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CUTTING PRESCRIPTION DRUG SPENDING BY PAYING FEDERAL SUPPLY SCHEDULE PRICES

SAVINGS IN SIX SOUTHWEST STATES

**Arizona
California
Colorado
Nevada
New Mexico
Utah**

Alan Sager, Ph.D. and Deborah Socolar, M.P.H.
Professor of Health Services Research Analyst

Health Reform Program
Boston University School of Public Health
715 Albany Street
Boston, Massachusetts 02118

phone (617) 638-5042
fax (617) 638-5374
asager@bu.edu, dsocolar@bu.edu

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SUMMARY

The six southwestern states of the U.S. can win much lower drug prices and make all needed medications affordable for all citizens without harming drug makers' research—or even their profits—and without spending more money.

PART I of this report finds that:

- Fully 14.1 million residents of the six states—Arizona, California, Colorado, Nevada, New Mexico, and Utah—have no insurance for prescription drugs, we estimate. Many others have very inadequate insurance.
- Cutting manufacturers' prices is essential to making medications affordable for all. Alternatives— such as continued increases in private insurance spending and public subsidies, or voluntary private health insurance—are unaffordable and unworkable.
- This year, residents of the six states will pay manufacturers some \$12.0 billion for brand name prescription drugs, taking into account an estimated \$1.2 billion in discounts and rebates now granted to some purchasers (8.9 percent of the pre-discounted figure).
- **Cutting brand name prescription drug makers' prices to Federal Supply Schedule (FSS) prices, we calculate, would win added savings of about \$4.3 billion this year in the six states.** These would be the savings, by state, in millions of dollars:

Arizona	\$518.3
California	\$2,888.3
Colorado	\$367.0
Nevada	\$185.7
New Mexico	\$153.9
Utah	\$233.6
total, six southwest states	\$4,346.8

- The six states' saving of \$4.3 billion would be one-eighth of the national total of \$35 billion in savings that Americans would enjoy if all of us paid FSS prices.
- Payments to brand name prescription drug makers from the six states would then drop from this year's \$12.0 billion to roughly \$7.6 billion. That would save 37 percent of current payments.
- Of the \$4.3 billion in new savings this year, slightly over half would go to people with private third party insurance, with the rest divided among people who pay out of pocket, people on Medicaid, and non-retail buyers like hospitals and nursing homes.
- Instead of a 42 percent average FSS discount, different standards could be used, such as the prices paid for the same drugs from the same makers in other nations.
- In 1997-98, in seven wealthy nations, we calculate, drug makers charged from 24 percent below their U.S. prices (in Switzerland) to 48 percent below (in Italy).

Part II of this report finds that:

- The six southwestern states could assure that all their people get the medications they need, while drug makers receive the same total revenue as before price cuts—plus payment to cover the cost of making more drugs to fill the higher volume of prescriptions. Several things combine to make this possible:
 - Drug prices and spending per person here are the world’s highest. **We spend enough already to cover the cost of all needed medications.**
 - The six states’ combined buying power—greater than France’s and perhaps close to Germany’s—gives them a great opportunity to make all needed medications affordable for all. States could also act individually, or in clusters.
 - If drug prices were cut to Federal Supply Schedule levels, an average 42 percent drop from current posted factory prices, manufacturers would suffer a substantial revenue loss at first.
 - But the volume of prescriptions filled would rise as prices fell because more people would be able to afford to fill their prescriptions, offsetting much of the lost revenue.
 - Also, the lower prices would make it much easier to expand government programs for people who can’t afford even the lower prices, further raising the volume of prescriptions filled, and replacing the remainder of the lost revenue.
 - The real cost of making more pills averages perhaps 5 percent of the retail dollar.
 - Drug makers could cut their wasteful marketing and advertising costs.
- Drug makers use scare tactics to threaten that price cuts would destroy research. We explain why that is false. Lower prices are compatible with research and high profits. Better, lower overall prices could be combined with generous rewards for breakthrough drugs to spark more investment in vital research and less investment in marketing.
- Drug makers’ huge profits year after year mean that the industry is not very risky.
- Drug makers’ high prices and huge profits result from monopoly and market power, not from free market competition. There is no genuine free market for prescription drugs.
- The industry makes dubious claims about industry-financed research, we find.
- Until now, federal and state governments have failed to protect citizens against high prices. If governments fail to act to cut drug prices, more and more citizens won’t be able to afford life-saving medications.
- State legislation is important. It can protect citizens today while helping to spark federal efforts tomorrow.

CONTENTS

Summary	i
Contents	iii
List of Exhibits	iv
INTRODUCTION	1
Part I CURRENT SPENDING AND POTENTIAL SAVINGS ON PRESCRIPTION DRUGS IN SIX SOUTHWEST STATES	3
A. Findings	3
B. Prices Elsewhere Are Lower	10
C. Why Focus on Manufacturers' Prices	12
D. Causes of High U.S. Drug Prices	16
Part II SAVING MONEY AND SAVING LIVES WITHOUT HURTING THE DRUG MAKERS' FINANCES OR THEIR RESEARCH	17
A. Revenue Growth to Offset Price Cuts	17
B. Cost to Manufacturers of Providing Higher Volumes of Drugs	19
C. Will Lower Prices Damage Research?	21
D. Only Government Action Can Protect the Public	24
E. Our Governments Must Act Carefully, But They Must Not Remain Paralyzed	26
APPENDIX ON METHODS	30
NOTES	36

LIST OF EXHIBITS

	Page
1. Residents of Six Southwest States Lacking Insurance for Prescription Drugs, 2000	1
2. Payments to Prescription Drug Manufacturers, 2000, Before and After Various Discounts and Rebates, Six Southwest States	4
3. Prescription Drug Payments and Savings, Six Southwest States, 2000	5
4. Payments to Prescription Drug Manufacturers, Before and After Various Discounts and Rebates, Six Southwest States and U.S.A., 2000	6
5. Estimated Spending on Brand Name Prescription Drugs, by Payor and State, 2000	7
6. Estimated Savings on Brand Name Prescription Drugs, 2000, by Payor and State, If Federal Supply Schedule Prices Prevailed	8
7. Prescription Drug Payments, Discounts, and Rebates, Six Southwest States, 2000	9
8. Prices Paid To Drug Makers In Eight Nations: Percentage of U.S. Prices	10
9. Retail Prescription Drug and Health Spending, U.S., Percent Rise from 1994	12
10. Total Health Spending, O.E.C.D. Nations and U.S. States, 1996	27
A-1. Medicaid Prescription Drug Rebate Percentages, by State, 1998	33

INTRODUCTION

Members of the New Mexico Legislative Health and Human Services Committee—
 Good afternoon. I am honored by your invitation to appear before you today.

This report’s conclusion is stark: New Mexico and other southwest states can win much lower prescription drug prices and make all needed medications affordable for all citizens without harming drug makers’ research—or even their profits—and without spending more money.

The report’s purpose is to explain and document that conclusion.

Many citizens of New Mexico and other southwest states can’t afford needed medications. **Exhibit 1** displays new estimates of the number and percentage of people in each of these six states who lack any insurance for prescription drugs.¹

Exhibit 1

Residents of Six Southwest States Lacking Insurance for Prescription Drugs, 2000 (thousands)

	Age 65+	Uninsured	Privately Insured/No Drug Coverage	TOTAL Lacking Drug Coverage	PERCENT Lacking Drug Coverage	RANK on % Lacking Drug Coverage	Estimated Population 2000
Arizona	226	1,184	187	1,597	33%	1	4,892
California	1,297	7,429	1,313	10,039	30%	3	33,614
Colorado	146	626	201	974	24%	27	4,145
Nevada	75	398	84	557	30%	4	1,877
New Mexico	70	368	67	505	29%	5	1,746
Utah	66	300	108	474	22%	35	2,160
Six-state total	1,881	10,305	1,960	14,145	29%		48,434
% of six states	13.3%	72.9%	13.9%	100.0%			
United States	12,226	44,850	11,990	69,066	25%		275,156

Fully 14 million citizens of the six states (29.2 percent) lack any insurance for prescription drugs, we find. This is well above the U.S. average of 25.1 percent. **Four of the states rank among the top five states nationally in share of residents lacking prescription drug insurance.**² In the southwest, the share of people without insurance for prescription drugs ranges from a low of 22 percent in Utah to a high of 33 percent in Arizona.

Millions of others have grossly inadequate insurance.

It is worth noting that, in these six southwest states, seniors comprise slightly less than one-seventh (13.3 percent) of those lacking any insurance for prescription drugs. This means that even if Congress enacts a Medicare prescription drug benefit, over twelve million residents of the six states would still be without coverage.

People who are entirely uninsured are the largest group who now have no drug coverage. And in most of these states, as Exhibit 1 shows, the number of seniors lacking drug coverage is nearly matched by—or even exceeded by—the number of people under age 65 with private health insurance who have no prescription drug coverage.

Without adequate insurance, and unable to afford needed medications, many residents of the six states suffer avoidable pain and disability, and premature death.

The people of each of the six states already spend enough to cover the cost of all needed drugs.

That makes the suffering a tragedy.

You have three choices in the face of this tragedy:

- allow people to suffer and die for lack of needed medications, but that is intolerable;
- spend more public or private money—or both—to buy needed drugs, but that is both unaffordable and unnecessary; or
- secure more drugs from manufacturers for the amount already spent.

Some people would resolve the tragedy by throwing more money at the world's drug makers. But where would that money be found? Businesses, citizens, insurers, HMOs, and governments face many other pressing demands. They know they cannot continue to boost drug spending. Just as important, the drug makers simply don't need more money. They may want it, but they absolutely don't need it. Not to finance life-saving research, and not to produce the extra drugs that citizens of your state are dying for.

The challenge is to make all needed medications affordable and available to all without spending more money.

This requires cutting drug prices. And that means cutting the prices charged by manufacturers, because they are the source of high prices, because they garner roughly three-fourths of each dollar paid for medications, and because the retail sector has already been squeezed by existing price-cutting efforts.

(The only alternatives to cutting drug prices are to cut use of drugs, or to channel patients and doctors toward less expensive drugs. While these can do some good, they can also be cumbersome or counter-productive—if, for example, they block access to useful drugs.)

