | 92.6                                                | 2,370              | 100.6                                            |
| 1997         | 9,188         | -7.2                                    | 3,249                       | -12.6                                               | 2,130              | -10.1                                            |
| 1998         | 8,889         | -3.3                                    | 2,987                       | -8.1                                                | 2,044              | -4.0                                             |
| 1999         | 9,304         | 4.7                                     | 2,877                       | -3.7                                                | 1,985              | -2.9                                             |
| 2000         | 19,255        | 106.9                                   | 4,745                       | 64.9                                                | 4,424              | 122.9                                            |
| 2001         | 21,428        | 11.3                                    | 4,912                       | 3.5                                                 | 3,336              | -24.6                                            |
| 2002         | 21,827        | 1.9                                     | 5,826                       | 18.6                                                | 4,162              | 24.8                                             |
| 2003         | 21,441        | -1.8                                    | 6,525                       | 12.0                                                | 4,484              | 7.7                                              |
| 1994         |               |                                         |                             |                                                     |                    |                                                  |
| Glaxo        | 7,109         |                                         | 2,286                       |                                                     | 1,638              |                                                  |
| Wellcome     | 2,861         |                                         | 1,145                       |                                                     | 507                |                                                  |
| Total G+W    | 9,969         |                                         | 3,431                       |                                                     | 2,145              |                                                  |
| 1999         |               |                                         |                             |                                                     |                    |                                                  |
| GW           | 9,304         |                                         | 2,877                       |                                                     | 1,985              |                                                  |
| SKB          | 9,185         |                                         | 1,877                       |                                                     | 1,154              |                                                  |
| Total GW+SKB | 18,489        |                                         | 4,754                       |                                                     | 3,139              |                                                  |

Source: Glaxo, Glaxo Wellcome, GlaxoSmithKline Annual Report and Accounts, various years



**Table C1.3 Glaxo, Glaxo Wellcome and GlaxoSmithKline: geographical breakdown of sales revenue, 1980–2003 (nominal data)**

|    | Total sales | Geographic breakdown of sales |                                    |              |           | % share of sales |                                    |              |       |
|----|-------------|-------------------------------|------------------------------------|--------------|-----------|------------------|------------------------------------|--------------|-------|
|    |             | North America                 | Europe, Africa and the Middle East | Asia Pacific | Other     | North America    | Europe, Africa and the Middle East | Asia Pacific | Other |
|    | £ million   | £ million                     | £ million                          | £ million    | £ million | %                | %                                  | %            | %     |
| 80 | 618         | 52                            | 457                                | 110          | 0         | 8.4              | 73.9                               | 17.8         | 0.0   |
| 81 | 710         | 65                            | 502                                | 143          | 0         | 9.2              | 70.7                               | 20.1         | 0.0   |
| 82 | 866         | 81                            | 593                                | 192          | 0         | 9.3              | 68.5                               | 22.2         | 0.0   |
| 83 | 1,028       | 97                            | 732                                | 199          | 0         | 9.4              | 71.2                               | 19.4         | 0.0   |
| 84 | 1,200       | 193                           | 861                                | 113          | 33        | 16.0             | 71.8                               | 9.4          | 2.8   |
| 85 | 1,412       | 333                           | 904                                | 144          | 31        | 23.6             | 64.0                               | 10.2         | 2.2   |
| 86 | 1,429       | 468                           | 768                                | 137          | 56        | 32.8             | 53.7                               | 9.6          | 3.9   |
| 87 | 1,741       | 662                           | 880                                | 154          | 45        | 38.0             | 50.5                               | 8.8          | 2.6   |
| 88 | 2,059       | 831                           | 1,010                              | 187          | 31        | 40.4             | 49.1                               | 9.1          | 1.5   |
| 89 | 2,570       | 1,081                         | 1,140                              | 229          | 120       | 42.1             | 44.4                               | 8.9          | 4.7   |
| 90 | 2,854       | 1,233                         | 1,348                              | 222          | 51        | 43.2             | 47.2                               | 7.8          | 1.8   |
| 91 | 3,397       | 1,359                         | 1,560                              | 383          | 95        | 40.0             | 45.9                               | 11.3         | 2.8   |
| 92 | 4,096       | 1,715                         | 1,826                              | 434          | 121       | 41.9             | 44.6                               | 10.6         | 3.0   |
| 93 | 4,930       | 2,132                         | 2,086                              | 529          | 183       | 43.2             | 42.3                               | 10.7         | 3.7   |
| 94 | 5,656       | 2,459                         | 2,100                              | 610          | 487       | 43.5             | 37.1                               | 10.8         | 8.6   |
| 95 | 7,973       | 3,495                         | 2,936                              | 1,110        | 432       | 43.8             | 36.8                               | 13.9         | 5.4   |
| 96 | 8,341       | 3,683                         | 3,087                              | 1,244        | 327       | 44.2             | 37.0                               | 14.9         | 3.9   |
| 97 | 7,980       | 3,589                         | 2,849                              | 1,162        | 380       | 45.0             | 35.7                               | 14.6         | 4.8   |
| 98 | 7,983       | 3,565                         | 2,968                              | 1,034        | 416       | 44.7             | 37.2                               | 13.0         | 5.2   |
| 99 | 8,490       | 3,776                         | 3,142                              | 1,170        | 402       | 44.5             | 37.0                               | 13.8         | 4.7   |
| 00 | 18,079      | 8,087                         | 4,779                              | 1,881        | 3,332     | 44.7             | 26.4                               | 10.4         | 18.4  |
| 01 | 20,489      | 9,455                         | 5,100                              | 1,860        | 4,074     | 46.1             | 24.9                               | 9.1          | 19.9  |
| 02 | 21,212      | 10,224                        | 5,276                              | 1,889        | 3,823     | 48.2             | 24.9                               | 8.9          | 18.0  |
| 03 | 21,441      | 9,884                         | 5,807                              | 1,893        | 3,857     | 46.1             | 27.1                               | 8.8          | 18.0  |

