Pharmaceutical Marketing and Research Spending: The Evidence Does Not Support PhRMA's Claims

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Prescription drug pricing policy debates often revolve around the impact of reform proposals on drug makers' ability to conduct research. Brand name drug companies usually describe research and development as their top priority, and a bigger focus of their spending than marketing and advertising. We'd like to offer some evidence about the industry's claims and what drug makers are really spending their money on.

We'll touch on two main areas:

- the drug makers' commitment of resources to marketing and to R&D, and
- research spending of U.S. firms compared with those in other nations.

And we'll offer a final note about profits.

<u>Research and marketing</u>

First, the pharmaceutical industry association, PhRMA, asserts that its members spent 20 percent of their sales revenues on R&D in 1997 and 1998, and 18.5 percent this year (up from 16 percent in 1990). [1]

But it's hard to see how this can be. We see real reasons to question their figures.

Last year, a colleague looked at annual reports of six of the biggest drug makers, and found that just 11 percent of revenues went for R&D in those firms. [2] (See Exhibit 1, "How Six Drug Makers Spent Their Money, 1999," included at end of paper.)

That's far below the 18.5-20.0 percent levels that the industry says it devotes to R&D. We suggest that the drug makers need to explain the disparity—why does the evidence from their own annual reports show a much lower share of revenue for research than the industry claims?

Further, according to these firms' annual reports,

- 16 percent of revenues was taken as profit, and
- 31 percent went for marketing and administration.

That's nearly three times as much as their R&D spending.

This is actually a long-standing pattern. In the 1950s, Senator Estes Kefauver's investigation found that drug companies spent 24 percent of revenue on promotion—four times their spending on research.[3]

The share spent on R&D in those six firms in 1999 was matched in a recent Kaiser Foundation analysis which looked at the 10 largest firms in 1998, again finding 11 percent of sales going to R&D—and finding similar percentages over the whole decade.[4] Comparable figures were reported for 2000 by Public Citizen[5] and Families USA.[6]

Analyses of drug makers' financial data often have noted that the share of revenues being spent on R&D is just one-half to one-third the share spent on marketing, advertising and administration combined.[7]

Another way to measure the industry's priorities is by employment. And that permits not only looking at drug makers' commitment to R&D, but also separating out administration from marketing. We find that U.S.-based brand name drug companies, by their own data,[8] have fewer employees in R&D than in marketing alone.

PhRMA reported that in 1995 there were about 49,000 workers in research and development, and 55,000 in marketing. Through much of the 1990s, R&D employment at PhRMA member firms was essentially stable.

But between 1995 and 2000, <u>the number of people they employed in marketing rose by more than 30,000</u>, or an astounding 59 percent—from 55,000 to over 87,000. (See Exhibit 2, "R&D and Marketing Employment, 1995 and 2000.") The vast majority of these 87,000 marketing employees are apparently sales people, the detailers promoting drugs to physicians, HMOs, and other providers.

The next exhibit, again from the industry association's own data, shows the number of people in all the major job categories in pharmaceutical firms over a slightly longer period. Marketing is the largest category and the only one that has been rising substantially. (See Exhibit 3, "Marketing, Research, and Other Employment, 1993-2000.")

Strikingly, given the industry's claims about their ever-growing research efforts, their R&D employment was actually slightly higher in the mid-1990s than it was in 1999 and 2000. Marketing alone is where the brand name drug makers have been expanding employment.

And as Exhibit 3 made clear, marketing also is by far the largest job category. This is one reason to suspect that marketing expenses make up the majority of that combined marketing and administration spending category that we saw earlier, and that the industry typically includes in its financial reports.

The industry might reply that they have begun contracting out substantial amounts of their R&D work, and that only direct employees are included in these numbers. But a number of the brand name drug makers also use outside contracted sales forces to supplement their own detailers. These direct employment numbers also don't count the people at the advertising agencies that the drug makers use. Direct employment may not be the whole picture either for R&D or for marketing, but it is certainly a reasonable measure to examine—and the one that the drug makers themselves report.