Some hope that voluntary purchase of private health insurance, perhaps with public subsidies, will render it unnecessary to cut drug prices. The insurance industry does not want to write those policies, because they fear that sicker people will be more likely to buy policies. Such adverse selection will drive up average costs and premiums, and embarrass

all involved.³ The private health insurers are right this time.⁴ Voluntary prescription drug insurance purchase is doomed. Even if it worked—even if adverse selection magically did not operate—soaring drug prices would quickly make it unaffordable.

This report is divided into two main parts.

In the first part, we present new evidence on current spending on prescription drugs in each of six southwestern states. This evidence concerns the dollars paid to drug makers by or for the residents of each of your states. We will describe current payments. These are payments that reflect existing discounts and rebates from manufacturers—both public and unreported. Our estimates rest on the bedrock of drug makers' own data on their revenues.

Then, we will show the savings that would be won if each of the six states acts to lower drug prices. The savings reflect the prices that would be paid to manufacturers if each state paid the prices already available to the Veterans Administration through the Federal Supply Schedule (FSS). The FSS prices reflect an average 42 percent discount from drug makers' factory prices.

In the second part, we show that these lower prices can be part of a package that would absolutely maintain the drug makers' total revenue, their profits, and therefore their ability to finance needed research.

In other words, states can act—individually or together—to protect their citizens without hurting the drug makers, and without increasing drug spending. This may seem impossible. It is not. Protecting people without raising drug spending is made possible by some remarkable financial opportunities and advantages, which we will describe.

Drug makers claim that government actions that interfere with either their prices or their profits will cause destruction and devastation. They are wrong. The sky will not fall. Instead, controlling drug prices, in order to make medications affordable for all Americans, offers the best possible durable protection for drug makers' research and revenue.

PART I. CURRENT SPENDING AND POTENTIAL SAVINGS ON PRESCRIPTION DRUGS IN SIX SOUTHWEST STATES

A. FINDINGS

This year, private insurers, government programs, hospitals, nursing homes, and individual citizens of the six states will together pay the world's drug makers some \$12.0 billion for brand name prescription drugs, we calculate. This figure takes into account both publicized and unreported discounts on manufacturers' prices, and rebates from manufacturers to various purchasers. (The methods employed to prepare these data are described in detail in the Appendix.)

Total spending on prescription drugs is even higher. The \$12.0 billion does not include:

- wholesalers' or retail pharmacies' share of drug spending, or
- payments for generic drugs.⁵

Exhibit 2 shows that total payments from the six states' residents to manufacturers for brand name prescription drugs in the year 2000 would have been roughly \$13.1 billion if no discounts or rebates existed.

We have calculated that savings from existing discounts and rebates from manufacturers will total some \$1.2 billion this year. The \$1.2 billion is an average saving of 8.9 percent of the pre-discounted figure. Some payors save money, while others—such as people lacking drug coverage—typically pay full price today.

Actual payments to manufacturers for brand name drugs this year are estimated at \$12.0 billion.

We have further calculated that raising discounts to the levels now achieved under the Federal Supply Schedule (FSS) would win additional savings of about \$4.3 billion.

That is an additional saving of 37.2 percent of actual payments to manufacturers.

As a result, all people would pay the same price for a drug, regardless of their insurance coverage. That is fair.

The combined savings equal roughly \$5.5 billion, or 42.0 percent of undiscounted prices.

This would reduce payments by residents of the six states to roughly \$7.6 billion this year. So the bottom line is that requiring the world's manufacturers to sell their brand name prescription drugs in all six states at the FSS prices—prices actually paid by the United States government—would save \$4.3 billion in the six states this year.

Exhibit 2

**PAYMENTS TO PRESCRIPTION DRUG MANUFACTURERS,
2000, BEFORE AND AFTER VARIOUS DISCOUNTS AND REBATES,
SIX SOUTHWEST STATES**

Payments to manufacturers before existing discounts + rebates	\$13.1 BILLION
- savings from existing manufacturers' discounts + rebates	- \$1.2 BILLION
= Actual payments to manufacturers after existing discounts + rebates	= \$12.0 BILLION
- extra savings from Federal Supply Schedule (FSS) prices	- \$4.3 BILLION
= Payments to manufacturers after winning FSS prices	= \$7.6 BILLION

Note: Each subtraction seems to be off by 0.1 billion; this apparent error is caused by rounding.

Exhibit 3 displays the information from Exhibit 2 in a graph:

- The first column shows what payments to manufacturers would be in the absence of the discounts and rebates that exist today, about \$13.1 billion.
- The second column subtracts out the \$1.2 billion in existing discounts and rebates from the \$13.1 billion, leaving \$12.0 billion, this year's actual payments to manufacturers.
- The third column subtracts out the \$4.3 billion in extra savings that the six states would win by paying FSS prices from the \$12.0 billion, leaving \$7.6 billion.
- The fourth column shows the \$7.6 billion that would be paid to drug makers. This assumes no rise in the volume of private or public purchases in response to price cuts.

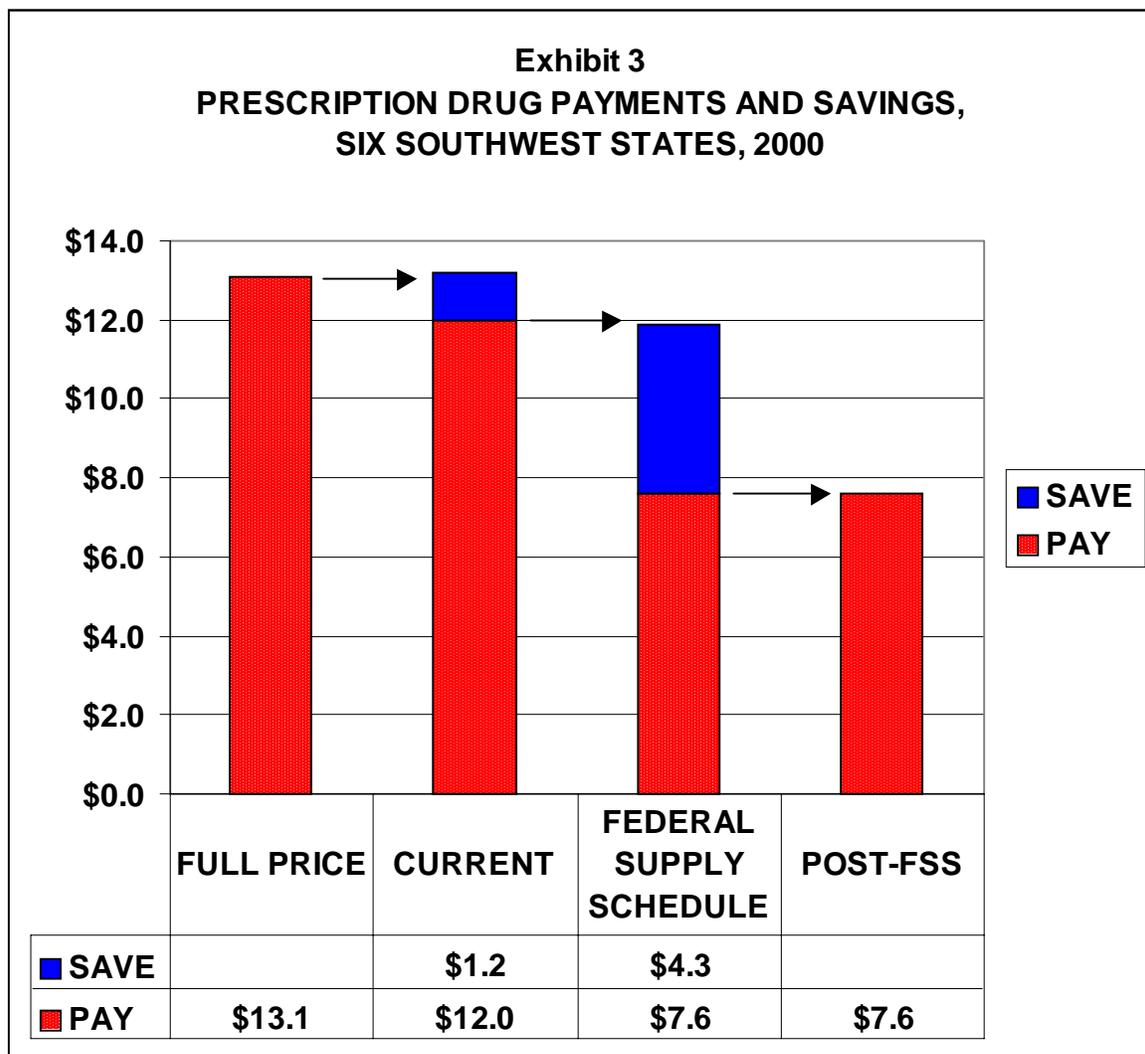


Exhibit 4 presents state-by-state calculations of the spending and saving data summarized in exhibits 2 and 3.

Together, the residents, employers, and governments of the six southwest states now buy some \$12.0 billion (\$11,996 million) worth of brand name prescription drugs from manufacturers, or almost one-eighth of the U.S. brand name total. Total payments this year range from \$433 million in New Mexico to \$8.0 billion in California.