Source: Glaxo, Glaxo Wellcome, GlaxoSmithKline Annual Report and Accounts, various years

Notes: North American 1980 sales includes sales to Central and South America. Alongside Pharma sales, Glaxo produces Farley Rusks, Ostermilks and Complian. (p.8) European 1984 and 1985 sales includes Middle East. 'Other' category includes consumer health-care sales and are significant from 2000 onwards

**Table C1.4 Glaxo, Glaxo Wellcome and GlaxoSmithKline: cost structure, 1980–2003 (nominal data)**

|          | Sales     | Labour costs | R&D       | Depreciation | Net interest payments | Dividends | Retained profit |
|----------|-----------|--------------|-----------|--------------|-----------------------|-----------|-----------------|
|          | £ million | £ million    | £ million | £ million    | £ million             | £ million | £ million       |
| 1980     | 618       | 150          | 38        | 18           | -3                    | 16        | 26              |
| 1981     | 710       | 174          | 45        | 19           | -3                    | 19        | 42              |
| 1982     | 866       | 207          | 53        | 24           | 1                     | 24        | 56              |
| 1983     | 1,028     | 224          | 60        | 30           | -4                    | 33        | 83              |
| 1984     | 1,200     | 254          | 76        | 33           | 7                     | 48        | 121             |
| 1985     | 1,412     | 296          | 92        | 39           | 14                    | 74        | 193             |
| 1986     | 1,429     | 316          | 113       | 42           | 95                    | 104       | 297             |
| 1987     | 1,741     | 358          | 149       | 55           | 51                    | 141       | 369             |
| 1988     | 2,059     | 425          | 230       | 73           | 68                    | 185       | 396             |
| 1989     | 2,570     | 537          | 323       | 93           | 130                   | 260       | 426             |
| 1990     | 2,854     | 645          | 399       | 117          | 142                   | 329       | 464             |
| 1991     | 3,397     | 844          | 475       | 151          | 179                   | 420       | 461             |
| 1992     | 4,096     | 911          | 595       | 191          | 140                   | 512       | 521             |
| 1993     | 4,930     | 1,187        | 739       | 225          | 150                   | 667       | 540             |
| 1994     | 5,656     | 1,300        | 858       | 282          | 21                    | 823       | 480             |
| 1995     | 6,993     | 1,710        | 1,198     | 355          | -58                   | 1,020     | -48             |
| 1996     | 8,341     | 1,866        | 1,161     | 410          | -187                  | 1,202     | 795             |
| 1997     | 7,980     | 1,827        | 1,148     | 373          | -123                  | 1,249     | 601             |
| 1998     | 7,983     | 1,808        | 1,163     | 358          | -91                   | 1,300     | 536             |
| 1999     | 8,490     | 2,042        | 1,269     | 360          | -92                   | 1,341     | 470             |
| 2000     | 18,079    | 4,487        | 2,526     | 735          | -182                  | 2,097     | 2,057           |
| 2001     | 20,489    | 4,686        | 2,651     | 761          | -69                   | 2,356     | 703             |
| 2002     | 21,212    | 4,940        | 2,900     | 764          | -141                  | 2,346     | 1,569           |
| 2003     | 21,441    | 5,058        | 2,791     | 773          | -132                  | 2,374     | 2,110           |
| 1994     |           |              |           |              |                       |           |                 |
| Glaxo    | 5,656     | 1,300        | 543       | 282          | 21                    | 823       | 480             |
| Wellcome | 2,276     | 513          | 159       | 95           | -58                   | 203       | 200             |
| Total    |           |              |           |              |                       |           |                 |
| G+W      | 7,932     | 1,813        | 702       | 377          | -37                   | 1,026     | 680             |
| 1999     |           |              |           |              |                       |           |                 |
| GW       | 8,490     | 2,042        |           | 360          | -92                   | 1,341     | 470             |
| SKB      | 8,381     | 2,031        |           | 295          | 118                   | 664       | 389             |
| Total    |           |              |           |              |                       |           |                 |
| GW+SKB   | 16,871    | 4,073        |           | 655          | 26                    | 2,005     | 859             |