We suggest that U.S. drug makers could readily boost their research funding by about $17 billion this year alone, by switching the share of revenue devoted to marketing with the share devoted to research.[9]

Do U.S. drug makers do extra R&D?

The brand name pharmaceutical industry in the U.S. constantly touts what it calls the international leadership of this country's drug companies in pharmaceutical research and development.

What does the evidence show? For several reasons, the U.S. might indeed be expected to contribute a large share of worldwide drug research:

- We have great economic resources.
- Our large population means we can send many people to college and graduate school to study chemistry and biology, and train and provide many scientists for research labs.
- Overall health care spending here is higher than in any other nation.
- By some estimates, Americans now make up over 40 percent of the worldwide pharmaceutical market, in terms of dollars of sales.[10] (See Exhibit 4, "The World's Pharmaceutical Market, 1999.")

But do U.S. drug makers in fact spend especially heavily on research? Consider this evidence from the industry's own data on drug company research in eight leading nations. PhRMA cites data from the Centre for Medicines Research, an industry-financed organization in Europe.[11] (See Exhibit 5, " Prescription Drug R&D Financed by Wealthy Nations' Drug Makers: National Shares of 8-Nation Total Spending, 1997.") PhRMA highlights US-based drug makers as the source of more investment in R&D than firms in any of these other seven wealthy developed nations— some of which are small nations, of course.

(Please note that the attribution of firms' research to particular nations may be fairly artificial at this point, given the drug makers' international operations. They may have labs in several countries working on a product. They may patent it first where they think it will be easiest or gain a large market share fastest. And they can attribute the research to whichever nation they choose.)

Among those eight nations, the U.S. is reportedly the source of 39 percent of the drug company-financed R&D, Exhibit 5 shows. But does this equal extra research, beyond what would be expected from the U.S.-based drug makers?

The next exhibit compares U.S. pharmaceutical firms' share of research in those eight nations with the U.S. share of several types of resources that would help support research. (See Exhibit 6, "Health Spending, GDP, Population, and Industry-Financed Drug Research: U.S. Share of Total for Eight Leading Nations, 1997.")

- We find that US drug makers' share of the company-financed R&D in those eight nations doesn't, for example, come close to equaling the U.S. share of the same nations' combined health care spending. The U.S. accounts for over 59 percent of all health spending in those eight nations taken together, but only 39 percent of the industry-financed drug research.

- And U.S. companies' 39 percent share of research spending doesn't come close to this country's 47 percent share of the eight nations' combined Gross Domestic Product.

- Indeed, American firms' share of company-financed R&D seems only proportionate to this nation's 40 percent share of those eight countries' population.

Thus, by each of several standards, drug companies here do not appear to do the extra research—the disproportionately large amount of research—that the industry claims.

High U.S. prices don't uniquely support U.S. drug makers' research. Drug makers from throughout the industrial world charge high prices in the U.S.—so any alleged greater research productivity of U.S. drug makers cannot be attributed to this nation's high prices.

A note on profits

Drug makers say they have to charge high prices to earn high profits to finance research, or else we'll all die.

In fact, the industry's widely-reported high profits don't pay for research. They are what drug makers retain after paying for research and all their other expenses.

It's useful to recognize that the profits on prescription drugs themselves are higher than is suggested by the published and publicized figures from their annual reports and *Fortune* 500 data.

Those figures are for each company as a whole. But many drug makers have some other lines of business with ow profit margins, which drag down the firm-wide average. For example, Merck reported a before-tax profit equal to 26.3 percent of revenue in 1999. But this includes revenues and profits on Merck's large Merck-Medco pharmaceutical benefit manager—a relatively low-margin operation.

How much did Merck make on its prescription drug business alone?

We found that in 1999 Merck garnered a 37.4 percent before-tax return on revenue on its prescription drug business. Thus, profits before taxes consumed more than one-third of every dollar that patients and insurors struggled to pay Merck for prescription drugs.