Exhibit 4

**PAYMENTS TO PRESCRIPTION DRUG MANUFACTURERS,
BEFORE AND AFTER VARIOUS DISCOUNTS AND REBATES,
SIX SOUTHWEST STATES AND U.S.A.,
2000**

\$ Millions

	Est. Payments to Drug Makers before Existing <u>D + R</u>	Minus Savings from Existing <u>D + R</u>	Equals Actual Payments to Drug Makers after Existing <u>D + R</u>	Minus Additional Savings If Pay <u>FSS Prices</u>	Equals Payments to Drug Makers if Pay <u>FSS Prices</u>
Arizona	\$1,512	\$117	\$1,395	\$518	\$877
California	\$8,840	\$825	\$8,016	\$2,888	\$5,127
Colorado	\$1,078	\$86	\$992	\$367	\$625
Nevada	\$543	\$42	\$500	\$186	\$315
New Mexico	\$481	\$48	\$433	\$154	\$279
Utah	\$683	\$53	\$630	\$234	\$396
6 SW states	\$13,137	\$1,171	\$11,966	\$4,347	\$7,619
U.S.A.	\$105,462	\$8,947	\$96,515	\$35,347	\$61,168
6 SW states % of US	12.5%	13.1%	12.4%	12.3%	12.5%

Notes:

D + R = discounts and rebates

FSS = Federal Supply Schedule prices

Exhibit 5 divides this year's estimated total spending of \$12.0 billion on brand name prescription drugs among the four main groups of payors for each of the six states. Of the six-state brand name prescription drug total:

- Some \$2.6 billion (22.0 percent) will be paid in cash. This does not include additional cash for co-payments under third party private insurance—an increasingly important issue owing to rising co-payments.
- An additional \$7.0 billion (58.7 percent) will be paid for drugs bought through third party private insurance. This includes cash co-payments made by patients.
- A further \$942 million (7.9 percent) will be spent by state Medicaid programs. (The Arizona figure does not accurately reflect Medicaid prescription drug spending.)
- And a final \$1.4 billion (11.4 percent) is estimated to be spent by hospitals and nursing homes (non-retail purchasers).

It is worth noting that payors in the six states spent 12.4 percent of the U.S. total on brand name drugs, but fully 9.1 percent of drugs bought by Medicaid programs, where federal matching funds cover at least one-half of the cost.

Exhibit 5

**Estimated Spending on Brand Name Prescription Drugs,
by Payor and State, 2000**

\$ Millions

	<u>cash</u>	<u>3rd party</u>	<u>Medicaid</u>	<u>non-retail</u>	<u>Total</u>
Arizona	\$309	\$921	\$6	\$159	\$1,395
California	\$1,726	\$4,588	\$788	\$914	\$8,016
Colorado	\$234	\$603	\$42	\$113	\$992
Nevada	\$118	\$302	\$23	\$57	\$500
New Mexico	\$102	\$227	\$55	\$49	\$433
Utah	\$146	\$384	\$28	\$72	\$630
6 SW states	\$2,635	\$7,025	\$942	\$1,364	\$11,966
% of 6 SW states total	22.0%	58.7%	7.9%	11.4%	100.0%
U.S.A.	\$21,331	\$53,849	\$10,333	\$11,003	\$96,515
6 SW states % of US	12.4%	13.0%	9.1%	12.4%	12.4%

Exhibit 6 presents estimated savings by state and payment source, this year, if Federal Supply Schedule (FSS) prices prevailed for all payors in the six states. **Total savings in the six states would be over \$4.3 billion this year alone.** This is almost one-eighth of the nationwide savings of \$35.2 billion if all Americans paid FSS prices.

Savings would range from \$154 million in New Mexico to \$2.9 billion in California this year. As a proportion of current spending, savings vary—from 35.6 percent in New Mexico to 37.2 percent in Arizona.

Across payors, patients paying cash would enjoy the greatest percentage savings, 42.0 percent. Cash-payors typically receive no discounts or rebates now, so when FSS prices took effect, they would gain the average discount of 42.0 percent now received by the FSS.

Medicaid programs would gain the smallest percentage savings because they now enjoy the greatest rebates now, averaging 19.2 percent across the six states. Even so, the additional Medicaid discount would reach almost one-quarter of a billion dollars annually, or about 29.0 percent of actual current Medicaid prescription drug spending.

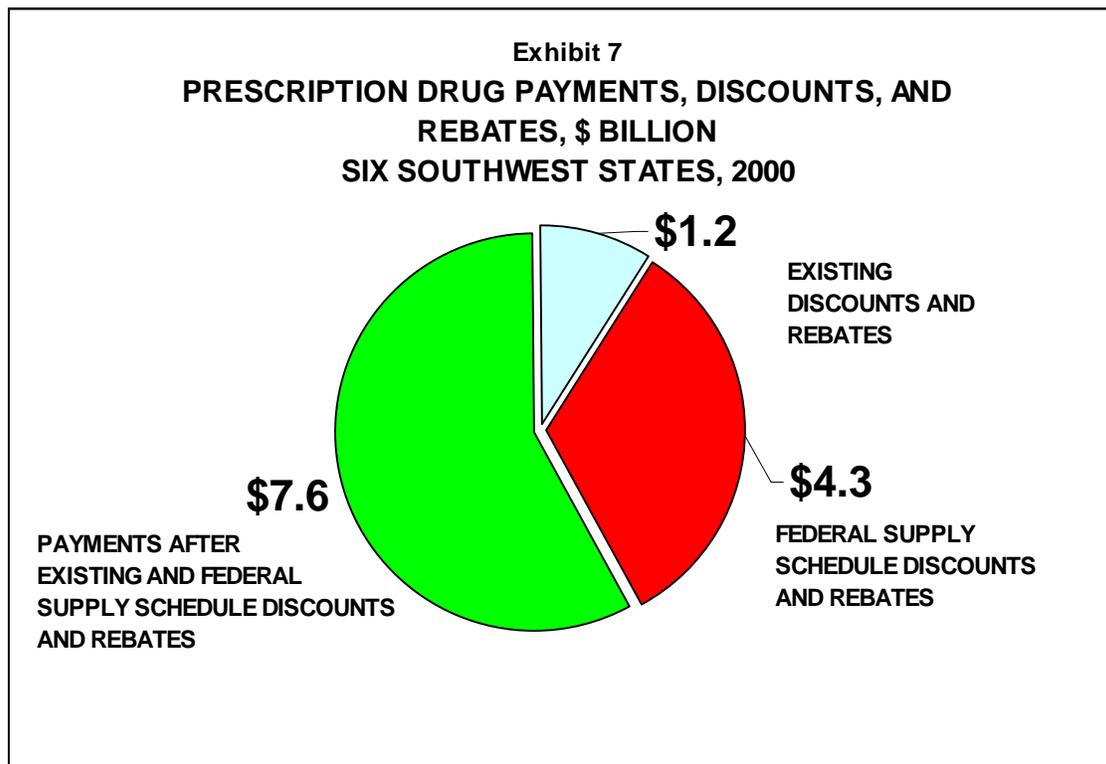
Other third party payors could expect to save about \$2.5 billion across the six states, more than one-third of their current spending.

Exhibit 6
Estimated Savings on Brand Name Prescription Drugs, 2000,
by Payor and State,
If Federal Supply Schedule Prices Prevailed
\$ Millions

	<u>cash</u>	<u>3rd party</u>	<u>Medicaid</u>	<u>non-retail</u>	<u>Total</u>	<u>Savings as % of current spending</u>
Arizona	\$130	\$327	\$2	\$59	\$518	37.2%
California	\$725	\$1,631	\$191	\$341	\$2,888	36.0%
Colorado	\$98	\$214	\$12	\$42	\$367	37.0%
Nevada	\$50	\$107	\$7	\$21	\$186	37.1%
New Mexico	\$43	\$81	\$12	\$18	\$154	35.6%
Utah	\$61	\$137	\$9	\$27	\$234	37.1%
6 SW states	\$1,107	\$2,498	\$234	\$509	\$4,347	36.3%
% of 6 SW states	25.5%	57.5%	5.4%	11.7%	100.0%	
% of payor's spending	42.0%	35.6%	29.0%	37.3%	37.2%	
U.S.A.	\$8,959	\$19,146	\$2,997	\$4,104	\$35,206	36.5%
6 SW states % of US	12.4%	13.0%	7.8%	12.4%	12.3%	

Exhibit 7 summarizes the changes in prescription drug spending in the six southwest states. It is a pie chart with three slices. The three slices together total the \$13.1 billion that would be paid to manufacturers in the absence of any discounts or rebates.

- The smallest slice of \$1.2 billion shows today's discounts and rebates.
- The medium slice of \$4.3 billion reflects the additional savings that the six states' residents would win by paying FSS prices.
- The largest slice shows the \$7.6 billion in remaining payments to manufacturers, after winning all savings, reflecting an overall cut in factory prices of 42.0 percent.



Saving the additional \$4.3 billion by cutting drug prices to Federal Supply Schedule levels means more than price cuts. It means that many people in these six southwest states will be able to afford medications that they are now forced to do without. And that—as discussed later—means more drugs sold, allowing the drug makers to recoup through higher volume the revenue lost to lower prices. Together, higher private and public purchases would replace the lost revenue.

B. PRICES ELSEWHERE ARE LOWER

The Federal Supply Schedule (FSS) prices were used as the standard to calculate the savings just described. We used a 42 percent average discount for these prices.⁶ By some estimates, the 42 percent figure is conservative.⁷

Other standards could be employed, such as the prices actually paid to manufacturers, after discounts and rebates, in various other industrial democracies. The Canadian government's Patented Medicines Prices Review Board has compiled the prices paid elsewhere, and compared them to U.S. prices. The result is that U.S. prices are highest in the world, even after taking into account both the publicly reported rebates and discounts, and the estimates of unreported discounts and rebates.⁸

Using the Canadian Board's data, we have calculated the difference between the prices that manufacturers charge for the same drugs in seven nations, and their prices in the United States. These are reported in **Exhibit 8**.

- The first column of data in Exhibit 8 shows foreign prices as a percentage of U.S. prices. For example, the prices that drug-makers charged in Canada averaged 63.3 percent as high as U.S. prices for the same medications.

Exhibit 8

Prices Paid to Drug Makers in Eight Nations: Percentage of U.S. Prices (mean of 1997 and 1998 experience)

<u>Nation</u>	<u>Other nations' prices as % of U.S. prices</u>	<u>U.S. prices % above other nation's prices</u>	<u>Saving from U.S. prices</u>
Italy	52.1%	92.0%	47.9%
France	57.4%	74.4%	42.6%
Canada	63.3%	58.1%	36.7%
United Kingdom	65.7%	52.3%	34.3%
Sweden	67.9%	47.4%	32.1%
Germany	69.5%	43.9%	30.5%
Switzerland	76.5%	30.8%	23.5%
United States	100.0%	0.0%	8.7% *

Source: The 1997 price ratios were calculated from Patented Medicine Prices Review Board, *Trends in Patented Drug Prices*, Ottawa: The Board, September 1998, PMPRB Study Series S-9811, data in Figure 11. The 1998 ratios were calculated from Patented Medicine Prices Review Board, *Eleventh Annual Report*, Year Ending December 21, 1998, Ottawa: The Board, 1999, p. 21, figure 9. The data reported in this exhibit for each nation are the means of the ratios calculated for 1997 and 1998. Prices are weighted by net sales, as described in the end notes.