Source: Glaxo, Glaxo Wellcome, GlaxoSmithKline Annual Report and Accounts, various years

Note: Under net interest payable, a positive payment implies net interest payments; a negative figure indicates net interest received



**Table C1.5** Glaxo, Glaxo Wellcome and GlaxoSmithKline: significance of cost items, 1980–2003, as a % of sales revenues

|      | Labour costs | R&D  | Depreciation | Net interest | Dividends | Retained profit |
|------|--------------|------|--------------|--------------|-----------|-----------------|
| 1980 | 24.3         | 6.1  | 2.9          | 0.5          | 2.6       | 4.2             |
| 1981 | 24.5         | 6.3  | 2.6          | 0.4          | 2.7       | 5.8             |
| 1982 | 23.9         | 6.1  | 2.8          | -0.1         | 2.8       | 6.5             |
| 1983 | 21.8         | 5.8  | 2.9          | 0.4          | 3.2       | 8.0             |
| 1984 | 21.2         | 6.3  | 2.7          | -0.6         | 4.0       | 10.1            |
| 1985 | 21.0         | 6.5  | 2.8          | -1.0         | 5.2       | 13.6            |
| 1986 | 22.1         | 8.0  | 3.0          | -6.6         | 7.3       | 20.8            |
| 1987 | 20.6         | 10.9 | 3.2          | -2.9         | 8.1       | 21.2            |
| 1988 | 20.6         | 11.2 | 3.5          | -3.3         | 9.0       | 19.2            |
| 1989 | 20.9         | 12.6 | 3.6          | -5.1         | 10.1      | 16.6            |
| 1990 | 22.6         | 14.0 | 4.1          | -5.0         | 11.5      | 16.3            |
| 1991 | 23.9         | 14.0 | 4.4          | -5.3         | 12.4      | 13.6            |
| 1992 | 23.0         | 14.5 | 4.7          | -3.4         | 12.5      | 12.7            |
| 1993 | 24.1         | 15.0 | 4.6          | -3.0         | 13.5      | 11.0            |
| 1994 | 23.0         | 15.2 | 5.0          | -0.4         | 14.6      | 8.5             |
| 1995 | 24.5         | 17.1 | 5.1          | 0.8          | 14.6      | -0.7            |
| 1996 | 22.4         | 13.9 | 4.9          | 2.2          | 14.4      | 9.5             |
| 1997 | 22.9         | 14.4 | 4.7          | 1.5          | 15.7      | 7.5             |
| 1998 | 22.6         | 14.6 | 4.5          | 1.1          | 16.3      | 6.7             |
| 1999 | 24.1         | 14.9 | 4.2          | 1.1          | 15.8      | 5.5             |
| 2000 | 24.8         | 14.0 | 4.1          | 1.0          | 11.6      | 11.4            |
| 2001 | 22.9         | 12.9 | 3.7          | 0.3          | 11.5      | 3.4             |
| 2002 | 23.3         | 13.7 | 3.6          | 0.7          | 11.1      | 7.4             |
| 2003 | 23.6         | 13.0 | 3.6          | 0.6          | 11.1      | 9.8             |

Source: Glaxo, Glaxo Wellcome, GlaxoSmithKline Annual Report and Accounts, various years

Note: Under net interest payable, a positive payment implies net interest payments; a negative figure indicates net interest received