And that 37.4 percent profit on prescription drugs alone is more than two-fifths greater than the consolidated, firm-wide profit figure that Merck reports.[12] (Exhibit 7, “Merck Firm-Wide and Pharmaceutical Segment Return.”)

Whether the subject is marketing, R&D, or profits, there’s clearly good reason to treat cautiously all the figures that PhRMA publicizes. It’s vital to dispel the smoke behind which drug makers hide their enormous marketing operations and enormous profits, to the detriment of the research and affordable medications that we all need.

EXHIBIT 1

HOW SIX DRUG MAKERS SPENT THEIR MONEY, 1999

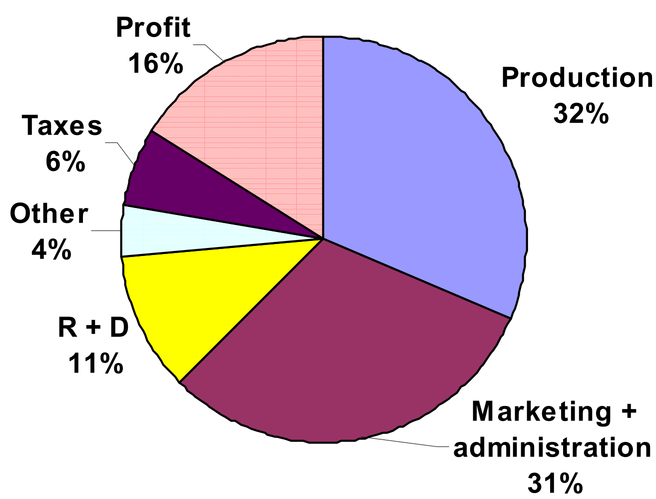


EXHIBIT 2

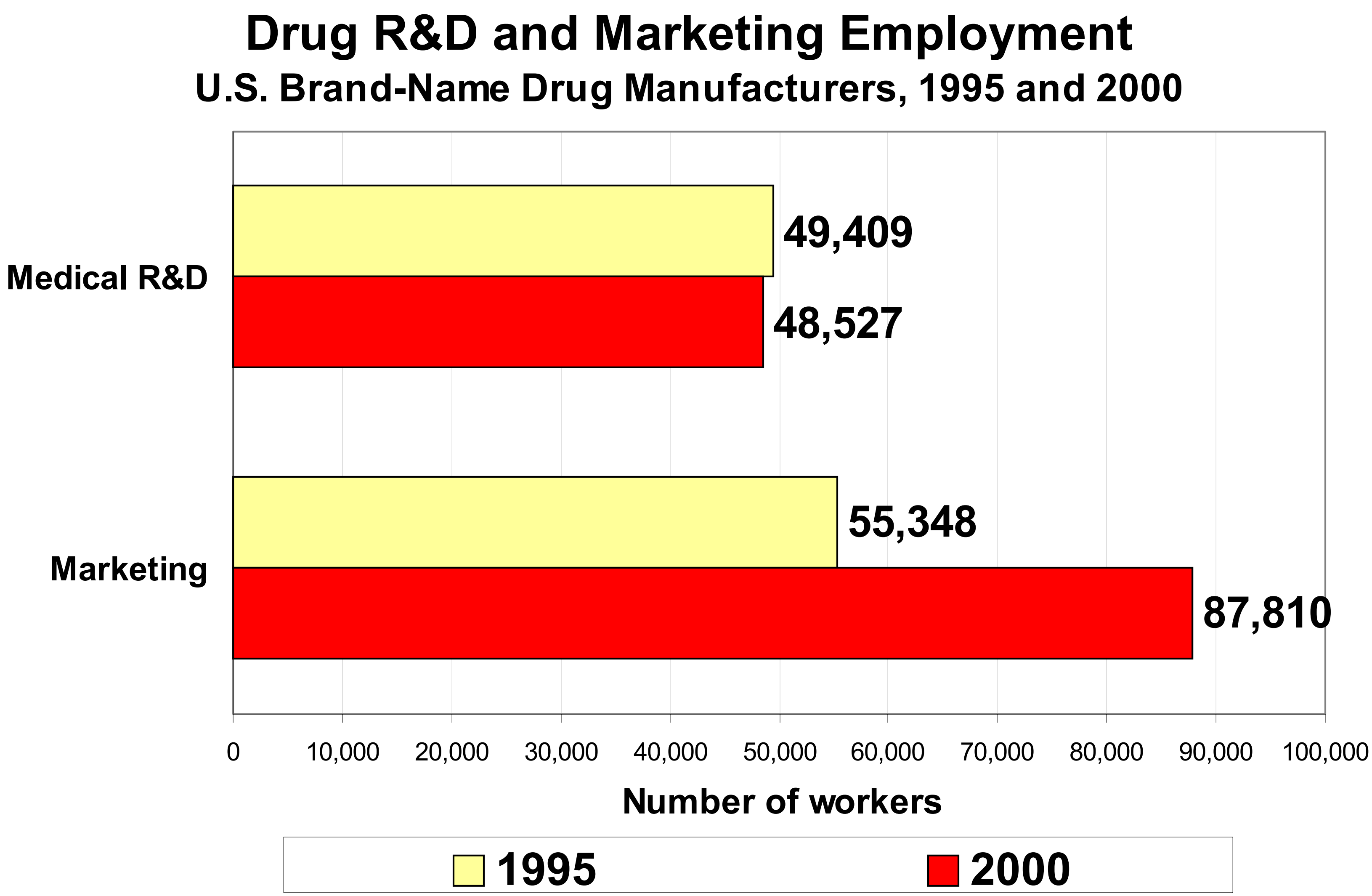

Drug R&D and Marketing Employment
U.S. Brand-Name Drug Manufacturers, 1995 and 2000
Medical R&D
Marketing
49,409
48,527
55,348
87,810
0
10,000
20,000
30,000
40,000
50,000
60,000
70,000
80,000
90,000
100,000
Number of workers
1995
2000