* The 8.7 percent overall savings for U.S. residents from the **reported** average U.S. prices indicates the extent of secret discounts and rebates, not disclosed to the Canadian Board, that are granted by manufacturers to buyers in the United States, we calculate.⁹

- The second column of Exhibit 8 shows the extent to which reported U.S. prices exceed those in other nations. For example, drug-makers' prices in the U.S. were nearly double Italian prices—92.0 percent higher.

These prices probably do not reflect all discounts and rebates provided by U.S. drug makers. That is because—through 1998—the Canadian Patented Medicines Prices Review Board collected data only on publicly known discounts and rebates, and data filed by manufacturers.¹⁰

The drug industry's position on its discounts and rebates in the United States is inconsistent. The drug makers have chosen not to report their secret U.S. discounts and rebates to the Canadian Patented Medicine Prices Review Board. It appears that they have not even reported the discounts and rebates they are required to give to public programs such as Medicaid or the Veterans Administration. One possible reason for this failure is that the Canadian Board would employ that information to drive down Canadian prices. Another possible reason is that Americans who were not getting discounts or rebates from manufacturers could learn how much extra they were paying.

But having failed to report their secret or public discounts and rebates to the Canadian Patented Medicine Prices Review Board, drug makers and their defenders urge Americans to ignore the Board's reports of high U.S. prices. Actual U.S. prices, they assert, would be lower if only the secret information were taken into account.¹¹

Despite the drug industry's refusal to disclose its discounts and rebates, and its stubborn insistence that U.S. prices are much lower than they seem, it is possible to estimate the size of the secret discounts and rebates.

Employing the techniques described in the Appendix on Methods, we calculated that the overall effect of existing secret discounts and rebates from manufacturers—along with Medicaid discounts guaranteed by federal statute—is to lower manufacturers' prices for residents of the United States by about 8.7 percent overall.

But all of the seven foreign nations shown in Exhibit 8 have won substantially bigger cuts in manufacturers' prices.

- The third column of data in Exhibit 8 indicates the effective price reductions won by foreign nations, taken as a percentage of the manufacturers' prices in the United States, as reported to the Canadian Board. The exception concerns the United States. The final line of this third column, for the United States, displays the 8.7 percent overall secret discounts and rebates that residents of the U.S. receive off the reported U.S. factory prices, according to our calculations.

Using the data in the third column, we can see that Italian price reductions are over five times as great as those in the United States (47.9 percent divided by 8.7 percent equals 5.5). And even the Swiss price reductions are over two and one-half times as great as those in the U.S. (23.5 percent divided by 8.7 percent equals 2.7).

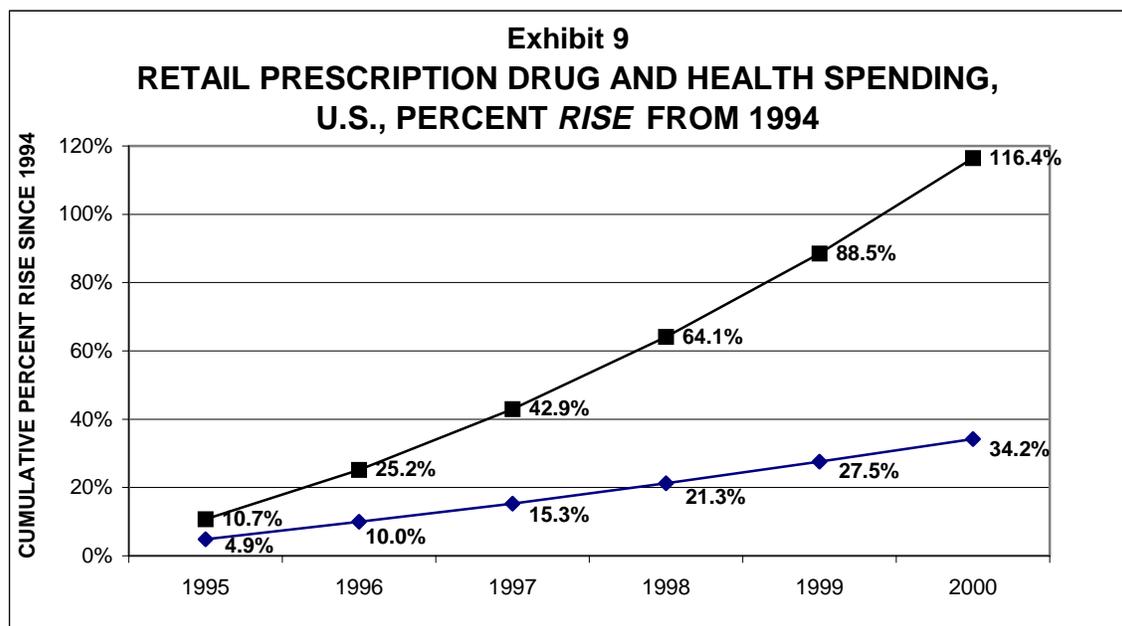
Similarly, the additional savings that would be won by Americans, were we to pay a foreign nation's prices, could be estimated by taking the difference between the 8.7 percent U.S. discounts and rebates and those in a foreign nation. For example, Americans would win a price reduction of 39.2 percent if we were to pay Italian prices.

C. WHY FOCUS ON MANUFACTURERS' PRICES?

It is right to focus on the price of medications because:

- it is not fair for Americans to pay much higher prices than do citizens of other wealthy nations, and thereby contribute far more to manufacturers' revenues and profits;
- failure to limit U.S. prices—at a time of annual 15 percent spending increases on prescription drugs—drives cost control efforts to focus on limiting use of prescription drugs; that is difficult, and possibly unwise in many instances;
- failure to limit U.S. prices in simple and direct ways also drives cost control efforts to resort to indirect methods—such as generic substitution or mail order pharmacy—which the drug makers then work to undermine;
- winning lower drug prices is the only affordable path to ensuring that all Americans can obtain the medications they need;
- and, winning lower drug prices is safe because, in combination with other methods, securing lower prices for Americans will not damage drug companies' abilities to perform needed research, or to attract needed capital.

The prescription drug cost problem is bad today, and it will worsen if we do not act in sensible ways. Between 1994 and 2000, retail prescription drug spending in the U.S. will have more than doubled, rising by 116.4 percent. At the same time, overall health care spending will have risen by 34.2 percent, we estimate. (See Exhibit 9.) Drug spending is rising more than three times as fast as overall health spending.¹²



We expect that higher rates of increase in U.S. drug spending will persist. Having more than doubled from 1994 to 2000, drug spending will double again in five more years if it rises by fifteen percent yearly, which appears to be close to the average national increase presently. Worse, some health maintenance organizations have indicated that they have been seeing 20 percent annual increases;¹³ Watson Wyatt reports that employers who they surveyed project an average rise of 22.5 percent in costs prescription drugs for employees in 2001.¹⁴

Between 1996 and 1998, spending on prescription drugs by the nation's Medicaid programs alone rose by 27.6%, we calculate.¹⁵

Some parties devote considerable effort to identifying the causes of higher drug spending. The 8-9 August 2000 conference on Pharmaceutical Pricing Practices, Utilization, and Costs, sponsored by the U.S. Department of Health and Human Services, devoted considerable time to airing and comparing various studies' data on the sources of the rise in spending.

The increase in total drug spending in the United States is attributable in part to (1) a growing population and (2) rises in the number of prescriptions per person. But it is also a result of (3) higher prices for existing drugs, (4) the introduction of new medications—often at very high prices, and (5) changes in the mix of drugs sold—usually from old to new and cheaper to costlier—often in response to drug makers' marketing and advertising.¹⁶ The average price per retail prescription filled rose from \$38.43 in 1998 to \$43.06 in 1999.¹⁷ This reflected a combination of the third, fourth, and fifth factors.

Some observers claim that rising prices have played a relatively small role in driving the rise in total drug spending. They seem to assert that rises in drug spending caused by introduction of new medications or by changes in the mix of drugs sold are somehow legitimate. We find that manufacturers' price increases have indeed played a fairly large role. And we find that the higher costs induced by changes in the mix of drugs sold are worthwhile only when the benefits won by changing the mix are commensurate with the higher costs.

But these are not the central issues because parsing out the possible causes of higher spending does little to lead Americans toward an overall solution.

Rather, the central issue is how to make prescription drugs affordable to all Americans, without increasing spending and without damaging drug makers' research or capital retention. Since total spending is the product of price and use, two approaches are possible.

The first approach is to control use of drugs. This is probably the most widely-used approach in the U.S. today, at least in part because of the difficulty of limiting drug prices in the face of opposition from the drug makers. But controlling use of drugs to save money is very difficult because:

- Not enough is yet known about which drugs are safe and effective in treating which patients for which problems. For example, many drugs are not used appropriately today. One striking recent example concerns Premarin, the best-selling prescription drug in the U.S. Many physicians had believed that Premarin protects against heart disease, but it may not.¹⁸

- Generally, there is little evidence that Americans overall consume too many prescription drugs. While some may use too many, others may use too few.
- Administrators who try to discourage physicians from using costlier drugs often lack leverage; putting physicians at financial risk is not always popular with doctors.
- As an administrative matter, it can be difficult and costly to review and manage doctors' prescribing behavior.
- Reducing drug use can harm patients, as Soumerai and his colleagues have reported.¹⁹
- Reductions in drug use are likely to lower manufacturers' revenues, other things equal. Wouldn't manufacturers respond by raising prices still higher, in order to rebuild profits to desired levels?

The second approach is to control the price of drugs. This is likely to be more effective, especially in the short run, for several reasons:

- U.S. drug prices are extraordinarily high *already*.
- High U.S. prices are the main reason why medications are unaffordable to many citizens.
- Lowering drug prices will reduce manufacturers' total revenue, but this reduction can be fully offset by higher drug use by patients who could not previously afford needed medications. Thus, while cutting use could lead to higher prices, cutting prices would lead to higher use because medications would be more affordable.
- It is easier to cut prices in ways that do not harm drug makers' research and profits than it is to cut use without damaging patients.
- Cutting prices buys time to learn more about appropriate and cost-effective prescribing, to save lives without breaking the bank.