**Table C1.6** Glaxo, Glaxo Wellcome and GlaxoSmithKline: capital structure, 1980–2003 (nominal data)

|    | Shareholder equity | Long-term debt | Other capital (e.g. minority interests) | Total capital employed | All other debt | Gearing (long-term debt as % of capital employed) |
|----|--------------------|----------------|-----------------------------------------|------------------------|----------------|---------------------------------------------------|
|    | £ million          | £ million      | £ million                               | £ million              | £ million      | %                                                 |
| 30 | 338                | 44             | 17                                      | 399                    | 211            | 11.0                                              |
| 31 | 382                | 44             | 16                                      | 442                    | 244            | 9.9                                               |
| 32 | 428                | 37             | 6                                       | 471                    | 322            | 7.9                                               |
| 33 | 542                | 50             | 4                                       | 597                    | 329            | 8.4                                               |
| 34 | 676                | 53             | 8                                       | 736                    | 409            | 7.1                                               |
| 35 | 852                | 75             | 9                                       | 937                    | 434            | 8.0                                               |
| 36 | 1,090              | 59             | 10                                      | 1,159                  | 559            | 5.1                                               |
| 37 | 1,450              | 107            | 14                                      | 1,571                  | 711            | 6.8                                               |
| 38 | 1,784              | 114            | 19                                      | 1,917                  | 869            | 5.9                                               |
| 39 | 2,291              | 192            | 22                                      | 2,505                  | 863            | 7.7                                               |
| 40 | 2,732              | 89             | 32                                      | 2,853                  | 1,335          | 3.1                                               |
| 41 | 3,208              | 78             | 164                                     | 3,450                  | 2,027          | 2.3                                               |
| 42 | 3,572              | 177            | 67                                      | 3,816                  | 1,568          | 4.6                                               |
| 43 | 4,546              | 243            | 111                                     | 4,900                  | 2,200          | 5.0                                               |
| 44 | 5,043              | 298            | 123                                     | 5,464                  | 2,130          | 5.5                                               |
| 45 | 91                 | 1,466          | 130                                     | 1,687                  | 5,466          | 86.9                                              |
| 46 | 1,225              | 1,699          | 42                                      | 2,966                  | 4,154          | 57.3                                              |
| 47 | 1,843              | 1,841          | 47                                      | 3,731                  | 3,886          | 49.3                                              |
| 48 | 2,702              | 1,804          | 66                                      | 4,572                  | 4,145          | 39.5                                              |
| 49 | 3,142              | 1,260          | 51                                      | 4,453                  | 5,263          | 28.3                                              |
| 50 | 7,711              | 1,894          | 1,244                                   | 10,849                 | 9,084          | 17.5                                              |
| 51 | 7,517              | 2,108          | 862                                     | 10,487                 | 9,430          | 20.1                                              |
| 52 | 6,581              | 3,092          | 807                                     | 10,480                 | 8,808          | 29.5                                              |
| 53 | 7,720              | 3,883          | 745                                     | 12,348                 | 8,597          | 31.4                                              |

Source: Glaxo, Glaxo Wellcome, GlaxoSmithKline Annual Report and Accounts, various years



Table C1.7 Glaxo, Glaxo Wellcome and GlaxoSmithKline: capital structure, 1980–2003 (in real 2003 prices)

|     | Shareholder equity | Long-term debt | Other capital (e.g. minority interests) | Total capital employed | All other debt | Gearing (long-term debt as % of capital employed) |
|-----|--------------------|----------------|-----------------------------------------|------------------------|----------------|---------------------------------------------------|
|     | £ million          | £ million      | £ million                               | £ million              | £ million      | %                                                 |
| '80 | 918                | 119            | 45                                      | 1,082                  | 572            | 11.0                                              |
| '81 | 926                | 106            | 39                                      | 1,071                  | 592            | 9.9                                               |
| '82 | 955                | 83             | 14                                      | 1,052                  | 719            | 7.9                                               |
| '83 | 1,157              | 108            | 9                                       | 1,274                  | 701            | 8.4                                               |
| '84 | 1,373              | 107            | 16                                      | 1,496                  | 832            | 7.1                                               |
| '85 | 1,632              | 144            | 18                                      | 1,795                  | 830            | 8.0                                               |
| '86 | 2,019              | 110            | 19                                      | 2,148                  | 1,036          | 5.1                                               |
| '87 | 2,581              | 190            | 25                                      | 2,796                  | 1,265          | 6.8                                               |
| '88 | 3,027              | 193            | 32                                      | 3,253                  | 1,474          | 5.9                                               |
| '89 | 3,606              | 302            | 35                                      | 3,943                  | 1,358          | 7.7                                               |
| '90 | 3,927              | 128            | 46                                      | 4,101                  | 1,919          | 3.1                                               |
| '91 | 4,354              | 106            | 223                                     | 4,683                  | 2,751          | 2.3                                               |
| '92 | 4,675              | 232            | 88                                      | 4,995                  | 2,052          | 4.6                                               |
| '93 | 5,856              | 313            | 143                                     | 6,312                  | 2,834          | 5.0                                               |
| '94 | 6,338              | 375            | 155                                     | 6,867                  | 2,677          | 5.5                                               |
| '95 | 111                | 1,782          | 158                                     | 2,051                  | 6,644          | 86.9                                              |
| '96 | 1,454              | 2,017          | 50                                      | 3,521                  | 4,931          | 57.3                                              |
| '97 | 2,122              | 2,120          | 54                                      | 4,296                  | 4,474          | 49.3                                              |
| '98 | 3,009              | 2,009          | 73                                      | 5,091                  | 4,615          | 39.5                                              |
| '99 | 3,443              | 1,381          | 56                                      | 4,880                  | 5,768          | 28.3                                              |
| '00 | 8,213              | 2,017          | 1,325                                   | 11,555                 | 9,675          | 17.5                                              |
| '01 | 7,861              | 2,205          | 901                                     | 10,967                 | 9,862          | 20.1                                              |
| '02 | 6,772              | 3,182          | 830                                     | 10,784                 | 9,063          | 29.5                                              |
| '03 | 7,720              | 3,883          | 745                                     | 12,348                 | 8,597          | 31.4                                              |