EXHIBIT 3

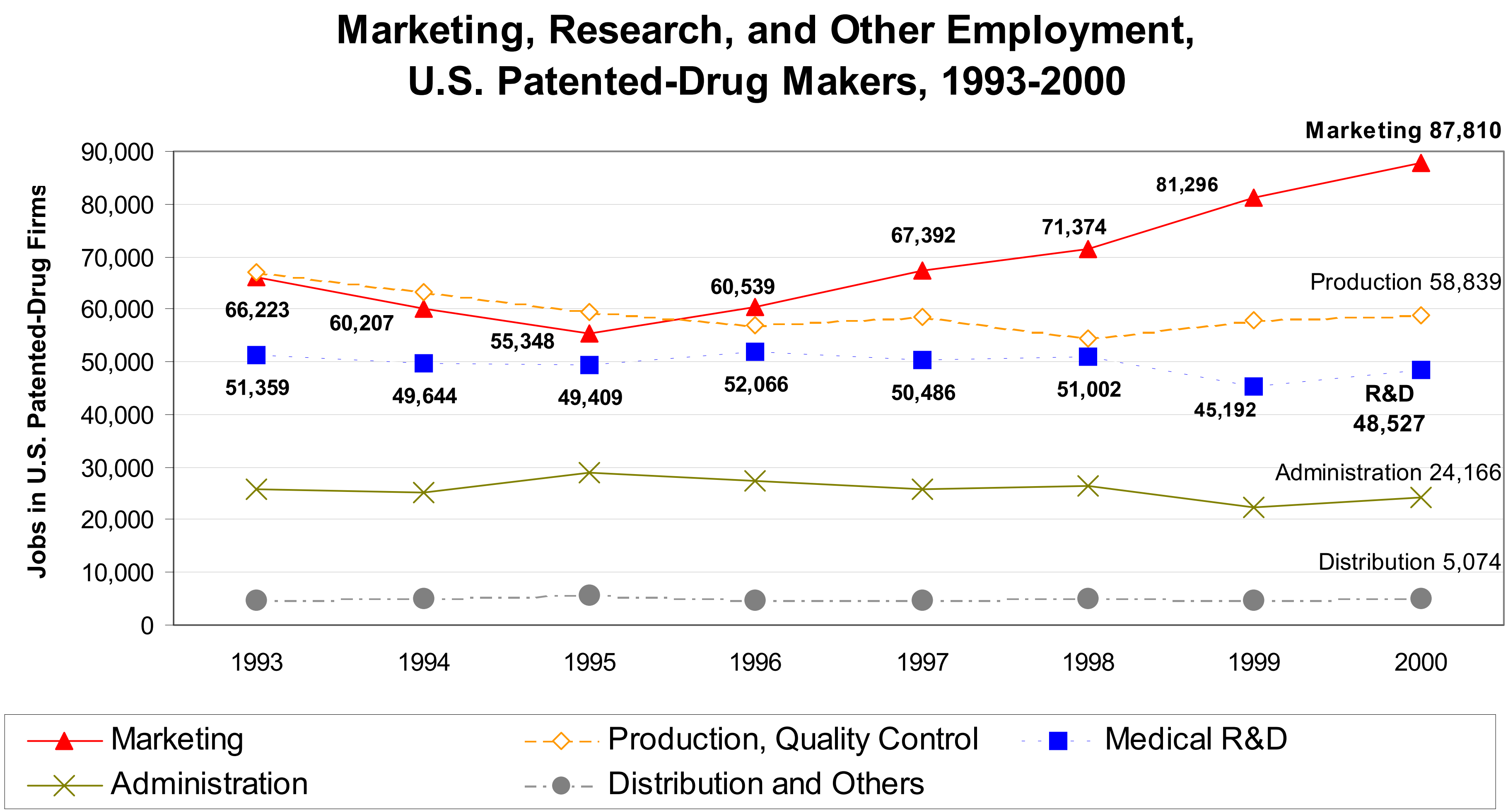
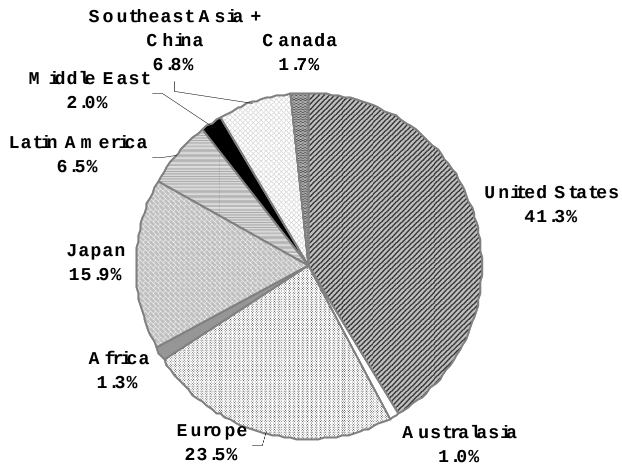

Marketing, Research, and Other Employment,
U.S. Patented-Drug Makers, 1993-2000
Jobs in U.S. Patented-Drug Firms
90,000
80,000
70,000
60,000
50,000
40,000
30,000
20,000
10,000
0
1993
1994
1995
1996
1997
1998
1999
2000
Marketing 87,810
81,296
71,374
67,392
60,539
66,223
60,207
55,348
Production 58,839
51,359
49,644
49,409
52,066
50,486
51,002
45,192
R&D
48,527
Administration 24,166
Distribution 5,074
Marketing
Production, Quality Control
Medical R&D
Administration
Distribution and Others