Similarly, it is appropriate to focus price-cutting efforts on the prices charged by manufacturers at the factory because manufacturers garner some 74 percent of the overall retail dollar.²⁰ It is necessary to seek savings where the costs are incurred.

High U.S. drug prices are not a new problem:

- Four decades ago, the late Senator Estes Kefauver of Tennessee found that American prescription drug prices were much higher than those in other nations.²¹
- A series of reports by the United States General Accounting Office found that U.S. drug prices paid to manufacturers in the early 1990s were substantially higher than prices paid for the same drugs in other nations studied.²²
- The General Accounting Office's comparisons of U.S. and British prices for the same drugs from the same companies showed that the U.S. price excess remained very substantial even after U.S. discounts and rebates from manufacturers were factored in.

In the GAO's U.S.-U.K. comparison, the undiscounted factory prices for 77 drugs were fully 60 percent more in the U.S. than in the United Kingdom. The GAO found just a modest impact from using "an average U.S. price measure that includes discounts and rebates provided to certain nonfederal institutional buyers." Even including those discounted factory prices, the U.S. cost for the 77-drug market-basket was 51 percent above its U.K. cost.²³

- The recent reports by the Canadian Patented Medicine Prices Review Board, just discussed, reinforce the U.S. General Accounting Office studies.

Because so many Americans lack insurance for prescription drugs, and because prices here are so high, it is not surprising that, in a recent study, 17 percent of all Americans—and 42 percent of uninsured Americans—reported not filling prescriptions for financial reasons.²⁴ Anecdotal evidence grows that many Americans are having to choose between paying for medications and other requirements of health such as heat, housing, or food.²⁵

These are not new problems. While they are discussed frequently today, they began to be documented at least a decade ago. A national survey in 1991 found that, among Americans age 45 and over, one out of every 10 reported a need to cut back on essentials such as food and heat in order to pay for their prescriptions. The same choice confronted one-fourth of low-income households, and one-fifth of those in poor or fair health.²⁶ Another study found that 13 percent of elderly Americans, or more than one of every eight, have been forced to choose between medications and food.²⁷

These problems persist and grow during the U.S. economy's fat years, to paraphrase Joseph's explanation of Pharaoh's dream.²⁸

Perhaps 1,000 new drugs are in the overall pharmaceutical pipeline.²⁹ If too few of these medications work, we will have many disappointed investors.

But what if a great number of them do work? Then, many more patients will have to choose between their money and their lives. And still other patients will not even have this choice, because they will lack the money.

Will medical miracles be affordable for all or merely profitable for some? Put another way, what good is today's research if tomorrow's patients are not able to afford the valuable new medications that are discovered or fabricated? Indeed, what good are past research successes if even many middle-income patients—along with employers and public programs—today have difficulty affording the resulting products?

If we fail to make vital drugs available to all who need them, the public will be fearful and angry. Reasonable action today will prevent over-reaction tomorrow.

D. CAUSES OF HIGH U.S. DRUG PRICES

Americans pay the world's highest average prices for prescription drugs. And people in this country who lack insurance for prescription drugs typically pay still higher prices.

U.S. prices are high mainly because, alone in the world, our government does not protect us from the pricing power of the world's drug makers. Other nations generally reduce drug prices paid by their citizens by holding down the payments made to manufacturers.

Because of our governments' inaction to-date, prescription drug manufacturers charge far more in the United States than those companies charge in other wealthy, developed nations for the same drugs, often from the same factories.

Why have the federal and state governments failed to act to protect us against high prescription drug prices? Largely because the prescription drug industry has persuaded government not to act. The drug industry has argued that government efforts to limit prices or profits would destroy research. Most of the drug makers' arguments are unfounded or greatly exaggerated. But, even if they were valid, it would still be possible to finance all needed medications for all who live in the six southwest states without damaging drug makers' finances or their research.

Part II of this report argues and demonstrates that public action to lower U.S. prescription drug prices is both necessary for patients who rely on drugs, and safe for the drug makers themselves. Prices can be lowered without damaging the drug makers' total revenues, their profits, or their capacities to finance research.

PART II: SAVING MONEY AND SAVING LIVES WITHOUT HURTING THE DRUG MAKERS' FINANCES OR THEIR RESEARCH

Two issues are raised if the six southwestern states secured a 42 percent discount on manufacturers' prescription drug prices, in accord with the Federal Supply Schedule:

- What would be the financial impact on drug manufacturers? Would drug manufacturers be able to sell their products at these lower prices and still make a profit?
- Would there be a significant impact on pharmaceutical research?

If the six states were to enact such a cut, the immediate financial effect would be to reduce drug makers' take from the residents of the six states by roughly \$4.3 billion, as shown in Part I of this report. But this immediate financial effect would be substantially offset by private sector revenue growth owing to the lower prices. More patients would be able to afford to fill prescriptions.

A. REVENUE GROWTH TO OFFSET PRICE CUTS

1. How much would the volume of private purchases of prescription drugs rise in response to lower prices? This is difficult to predict with great precision, but several estimates can be made. The estimates vary considerably. It will be useful to consider price cuts' effects on volume of private drug purchases in the context of other possible changes affecting manufacturers' revenues. Those are taken up shortly.

First, some market responses to predictions of lower drug prices suggest that high sales volumes would offset threatened price discounts. Three British drug companies' stock prices rose 3.4 percent (Glaxo), 2.3 percent (SmithKline Beecham), and 1.9 percent (AstraZeneca) following President Clinton's January 2000 State of the Union speech calling for a Medicare prescription drug program.³⁰

Second, we have seen estimates of the price elasticity of demand for prescription drugs ranging from -0.10 to -0.64.³¹ A price elasticity of demand of -0.10, for example, would mean that a 1 percent price cut for drugs would result in an offsetting 0.1 percent rise in volume of drugs purchased. The increase in volume, multiplied by the prices of the drugs purchased, would equal the replacement revenues garnered by the manufacturers in response to the lower prices.

Much of the empirical work on price elasticity of demand for medications rests on introduction of, or increases in, co-payments for prescription drugs. It is not clear how easily these findings can be generalized to price cuts, especially to substantial price cuts.

Third, a June 1999 Merrill Lynch analysis estimated that a 40 percent price cut for Medicare recipients lacking prescription drug coverage would result in a 45 percent volume increase for these individuals.³² That translates into a price elasticity of demand of -1.125. (A similar price elasticity of demand might also apply to the remainder of the 70 million Americans lacking prescription drug coverage.)

Merrill Lynch also estimated that the same 40 percent price cut would net out to a 25 percent price cut for Medicare recipients who have prescription drug coverage (because they already enjoy discounts estimated to average 15 percent), and that the 25 percent price cut would raise the volume of drugs purchased by 10 percent. We suggest that is a very conservative estimate of the increase in volume for Medicare recipients who have prescription drug coverage. Many recipients have very shallow coverage, such as a benefit through an HMO with a cap of \$500 annually.

Even with that conservative estimate, the Merrill Lynch report concluded that, taking increased sales volume into account, a 40 percent price cut for Medicare beneficiaries would yield only a 3.3 revenue loss—or even a slight revenue gain.

Fourteen months later, Merrill Lynch continues to espouse this general position. In August of 2000, Merrill Lynch's health care manager, Jordan Schreiber, has asserted that "Even with drug price cuts I think there's a good chance the pharmaceutical group will actually come out as a net beneficiary as the presently uninsured become customers, albeit less profitable customers."³³

2. If these six southwestern states expanded existing public programs to finance the purchase of prescription drugs, and added new public programs, how great an increase in revenue could be expected to result? Even after prices are lowered through legislation or negotiation, many citizens of these states would still not be able to afford needed medications. But winning lower drug prices will substantially reduce the cost of starting or expanding state programs to purchase medications for those citizens. In turn expanding or starting these programs would substantially increase manufacturers' revenues.

When adding the effects of higher private volume and higher public purchases, however, care should be taken to avoid double-counting. Some of the beneficiaries of the new or expanded public programs might have struggled to purchase more medications privately in response to the lower prices (in the absence of those public programs).

3. To what extent would drug makers try to increase the volume or effectiveness of their marketing efforts, to seek still higher sales to restore some of the revenue lost through lower prices? This is difficult to ascertain, but would need to be considered by any parties seeking to negotiate fair drug company revenue and profit levels.

4. Could drug makers be guaranteed specified revenues from the six-state market?

All payors might join together to negotiate and assure fair profit margins for drug makers, and to make available adequate dollars to finance all needed research. Drug makers would produce and distribute the types and volumes of medications required to fill all physicians' prescriptions for residents of the six states. In exchange, they would be guaranteed to receive a certain total revenue, commensurate with their needs to conduct research and retain capital. This sum would be negotiated. Negotiators should recognize reasonable standards of efficiency in order to avoid simply paying drug makers for profligate marketing and administrative practices. It would take time to negotiate these matters, as they are likely to generate dispute.

Until those negotiations were concluded, one simple alternative might be to begin by assuring that all residents of the six southwestern states receive the drugs their physicians prescribe—and by assuring that the industry's profits were undisturbed. This could be considered a baseline case.

This would mean that drug makers (as an industry) would garner the same total revenue that they would have received before price cuts, reflecting offsetting volume increases, and adding payment to cover the actual incremental costs of producing and distributing the additional volumes of medications required to fill all physicians' prescriptions this year.

In other words, payors would together assure that all manufacturers of brand name drugs together received:

- ***from all sources—public and private—the total revenues estimated at \$12.0 billion in Part I of this report (for these states in the year 2000), plus***
- ***the costs of manufacturing and distributing additional volumes of medications.***

In this event, drug makers would report their total private revenue. Public funds would be appropriated to make up the difference between private revenue and \$12.0 billion. Public funds would then also be appropriated to reimburse drug makers for the actual incremental cost of making additional volumes of medications.