Source: Glaxo, Glaxo Wellcome, GlaxoSmithKline Annual Report and Accounts, various years

Table C1.8 Glaxo, Glaxo Wellcome and GlaxoSmithKline: employment, 1980–2003

|     | Total employment | Geographic breakdown of employment |      |          |      | Functional breakdown of employment |      |        |      |                            |      |
|-----|------------------|------------------------------------|------|----------|------|------------------------------------|------|--------|------|----------------------------|------|
|     |                  | UK                                 |      | Overseas |      | Manufacturing                      |      | R&D    |      | Selling, general and admin |      |
|     |                  | No.                                | %    | No.      | %    | No.                                | %    | No.    | %    | No.                        | %    |
| '80 | 29,187           | 14,816                             | 50.8 | 14,371   | 49.2 |                                    |      |        |      |                            |      |
| '81 | 28,218           | 13,725                             | 48.6 | 14,493   | 51.4 |                                    |      |        |      |                            |      |
| '82 | 28,106           | 13,188                             | 46.9 | 14,918   | 53.1 |                                    |      |        |      |                            |      |
| '83 | 27,768           | 13,605                             | 49.0 | 14,163   | 51.0 |                                    |      |        |      |                            |      |
| '84 | 25,053           | 13,685                             | 54.6 | 11,368   | 45.4 |                                    |      |        |      |                            |      |
| '85 | 25,634           | 13,463                             | 52.5 | 12,171   | 47.5 |                                    |      |        |      |                            |      |
| '86 | 24,728           | 11,815                             | 47.8 | 12,913   | 52.2 |                                    |      |        |      |                            |      |
| '87 | 24,954           | 10,867                             | 43.5 | 14,087   | 56.5 |                                    |      |        |      |                            |      |
| '88 | 26,423           | 11,035                             | 41.8 | 15,388   | 58.2 |                                    |      |        |      |                            |      |
| '89 | 28,710           | 11,444                             | 39.9 | 17,266   | 60.1 |                                    |      |        |      |                            |      |
| '90 | 31,327           | 12,291                             | 39.2 | 19,036   | 60.8 |                                    |      |        |      |                            |      |
| '91 | 35,640           | 12,422                             | 34.9 | 23,218   | 65.1 | 13,358                             | 37.5 | 6,389  | 17.9 | 15,893                     | 44.6 |
| '92 | 37,083           | 11,968                             | 32.3 | 25,115   | 67.7 | 12,905                             | 34.8 | 6,643  | 17.9 | 17,535                     | 47.3 |
| '93 | 40,024           | 12,149                             | 30.4 | 27,875   | 69.6 | 13,515                             | 33.8 | 7,133  | 17.8 | 19,376                     | 48.4 |
| '94 | 47,189           | 12,000                             | 25.4 | 35,189   | 74.6 | 17,688                             | 37.5 | 7,476  | 15.8 | 22,025                     | 46.7 |
| '95 | 54,359           | 13,967                             | 25.7 | 40,392   | 74.3 | 19,122                             | 35.2 | 9,047  | 16.6 | 26,190                     | 48.2 |
| '96 | 53,808           | 13,000                             | 24.2 | 40,808   | 75.8 | 19,629                             | 36.5 | 8,822  | 16.4 | 25,357                     | 47.1 |
| '97 | 53,068           |                                    |      |          |      | 18,519                             | 34.9 | 8,808  | 16.6 | 25,741                     | 48.5 |
| '98 | 55,273           |                                    |      |          |      | 18,824                             | 34.1 | 9,269  | 16.8 | 27,180                     | 49.2 |
| '99 | 60,726           |                                    |      |          |      | 21,596                             | 35.6 | 9,836  | 16.2 | 29,294                     | 48.2 |
| '00 | 108,201          |                                    |      |          |      | 36,177                             | 33.4 | 16,659 | 15.4 | 55,365                     | 51.2 |
| '01 | 107,899          |                                    |      |          |      | 37,154                             | 34.4 | 15,090 | 14.0 | 55,655                     | 51.6 |
| '02 | 104,499          |                                    |      |          |      | 35,503                             | 34.0 | 14,624 | 14.0 | 54,372                     | 52.0 |
| '03 | 103,166          |                                    |      |          |      | 34,265                             | 33.2 | 14,773 | 14.3 | 54,128                     | 52.5 |