EXHIBIT 4

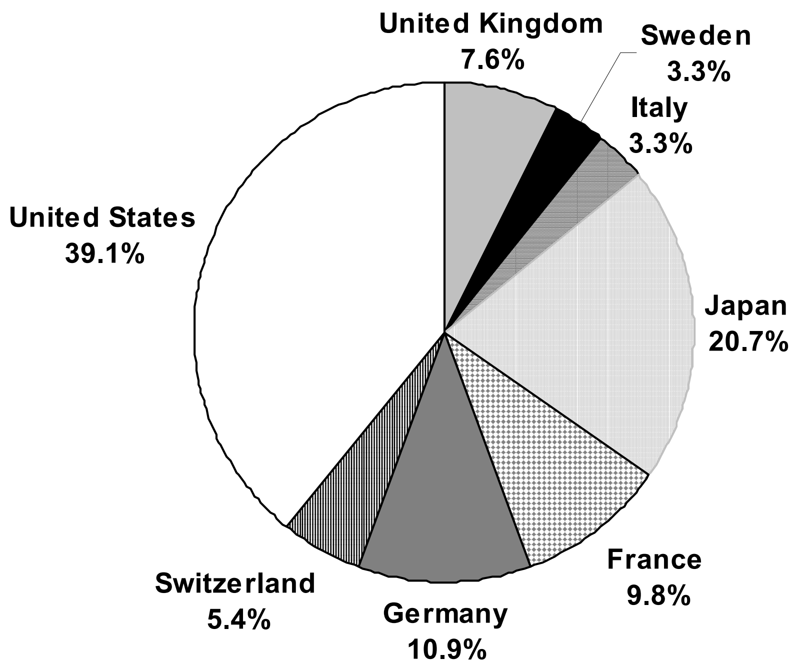
World Pharmaceutical Market, 1999



Source: IMS Health data cited in PhRMA, *Pharmaceutical Industry Profile 2001*, July 2001, Chapter 7, Figure 7-2.

EXHIBIT 5

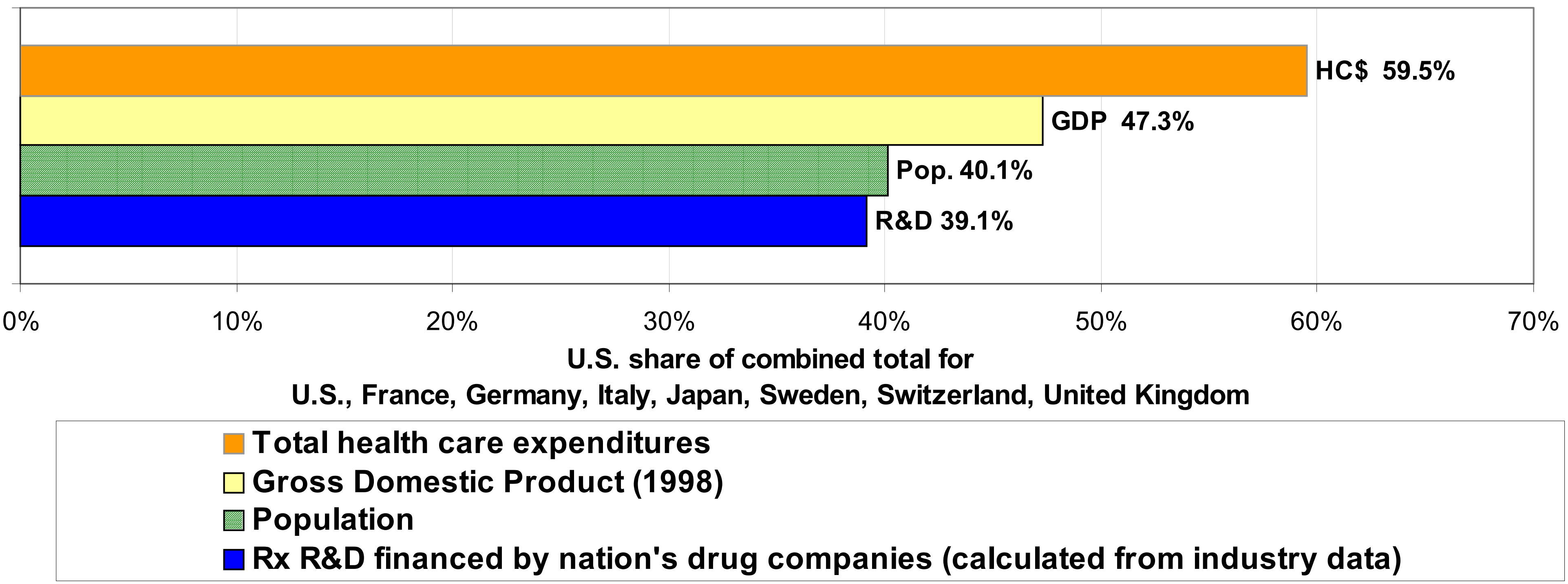
Prescription Drug R&D Financed by Wealthy Nations' Drug Makers: National Shares of 8-Nation Total Spending, 1997