Another way to handle this shift administratively and legally would be for the six states to secure some or all of the 42 percent price cut through a rebate. The rebated money would be retained in a trust fund and used to buy medications from the same manufacturers who provided it.

In this event, drug makers' profits and research financing would be unchanged, but residents of the six states would obtain all needed medications at a tiny additional cost—the incremental cost of manufacturing additional pills, capsules, and aerosols, and suspensions. Next, we estimate the size of that added cost.

Subsequently, this baseline approach might be altered by negotiation. It would be in the public interest, we suggest, to give drug makers stronger incentive to develop breakthrough drugs, and weaker incentives to seek profits by investing in developing me-too drugs and in marketing.

B. COST TO MANUFACTURERS OF PROVIDING HIGHER VOLUMES OF DRUGS

The financial impact on drug makers is not a matter of revenue alone. Their cost must also be considered—both factors that raise total costs, and opportunities for reducing costs.

When drug prices are reduced, and when public programs to underwrite drug costs are initiated or expanded, more patients will be able to fill more prescriptions. Manufacturers will have to produce more pills, capsules, aerosols, and suspensions. They will need to be paid more money to cover the higher manufacturing costs.

Fortunately, it appears that the incremental or marginal costs of manufacturing additional volumes of medications are relatively low.

Moreover, it should be possible for manufacturers to lower non-manufacturing costs through greater efficiency.

1. Higher volumes of prescription drug use will result from lower prices. What will be the cost of producing and distributing this incremental volume of medications? Once research is conducted and factories are built, it should not be very great. We estimate the marginal cost of additional volumes of medications at 5 percent of the retail dollar, or about 6.8 percent of the manufacturer's cost.³⁴ How can this be so low?

First, because producing the medications consumes a relatively small share of the average manufacturer's total revenues. In 1997, for example, 34.0 percent of the revenues of Merck and Pfizer, on average, were devoted to acquiring raw materials and to manufacturing drugs.³⁵ If this is the average cost, which includes substantial fixed costs for engineering, equipment, and workers, then the marginal cost of producing additional volumes will be substantially lower. Costs of raw materials are typically very low. One report noted that "the cost of the raw materials runs only a few cents in pills that often sell for up to \$15 apiece."³⁶ A revealing example was reported recently. The vital ingredient for Xalatan, a successful medication to prevent glaucoma, costs only about one percent of annual sales.³⁷

Second, private conversations with managers of drug factories have supported the 5 percent figure.

Third, the prices set by manufacturers of generic drugs are very much lower than those set by manufacturers of brand name drugs. A Mylan executive has asserted that her company sells two-fifths of its 104 products at prices equal to 10 percent (or less) of the prices charged by brand name manufacturers.³⁸ This, too, suggests that drug makers' marginal costs are very low.

If manufacturers' marginal cost as a percentage of retail price is 5 percent, then it would cost manufacturers only \$50 million to make drugs with a retail value to the residents of the six southwestern states of \$1 billion.³⁹

2. How much of the reduction in revenue resulting from lower drug prices could be offset by greater efficiency of the drug makers? It should be possible to win substantially greater efficiency.

First, drug makers' in-house marketing employment rose by almost one-third between 1995 and 1999, reaching 72.6 thousand in 1999. That amounted to fully 34.0 percent of total drug industry employment in that year.⁴⁰ This seems excessive. In a reasonable world, it should be less costly to inform physicians about which drugs are effective and worth the money.

Second, drug industry expenditures on direct-to-consumer advertising are probably excessive by most reasonable measures, and could be cut.

Third, it should be possible to reduce drug makers' profits without damaging research or retention of needed capital. This issue is discussed further, below.

C. WILL LOWER DRUG PRICES DAMAGE RESEARCH?

The drug makers claim that federal or state government efforts to win lower drug prices would damage research. Their claim is subject to question in several ways.

1. Would lower drug prices threaten research? If lower drug prices were offset by the combined increases in the volume of privately purchased medications and the volume of publicly purchased medications, the drug makers would suffer no loss in total revenue. Additionally, were the drug makers compensated for the incremental cost of making more pills, they would suffer no loss in profit. Then, there would be little reason to fear that lower prices would threaten research in any way—even in someone's imagination.

The drug makers' profits might be protected in this way during a transition period, lasting a specified number of years. Subsequently, drug makers might be given more of an incentive arrangement, under which they would make more money when they developed more breakthrough drugs, and less money when they failed to do so.

2. The drug makers' own policies may be the main long-term threat to research. The drug makers complain that public efforts to restrain prices or profits will damage research. Is this threat credible?

Pharmaceutical Research and Manufacturers of American (PhRMA), the drug industry's main trade association, blames drops in their stock prices on investors' worries about government actions that might constrain prices or profits. Some individuals connected with the biotech and prescription drug industries have worried aloud about the instability of stock prices in 1993-1994 and again in recent months. They have condemned legislative efforts to contain prices or improve coverage, claiming that these efforts would impede the flow of capital to the industry. PhRMA claims that drug makers' research and development spending dropped in 1994, after the Clintons proposed drug price controls.⁴¹

PhRMA has tried to erect a "one way" sign on the street that connects the drug makers with government. Government is permitted to finance research through the National Institutes of Health. Government is permitted to allow the drug industry to patent NIH-financed findings.⁴² Government is permitted to provide generous tax credits for private research. But government is not permitted to ask anything in return. The industry's position is remarkably unreasonable.

In the U.S.A., federal and state governments will continue to debate proposals that aim to make medications affordable—until that goal is achieved. PhRMA says that government is creating a problem when it tries to lower drug prices. That is inaccurate. These government efforts are only symptoms of the underlying problem of unaffordable medications.

As long as many Americans cannot afford needed medications, state and federal governments will repeatedly attempt to lower prices and improve coverage. The industry cannot wish away this simple reality. Therefore, until all patients win equitable and affordable access to medications, investors will have reason to anticipate price-cutting efforts by government. Investors will consequently have reason to worry about the stability of drug profits. The challenge is to meet the legitimate needs of both patients and investors.

Because the drug makers' insistence on maintaining unnatural and unsustainable price levels is the main barrier to making medications more affordable, their insistence is also the main force that engenders the various public proposals for reform.

For this reason, the drug makers' position has become the main long-term threat to pharmaceutical research—the main long-term force likely to destabilize research in the United States. Were the drug makers to compromise now, they could help to shape a durably affordable framework of prices and profits—one that makes all needed medications affordable for all Americans while protecting revenue needed to finance research and also to retain capital. But if the drug makers do not compromise now, and if they continue to block public reforms that will make medications affordable for all, an angry future Congress or group of states could well legislate price controls so sharp and so deep that they could actually undermine research. Moderate action and compromise today will protect both Americans and our vital drug research community tomorrow.

3. How much research do the drug makers conduct, of what kinds, and how is it financed?

To evaluate the effects of various price cuts on research, it is useful to consider how research is financed—where does the money originate?

In this connection, the drug makers make a number of claims of doubtful validity. First, they claim that they set prices to cover research costs. This is entirely unlikely. Their duty to their stockholders is to set prices to try to maximize profits. That is what their stockholders expect. In 1998, the top ten drug makers' profits averaged one and one-half times their research costs.⁴³

Second, the drug makers say they need high profits to finance research. But they do not use their profits to finance research. The profits that they report—and that are so far above those of other industries⁴⁴—are the sums left over *after* they pay for research, manufacturing, marketing, advertising, administration, taxes, and other costs.

Further, the drug makers are not willing to identify a ceiling on their profits or revenues—the level of profit or revenue beyond which no more money is needed to finance useful research. Similarly, the drug makers are unwilling to identify any floor on their profits or revenues—the level below which vital research would suffer. Their position is simple: more money (for themselves) is better. That would make sense only if the drug makers operated in a competitive free market. They do not, as discussed in the following section.

The drug makers seem to explain or rationalize various behaviors by claiming that they are undertaken to advance research. Generally, PhRMA tries to argue, in effect, that high drug prices are good for us because they finance research that would not otherwise be conducted. More specifically, for example, Glaxo Wellcome and SmithKlineBeecham asserted that their merger should be welcomed because “the combined entity will save \$250 million in research and development expenses, and that all savings will be funded back into research.” The savings “`will not go to the bottom line.’”⁴⁵ But how can that be assured?

Third, drug makers claim that it costs them about \$500 million, on average, to bring a successful new drug to market. PhRMA claims that Boston Consulting Group found that “average cost of development [for] a new drug is about \$500 million, including the cost of research failures as well as interest costs over the period of investment.”⁴⁶ This estimate seems to rest in large part on earlier work by DiMasi and his colleagues.⁴⁷

The work by DiMasi and his colleagues, however, seems to apply only to drugs originated entirely by the manufacturers, and not to the substantial number of drugs developed with National Institutes of Health or other public financing at either government or university laboratories, as *The New York Times* recently reported. Including those other drugs would lower substantially the \$500 million per drug estimate.⁴⁸ Further, much of the \$500 million claimed cost represents opportunity cost—the money that investors presumably could have made if they had invested elsewhere while drug research was underway.⁴⁹

Fourth, PhRMA claims that its members expect to spend some \$26.4 billion on research world-wide in the year 2000, up 10.1 percent from 1999's level.⁵⁰ But it is far from clear what this figure means. In the absence of standardized cost accounting rules or standardized financial reporting, PhRMA members have substantial latitude in deciding what they count as research. How much of these sums, then, are for true research into breakthrough drugs? How much for development of copy-cat drugs that do much less good for humanity? How much for *market* research? The U.S. Senate Special Committee on Aging raised serious concerns about these matters almost one decade ago.⁵¹ Those concerns have not been resolved. Indeed they have grown. According to Goozner, DiMasi agrees that some 40 percent of industry-financed research aims to develop me-too drugs.⁵²

Fifth, drug research, like most science, is international, and so are many of the large drug makers. It is possible that a disproportionate share of research does take place in the United States, as PhRMA claims. It is also possible that PhRMA downplays the share of research that takes place in other nations and exaggerates the U.S. share. No rigid rules govern that assignment. So if a firm conducts research in several nations, it has leeway in deciding which nation receives credit for developing a new drug. The decision could be influenced by a desire to win political or public relations advantage.