Source: Glaxo, Glaxo Wellcome, GlaxoSmithKline Annual Report and Accounts, various years



**Table C1.9** Glaxo, Glaxo Wellcome and GlaxoSmithKline: employee analysis, 1980–2003 (in real 2003 prices)

|      | Real sales per employee | Real value added per employee | Real compensation per employee |                        |
|------|-------------------------|-------------------------------|--------------------------------|------------------------|
|      | £                       | % change, year on year        | £                              | % change, year on year |
| 1980 | 57,457                  |                               | 21,517                         |                        |
| 1981 | 61,045                  | 6.2                           | 23,778                         | 10.5                   |
| 1982 | 68,772                  | 12.7                          | 29,049                         | 22.2                   |
| 1983 | 78,975                  | 14.8                          | 33,927                         | 16.8                   |
| 1984 | 97,353                  | 23.3                          | 44,664                         | 31.6                   |
| 1985 | 105,535                 | 8.4                           | 56,224                         | 25.9                   |
| 1986 | 107,056                 | 1.4                           | 79,730                         | 41.8                   |
| 1987 | 124,176                 | 16.0                          | 86,302                         | 8.2                    |
| 1988 | 132,214                 | 6.5                           | 89,769                         | 4.0                    |
| 1989 | 140,891                 | 6.6                           | 96,815                         | 7.8                    |
| 1990 | 130,950                 | -7.1                          | 93,785                         | -3.1                   |
| 1991 | 129,369                 | -1.2                          | 92,314                         | -1.6                   |
| 1992 | 144,571                 | 11.8                          | 95,369                         | 3.3                    |
| 1993 | 158,682                 | 9.8                           | 104,189                        | 9.2                    |
| 1994 | 150,642                 | -5.1                          | 91,701                         | -12.0                  |
| 1995 | 156,376                 | 3.8                           | 80,469                         | -12.2                  |
| 1996 | 184,004                 | 17.7                          | 111,470                        | 38.5                   |
| 1997 | 173,128                 | -5.9                          | 103,335                        | -7.3                   |
| 1998 | 160,817                 | -7.1                          | 95,608                         | -7.5                   |
| 1999 | 153,221                 | -4.7                          | 88,160                         | -7.8                   |
| 2000 | 177,956                 | 16.1                          | 108,955                        | 23.6                   |
| 2001 | 198,590                 | 11.6                          | 95,908                         | -12.0                  |
| 2002 | 208,874                 | 5.2                           | 108,996                        | 13.6                   |
| 2003 | 207,830                 | -0.5                          | 116,589                        | 7.0                    |

Source: Glaxo, Glaxo Wellcome, GlaxoSmithKline Annual Report and Accounts, various years

Note: Value added is sales revenues less external purchases. It is equivalent to operating profit plus depreciation plus labour costs (and this is usually how it is calculated given that external purchases are not normally separately disclosed in company accounts)