Source: Calculated from data cited in PhRMA, *Pharmaceutical Industry Profile 2001*, Chapter 7, Fig. 7-1.

EXHIBIT 6

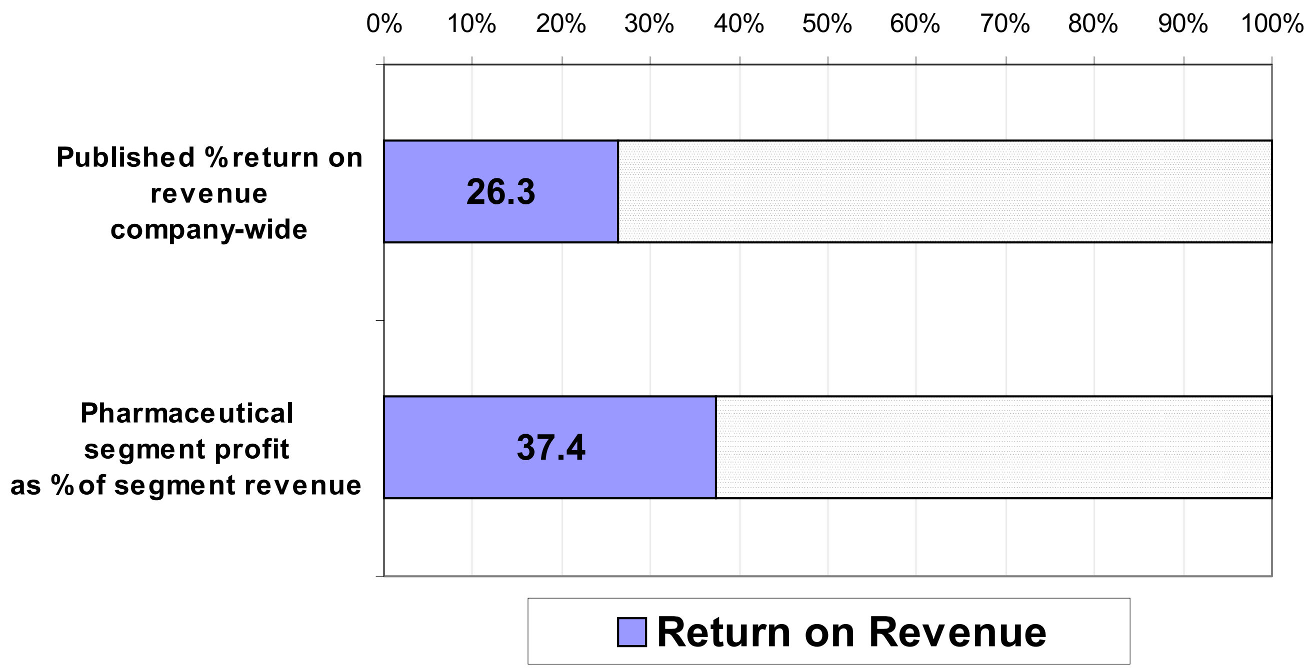
Health Spending, GDP, Population, and Industry-Financed Drug Research: U.S. Share of Total for Eight Leading Nations, 1997



Source: OECD, and research shares calculated from data cited in PhRMA, *Pharmaceutical Industry Profile 2001*, Chapter 7, Fig. 7-1.