But no matter where the research takes place physically, it is not fair for Americans to finance a disproportionate share of that research.

The cost of paying for the research is unfairly distributed, and so are the benefits of the research. All the world's wealthy nations pay money to the drug makers that finance research (among other things), but Americans clearly pay more. Citizens of all the world's wealthy nations benefit from research, if they can afford the medications they require. But one-quarter of all Americans lack any insurance for prescription drug costs, and many are under-insured. As a result, Americans—who shoulder a disproportionately great share of the costs of drug research through our high prices—reap a disproportionately low share of the benefits of that research.

Worse, perhaps the huge sums paid by Americans are not even going to finance additional research, but are spent on marketing and the like or simply absorbed as profit. We find reason for concern in calculations from the industry's own data on drug manufacturer-financed research in 1997. U.S. firms' share of the industry's research in eight leading nations (39.1 percent) simply appears to be proportional to this country's share of the same eight nations' population (40.1 percent). And it is far smaller than the U.S. share of health spending in these nations (59.5 percent).⁵³

4. Methods of enhancing research to develop valuable new breakthrough medications.

To generate profits today, drug makers like Pfizer may rely too heavily on marketing and too little on research.⁵⁴ If this is so, it is possible that the real reason drug makers fear government efforts to lower prices is not any imagined threat to research, but rather that ***the drug makers would be obliged to compete by conducting research to develop more medications that patients need—more breakthrough drugs.*** On this line of thinking, the drug makers' real fear is being forced to do in reality much more of the research they say they have been doing.

At least three approaches could be taken to spur research into valuable new breakthrough drugs:

- Rewarding drug makers with generous profits if they develop breakthrough drugs. The British government has sought to provide bonus profits to manufacturers that do so. It might be possible to learn something from the British experience.
- Ceasing to offer generous rewards for me-too drugs that offer few clinical advantages.
- Increasing National Institutes of Health support for research. Profits on drugs resulting from that research should be commensurate with the share of the research risk that is borne publicly.

D. ONLY GOVERNMENT ACTION CAN PROTECT THE PUBLIC

For many years, the drug makers and some researchers argued that U.S. prices were not the highest in the world.⁵⁵ Now, the drug makers and some researchers sometimes abandon that position. Instead, they concede that prices might be high here, but then claim that is justified by higher U.S. incomes. They also claim that lower drug prices overseas don't translate into lower drug spending, and that high prices are good because Americans benefit from increased drug research.⁵⁶

The drug makers assert that high U.S. prices and profits finance higher U.S. drug innovation⁵⁷ and that the "U.S. has an environment that nurtures biomedical research."⁵⁸ Similarly, they argue that any efforts by governments in the United States to lower prices and profits would badly harm drug research, causing many Americans to die needlessly.⁵⁹

In these ways, the drug makers have worked tirelessly to paralyze government action to make medications affordable for all Americans. They claim:

- that high U.S. prices and profits are needed to finance vital research;
- that today's prices and profits are legitimate products of a free market; and
- that even moderate public restraint on prices or profits will collapse the drug makers' fragile financial house of cards.

The link between high U.S. prices and profits, and research, was addressed in the preceding section. The remaining claims are taken up here.

The drug makers' profits far exceed those that other industries garner. During the 1990s, the nation's big drug makers' returns on equity were two and one-quarter times the average for all U.S. industries, and their profits by other standard measures have also been extraordinarily high.⁶⁰ It is unrealistic to expect that American patients can or will continue to pay prices high enough to sustain these profits.

Drug companies maintain that their industry is very risky. As we showed elsewhere, though, major drug manufacturers have had strikingly high profits, decade after decade, apparently since the 1930s.⁶¹ That consistently high level of drug industry profits, especially during the 1990s, raises the question: where is the risk? Risk implies uncertainty. Some uncertainty may surface among individual firms, but it is certainly not apparent across the industry. Thus, the extraordinary rate of return does not seem to be justified by the risks run.

The United States government emphatically rejects PhRMA's claims that a free market legitimizes drug makers' prices, or that cutting prices is dangerous, by taking a 42 percent (or so) price discount for medications for the Veterans Administration and the military, and by taking an 18 percent (or so) rebate for the Medicaid program. This is the sort of thing foreign governments have long done for all their citizens.

But unlike governments elsewhere, our government has protected only itself alone. In so doing, it leaves the drug makers free to raise prices on the rest of us in order to reach their domestic revenue targets—the level of revenue they aim to harvest from American patients.

Indeed, there is no free market to legitimize the drug makers' high profits. For many reasons—including the industry's foundation on government-granted patent monopolies—few signs of a free and competitive market can be detected in the drug industry (outside the retail pharmacy sector).⁶² Prevailing price disparities are themselves evidence of the lack of a free market for prescription drugs. While different payors today pay very different prices for the same drug, prices would tend to converge if there were a free market. In a free market, price competition would result in the same price throughout the market.

The industry's monopolistic (or oligopolistic) character in many sectors gives drug manufacturers tremendous power to set prices. Recent reports have documented that there is only limited competition within many major categories of medication. For example, in four important categories of drugs, the top-selling three drugs accounted for 71-90 percent of 1998 U.S. retail sales.⁶³ Such market concentration is likely to give substantial pricing power to the manufacturers involved, and is further evidence of the need for government action as a counterweight to protect the public. This power will grow as drug makers merge into fewer and larger corporations.⁶⁴ Vertical integration—including Merck's control of a major PBM—is also a concern. And allegations of such anti-competitive practices as suppression of generic competitors are further signs of continued monopoly and oligopoly.⁶⁵

Without either functioning free markets or effective government action, we have only one thing—anarchy. And anarchy allows the strong to earn unwarranted profits—unnaturally high profits—by charging unnaturally high prices.

That is why PhRMA spreads a fog of fear—PhRMA's Fog of Fear—to try to paralyze public action and to preserve anarchy. The Fog's main component is the claim that government efforts to win lower prices will cripple research, leading to unnecessary suffering and death.

PhRMA tries to paralyze government action in a number of other ways, some of which conflict with others. It denies that U.S. prices are particularly high. It claims that U.S. patients should pay more for drugs in order to finance research.

PhRMA boosts private solutions. First, PhRMA urges private insurance for drugs, claiming that it will suffice to cover seniors who can't now afford needed medications. But private insurers do not wish to write prescription drug benefits because a) they expect that people with higher drug costs would be likelier to sign up; b) this adverse selection would lead to rapid premium rises; and c) these increases would harm the insurance industry's image.

Second, PhRMA urges patients to shop among pharmacies to get lower prices. But patients who need costly medications usually need more than one. Buying drugs at different pharmacies makes it much harder for any one pharmacist to spot potentially dangerous drug interactions. Additionally, there is no evidence that high retail mark-ups are the source of high U.S. drug prices. This PhRMA approach is not shooting at the target. Indeed, it may have been crafted to deflect attention away from manufacturers' own high charges.

Third, PhRMA urges reliance on private efforts to win lower prices, such as use of pharmacy benefit managers (PBMs). But both PhRMA itself and groups that are said to have very close ties to the drug industry have opposed the use of formularies,⁶⁶ one of the techniques that PBMs (and HMOs) employ to win price discounts or rebates. Moreover, PBMs' buying power is fragmented; they do not represent the entire nation. PBMs are unable to win the price discounts that sovereign governments regularly obtain from drug makers through negotiation or regulation. And some PBMs have been subsidiaries of drug makers. Others may select drugs that hike PBM profits in place of those that might be more cost-effective.

It appears that PhRMA boosts private solutions precisely because they would do little to lower prices. The alternative is government action.

E. OUR GOVERNMENTS MUST ACT CAREFULLY, BUT THEY MUST NOT REMAIN PARALYZED

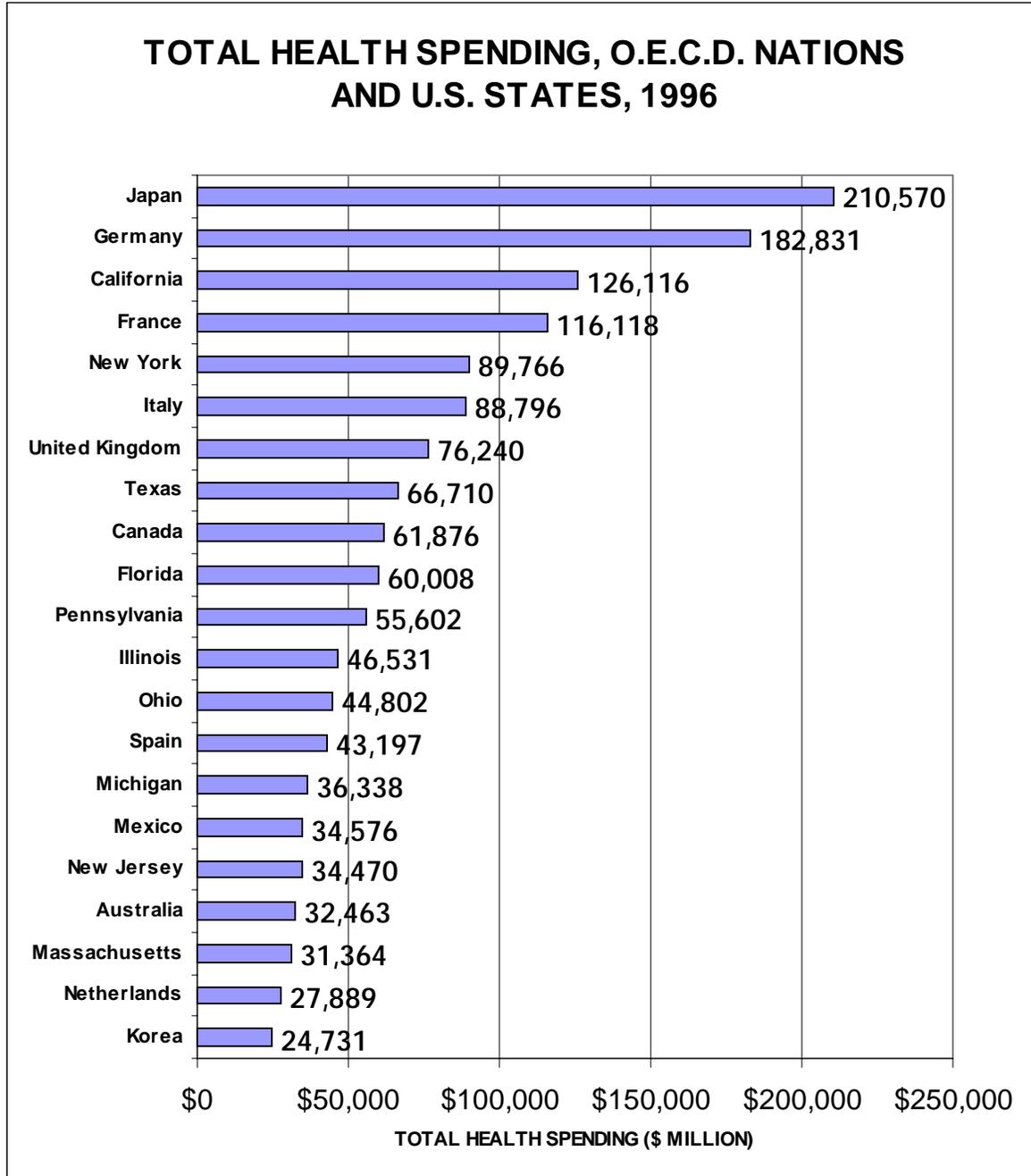
Only government action can protect the public by winning affordable medications for all Americans, but government must still proceed carefully. Other nations have already won lower drug prices for themselves and for their citizens. The drug makers have become unfairly and artificially dependent on extracting disproportionate shares of their revenues from American patients, employers, and federal/state governments.