**Table C1.10** Glaxo, Glaxo Wellcome and GlaxoSmithKline: capital market performance, 1980–2003

|      | (Nominal)<br>Share price | (Nominal)<br>Share price<br>corrected for<br>share splits | (Nominal)<br>Market value | Market<br>value<br>(real 2003<br>prices) | P/E ratio<br>(post-tax) | Dividends<br>per share<br>(real 2003<br>prices) |
|------|--------------------------|-----------------------------------------------------------|---------------------------|------------------------------------------|-------------------------|-------------------------------------------------|
|      | £                        | £                                                         | £ million                 | £ million                                | Ratio                   | £                                               |
| 1980 | 2.24                     | 2.24                                                      | 379                       | 1,028                                    | 9.1                     | 0.26                                            |
| 1981 | 3.62                     | 3.62                                                      | 613                       | 1,486                                    | 10.1                    | 0.27                                            |
| 1982 | 7.04                     | 7.04                                                      | 1,210                     | 2,702                                    | 15.0                    | 0.31                                            |
| 1983 | 9.00                     | 18.00                                                     | 3,294                     | 7,029                                    | 28.5                    | 0.19                                            |
| 1984 | 8.65                     | 17.30                                                     | 3,184                     | 6,473                                    | 18.9                    | 0.26                                            |
| 1985 | 12.32                    | 24.64                                                     | 4,559                     | 8,735                                    | 17.1                    | 0.38                                            |
| 1986 | 10.13                    | 40.52                                                     | 7,498                     | 13,892                                   | 18.7                    | 0.26                                            |
| 1987 | 16.60                    | 66.39                                                     | 12,287                    | 21,869                                   | 24.1                    | 0.34                                            |
| 1988 | 9.91                     | 39.63                                                     | 7,335                     | 12,445                                   | 12.7                    | 0.42                                            |
| 1989 | 13.61                    | 54.44                                                     | 10,138                    | 15,956                                   | 14.7                    | 0.55                                            |
| 1990 | 8.17                     | 65.39                                                     | 12,213                    | 17,554                                   | 15.4                    | 0.32                                            |
| 1991 | 12.20                    | 97.56                                                     | 18,289                    | 24,823                                   | 20.8                    | 0.38                                            |
| 1992 | 6.79                     | 108.63                                                    | 20,438                    | 26,750                                   | 19.8                    | 0.22                                            |
| 1993 | 5.63                     | 90.07                                                     | 17,065                    | 21,983                                   | 14.1                    | 0.28                                            |
| 1994 | 5.44                     | 87.03                                                     | 16,587                    | 20,847                                   | 12.7                    | 0.34                                            |
| 1995 | 9.14                     | 146.22                                                    | 32,025                    | 38,927                                   | 32.9                    | 0.35                                            |
| 1996 | 9.47                     | 151.53                                                    | 33,578                    | 39,858                                   | 16.8                    | 0.40                                            |
| 1997 | 14.39                    | 230.28                                                    | 51,451                    | 59,237                                   | 27.8                    | 0.40                                            |
| 1998 | 20.66                    | 330.54                                                    | 74,903                    | 83,402                                   | 40.8                    | 0.40                                            |
| 1999 | 17.50                    | 280.00                                                    | 63,714                    | 69,826                                   | 35.2                    | 0.40                                            |
| 2000 | 18.63                    | 298.08                                                    | 118,910                   | 126,644                                  | 28.6                    | 0.36                                            |
| 2001 | 17.21                    | 275.38                                                    | 106,245                   | 111,113                                  | 33.3                    | 0.40                                            |
| 2002 | 11.95                    | 191.27                                                    | 72,016                    | 74,105                                   | 17.8                    | 0.40                                            |
| 2003 | 12.80                    | 204.80                                                    | 76,153                    | 76,153                                   | 17.0                    | 0.39                                            |

Source: Glaxo, Glaxo Wellcome, GlaxoSmithKline Annual Report and Accounts, various years



Table C1.11 Glaxo, Glaxo Wellcome and GlaxoSmithKline: key rate of return ratios, 1980–2003

|      | (Pre-tax)<br>ROS | (Net) ROS | (Pre-tax)<br>ROCE | (Post-tax)<br>ROCE | Return on<br>equity |
|------|------------------|-----------|-------------------|--------------------|---------------------|
|      | %                | %         | %                 | %                  | %                   |
| 1980 | 10.7             | 6.8       | 16.6              | 10.5               | 12.4                |
| 1981 | 12.3             | 8.5       | 19.8              | 13.7               | 15.9                |
| 1982 | 15.4             | 9.3       | 28.4              | 17.1               | 18.8                |
| 1983 | 18.7             | 11.2      | 32.2              | 19.3               | 21.3                |
| 1984 | 21.3             | 14.1      | 34.8              | 22.9               | 25.0                |
| 1985 | 28.5             | 18.9      | 43.0              | 28.5               | 31.3                |
| 1986 | 42.8             | 28.0      | 52.8              | 34.5               | 36.7                |
| 1987 | 42.8             | 29.3      | 47.5              | 32.5               | 35.2                |
| 1988 | 40.4             | 28.1      | 43.4              | 30.2               | 32.4                |
| 1989 | 39.1             | 26.8      | 40.2              | 27.5               | 30.0                |
| 1990 | 39.9             | 27.8      | 40.0              | 27.8               | 29.0                |
| 1991 | 37.8             | 25.9      | 37.2              | 25.5               | 27.5                |
| 1992 | 34.8             | 25.2      | 37.4              | 27.1               | 28.9                |
| 1993 | 34.0             | 24.5      | 34.2              | 24.6               | 26.6                |
| 1994 | 32.5             | 23.0      | 33.7              | 23.8               | 25.8                |
| 1995 | 22.8             | 13.9      | 94.3              | 57.6               | 1068.1              |
| 1996 | 35.5             | 23.9      | 99.9              | 67.3               | 163.0               |
| 1997 | 33.7             | 23.2      | 72.0              | 49.6               | 100.4               |
| 1998 | 33.5             | 23.0      | 58.4              | 40.2               | 67.9                |
| 1999 | 30.3             | 21.3      | 57.8              | 40.7               | 57.6                |
| 2000 | 33.3             | 23.0      | 55.6              | 38.3               | 53.9                |
| 2001 | 22.0             | 15.6      | 43.1              | 30.4               | 42.4                |
| 2002 | 26.0             | 19.1      | 52.5              | 38.6               | 61.5                |
| 2003 | 29.5             | 20.9      | 51.3              | 36.3               | 58.1                |