EXHIBIT 7

Merck Firm-Wide and Pharmaceutical Segment Return on Revenue, 1999



NOTES

[1] Pharmaceutical Research and Manufacturers of America, *Industry Profile 2001*, Chapter 2, Figure 2-2, and Appendix, Table 2, http://www.phrma.org/publications/publications/profile01/

[2] As reported in Alan Sager and Deborah Socolar, *A Prescription Drug Peace Treaty,* Boston: Health Reform Program, Boston University School of Public Health, 5 October 2000, p. 30 and Exhibit 10, http://dcc2.bumc.bu.edu/hs/ushealthreform.htm. The data were compiled from an opportunity sample of seven large drug companies (now merged into six) whose financial reports were readily on-hand. The drug makers are Merck, Pfizer plus Warner-Lambert (which have merged), Bristol-Meyers-Squibb, American Home Products, Lilly, and Schering-Plough. We are grateful to Robert DeNoble for his careful work in compiling and reducing the financial data.

The firms' combined 1999 revenue was $114.8 billion. The firms are generally representative of the industry, as shown by their combined returns on equity and returns on revenue, which were very close to the industry medians for large drug makers reported in the *Fortune* 500. The six firms' 1999 weighted average returns on equity were 35.5 percent versus an industry median of 35.6 percent. The six firms' 1999 weighted average returns on revenue were 16.2 percent, slightly below the industry median of 18.6 percent. Pharmaceutical industry medians for 1999 were reported at http://www.fortune.com/fortune/fortune500/.html, accessed September 2000.

[3] Morton Mintz, "Still Hard to Swallow," Washington Post, 11 February 2001. Accessible online at http://www.biohope.org/media/article_print.cfm?articleid=1032&state=na

[4] Kaiser Family Foundation, *Prescription Drug Trends: A Chartbook*, July 2000, p. 65, and Figures 4.5 and 4.6, http://www.kff.org/content/2000/3019/PharmFinal.pdf

[5] See Public Citizen's Congress Watch, *Drug Industry Most Profitable Again*, Washington, DC: Public Citizen, 11 April 2001, http://www.citizen.org/congress/reform/drug_industry/profits/articles.cfm?ID=838 This report on data for 2000 noted that Fortune 500 drug companies devoted 30 percent of revenues to marketing and administration and 12 percent to R&D

[6] Families USA, *Off the Charts: Pay, Profits and Spending in Drug Companies*, Washington, DC: Families USA, 10 July 2001, http://www.familiesusa.org/media/press/2001/drugceos.htm

[7] One caution is worth noting—sometimes such findings are misquoted, as if marketing spending alone were 2-3 times the share going to R&D. Companies' annual reports usually include their administrative costs in with their marketing and advertising expenditures, and it is those combined marketing and administration figures that are double or triple the research funding.

[8] Pharmaceutical Research and Manufacturers of America, *Pharmaceutical Industry Profile 2001*, “Appendix – Detailed Results from PhRMA Annual Survey,” July 2001, Table 18, http://www.phrma.org/publications/publications/profile01/appendix1.phtml

[9] Alan Sager and Deborah Socolar, *Prescription Drug Spending is Already Enough to Buy All the Drugs All Americans Need*, presentation at American Public Health Association annual meeting, 13 November 2000.

[10] Data from IMS Health, 2001, as cited in PhRMA, *Pharmaceutical Industry Profile 2001*,July 2001, Chapter 7, “The Global Perspective,” Figure 7-2, http://www.phrma.org/publications/publications/profile01/chapter7.phtml

[11] See PhRMA, *Pharmaceutical Industry Profile 2001*,July 2001, Chapter 7, “The Global Perspective,” Figure 7-1,
http://www.phrma.org/publications/publications/profile01/chapter7.phtml
Those data show the distribution of total pharmaceutical company-financed R&D for 1997 in eight countries, with an additional eight percent of the worldwide total coming from “other” countries. Calculated from those figures, ours simply reflect the distribution among the eight named countries.

[12] Alan Sager and Deborah Socolar, *Prescription Drug Spending is Already Enough to Buy All the Drugs All Americans Need*, presentation at American Public Health Association annual meeting, 13 November 2000.