Source: Glaxo, Glaxo Wellcome, GlaxoSmithKline Annual Report and Accounts, various years

Table C1.12 Glaxo, Glaxo Wellcome and GlaxoSmithKline: operating analysis, 1980–2003

|      | External<br>purchases as<br>a % of sales | Internal costs<br>(value added)<br>as a % of sales | Labour costs<br>as a % of<br>internal costs | Depreciation<br>as a % of<br>internal costs | Cashflow<br>compared<br>with internal<br>costs (value<br>added) |
|------|------------------------------------------|----------------------------------------------------|---------------------------------------------|---------------------------------------------|-----------------------------------------------------------------|
|      | %                                        | %                                                  | %                                           | %                                           | %                                                               |
| 1980 | 62.6                                     | 37.4                                               | 64.9                                        | 7.6                                         | 35.1                                                            |
| 1981 | 61.0                                     | 39.0                                               | 62.9                                        | 6.7                                         | 37.1                                                            |
| 1982 | 57.8                                     | 42.2                                               | 56.6                                        | 6.6                                         | 43.4                                                            |
| 1983 | 57.0                                     | 43.0                                               | 50.7                                        | 6.8                                         | 49.3                                                            |
| 1984 | 54.1                                     | 45.9                                               | 46.2                                        | 6.0                                         | 53.8                                                            |
| 1985 | 46.7                                     | 53.3                                               | 39.4                                        | 5.2                                         | 60.6                                                            |
| 1986 | 25.5                                     | 74.5                                               | 29.7                                        | 4.0                                         | 70.3                                                            |
| 1987 | 30.5                                     | 69.5                                               | 29.6                                        | 4.5                                         | 70.4                                                            |
| 1988 | 32.1                                     | 67.9                                               | 30.4                                        | 5.2                                         | 69.6                                                            |
| 1989 | 31.3                                     | 68.7                                               | 30.4                                        | 5.3                                         | 69.6                                                            |
| 1990 | 28.4                                     | 71.6                                               | 31.6                                        | 5.7                                         | 68.4                                                            |
| 1991 | 28.6                                     | 71.4                                               | 33.5                                        | 6.2                                         | 66.5                                                            |
| 1992 | 34.0                                     | 66.0                                               | 34.9                                        | 7.1                                         | 65.1                                                            |
| 1993 | 34.3                                     | 65.7                                               | 36.7                                        | 7.0                                         | 63.3                                                            |
| 1994 | 39.1                                     | 60.9                                               | 37.8                                        | 8.2                                         | 62.2                                                            |
| 1995 | 48.5                                     | 51.5                                               | 47.5                                        | 9.9                                         | 52.5                                                            |
| 1996 | 39.4                                     | 60.6                                               | 36.9                                        | 8.1                                         | 63.1                                                            |
| 1997 | 40.3                                     | 59.7                                               | 38.4                                        | 7.8                                         | 61.6                                                            |
| 1998 | 40.5                                     | 59.5                                               | 38.1                                        | 7.5                                         | 61.9                                                            |
| 1999 | 42.5                                     | 57.5                                               | 41.8                                        | 7.4                                         | 58.2                                                            |
| 2000 | 38.8                                     | 61.2                                               | 40.5                                        | 6.6                                         | 59.5                                                            |
| 2001 | 51.7                                     | 48.3                                               | 47.4                                        | 7.7                                         | 52.6                                                            |
| 2002 | 47.8                                     | 52.2                                               | 44.6                                        | 6.9                                         | 55.4                                                            |
| 2003 | 43.9                                     | 56.1                                               | 42.1                                        | 6.4                                         | 57.9                                                            |

Source: Glaxo, Glaxo Wellcome, GlaxoSmithKline Annual Report and Accounts, various years

Note: Value added is sales revenues less external purchases. It is equivalent to operating profit plus depreciation plus labour costs (and this is usually how it is calculated given that external purchases are not normally separately disclosed in company accounts)



Sales split by therapeutic area

*Sales split by therapeutic area*

*Source:* Annual report and accounts, various years  
*Note:* In 1980, pharma total sales includes sales from the foods division