But because our people do provide so much money to the drug makers, we should lower prices carefully. A smaller nation—or a small American state—can lower its drug prices with relatively little effect on the drug makers. Because our nation provides the drug makers with between one-quarter and one-third of their worldwide revenues, we must act deliberately.

Similarly, if the six southwestern states were to act as a group, they should also act with deliberation, as they provide enormous revenues to the world's drug makers. But this means that the six southwest states' buying power gives them a substantial opportunity to protect their citizens against high drug costs.

Indeed, setting aside the United States total, California alone was third in the world in total health care spending recently—after only Japan and Germany. Exhibit 10 ranks total health care spending in 1996 for the ten highest-spending states along with the highest-spending nations.

Exhibit 10



Some drug makers' and researchers' magical solution is to promise that new drugs will reduce costs of hospital and doctor care.⁶⁷ That's easy to promise but hard to deliver, on average. Some short-run savings may be possible in some instances. But even in the short run, using more drugs can boost use of physician services to adjust dosages and monitor safety—or simply to discuss patient interest in new medications. In the long run, while preventing or treating one disease is a blessing, doing so will inevitably expose patients to other diseases. This means that any dollar savings from new drugs are one-time only. And it is questionable whether we are even enjoying such short-run savings, as today's surge in prescription drug spending is accompanied by rising costs in other health care sectors.

Prudence demands that we plan against the contingency that drug breakthroughs will fuel higher spending. Public action to make needed medications affordable for all is therefore required.

Federal legislation to mandate lower drug prices for seniors has been introduced, as has legislation to offer prescription drug benefits under Medicare.⁶⁸ We need to weave these two approaches together because helping vulnerable people will be very costly unless it is coupled with restraints on spending.

Impatient with the pace of federal action, many states are considering legislation to win lower drug prices. Maine has just passed a promising new statute.⁶⁹ States should and can act to win both lower prices and assured provision of needed prescription drugs for all their citizens.

It is entirely possible to protect the residents of the six southwest states—and all other Americans—against the cost of prescription drugs at very little expense, and in ways that provide fair and adequate financing for research to develop new and effective drugs. Four rich opportunities make this possible:

- First, U.S. drug prices and U.S. drug spending per person are the highest in the world.⁷⁰ This means that all of us together already spend enough, by any reasonable standard, to buy the medications all Americans need.
- Second, Americans together generate nearly 40 percent of the world's drug makers' revenues.⁷¹ This gives our nation great leverage, though—as noted earlier—it means that government here must act carefully.
- Third, the price elasticity of demand for medications may be very substantial, as discussed earlier. That is, as prices drop, patients will fill more prescriptions. Thus, price reductions would probably lead Americans to trade some of the savings projected earlier for greater use of medications. That would allow drug manufacturers to make up in volume much—or all—of the revenue that they would forgo through lower prices.
- Fourth, once drug research is performed and once the factories are built, the marginal cost of manufacturing additional volumes of medications—more capsules, pills, and suspensions—is very low. We estimate it at an average of just 5 cents on the retail dollar.⁷² That means that manufacturers can make drugs worth \$20 billion to Americans (at retail) at a cost to them of only \$1 billion.

State and federal governments can act to make needed medications available to all Americans. Because PhRMA's Fog of Fear has paralyzed federal efforts and made them unnecessarily costly, states should act on their own. If they don't, human misery will multiply needlessly.

States should enact lower prices. Private individuals will respond with greater private purchases of medications, as more people are able to afford to fill their prescriptions. And states should provide money to help the people who are unable to afford even the discounted prices. Total spending grows slightly—enough to cover the added costs of manufacturing. All people get the medications their physicians prescribe. The drug makers' profits and dollars for research remain as high as they were.

Assuring that each person in each state receives all needed medications does not require vast increases in spending. And it does not require harming the drug makers' research. It does require spending our money better. We can do that.

APPENDIX ON METHODS

A. NATIONAL ESTIMATES

1. The estimates presented in this report are for calendar year 2000. All estimates of savings concern dollars paid to manufacturers for brand name drugs.
2. These estimates concern the actual prices paid to manufacturers after rebates, discounts, and other reductions—not the retail prices in drug stores.
3. Our calculations of savings begin with the Pharmaceutical Research and Manufacturers of America (PhRMA) own estimate of its members' U.S. domestic sales in 2000, \$105.6 billion, after discounts and rebates.⁷³ This figure represents actual revenue received by PhRMA member firms from Americans.
4. PhRMA's \$105.6 billion base figure is slightly (3.4 percent) higher than our own estimate of total payments to manufacturers this year, \$102.1 billion.⁷⁴ It is possible that both figures are somewhat conservative. Other things equal, this means that actual national and state-level savings from paying foreign prices might be slightly greater than those estimated in this report.⁷⁵
5. This manufacturers-level sales figure is net of rebates and discounts. It appears to exclude sales by independent generic manufacturers, such as Mylan.⁷⁶ But it apparently does include sales by subsidiaries of PhRMA members. In 1994, 8 of the 15 largest generic manufacturers were owned by firms of the type that belong to PhRMA. These accounted for 46 percent of generic sales.⁷⁷

Even though the PhRMA \$105.6 billion estimate seems to exclude generic drugs not manufactured by PhRMA members, we have, to be conservative, removed the entire share of total sales earned by generic manufacturers. This is estimated at approximately 8.6 percent,⁷⁸ or \$9.1 billion.

This leaves \$96.5 billion in estimated manufacturers' revenue from sales of brand name drugs in the United States in 2000.

B. THE SIX SOUTHWEST STATES' BASELINE ESTIMATE FOR 2000

We calculated each state's share of estimated U.S. year 2000 prescription drug spending of \$96.5 billion by employing the following procedures.

1. We began with the 1997 estimates of state-level retail prescription drug spending. These were obtained from the National Association of Chain Drug Stores.⁷⁹ We then calculated the state's share of national 1997 retail drug spending.

2. We assumed that a state's share of the nation's retail drug spending was roughly comparable to its share of the nation's total prescription drug spending, including nursing homes and hospitals. This assumption is reasonable; also, it is not very consequential, since retail spending is approximately 88.6 percent of total prescription drug spending, we have estimated conservatively.

3. We also assumed that the state's share of total prescription drug spending in 2000 is roughly the same as it was in 1997.

4. We then applied each state's 1997 percentage of total U.S. prescription drug sales to the \$96.5 billion in estimated manufacturers' revenue from sales of brand name drugs in the United States in 2000. That yielded an estimate of the state's actual payments for brand name drugs in 2000. Californians, for example, spent roughly 8.3 percent of the nation's prescription drug bill in 1997. Taking 8.3 percent of \$96.5 billion translates into a year 2000 payment to manufacturers of \$8,015.8 million (that is, \$8.0 billion) for brand name drugs, as reported in the middle column (actual current spending) of Exhibit 4. The sum for the six states is roughly \$12.0 billion.

C. MEASURING EXISTING DISCOUNTS AND REBATES

The calculations of actual prescription drug spending in each state measure each state's **actual payments to manufacturers for brand name drugs in 2000**. This payment reflects certain discounts and rebates that already prevail. Those won by Medicaid and other federal programs by federal law are public. Those won by HMOs, PBMs, and other private parties are secret. We therefore estimated the size of the secret private discounts and rebates.

This was necessary for two reasons: First, without estimating existing discounts and rebates, it is not possible to gauge the savings that would be won by statewide use of the 42 percent discount achieved by the Federal Supply Schedule pricing—or, indeed, the savings that would be won by applying the manufacturers' prices in other nations. Second, without estimating existing discounts and rebates, it is not possible to fairly compare each state's prices with those paid by citizens of other nations.

We proceeded in this way:

1. We divided the each state's total spending in 2000 (the \$8.0 billion figure for California, for example) among the four main categories of payors. These are the three major retail categories (self-pay, insured, and Medicaid) and the non-retail category (principally hospitals and nursing homes). To do so, we first backed out the non-retail share, estimated at 11.4 percent of the total, as calculated earlier.⁸⁰ Second, we then divided the remaining dollars among the three retail categories. This was done in proportion to their share of retail sales in each state in 1997.⁸¹

(We acknowledge that this allocation ignores differences among payors in shares of existing discounts and rebates. This shortcoming will be addressed in future work. It is not believed that this approach introduces serious distortions into the calculations.)

2. We estimated existing discounts and rebates, by payor, in each state.

Self-pay patients were assumed to enjoy no discounts and rebates. This ignores discounts or rebates that might be paid to insurers for some patients—very few—we believe, who were counted as self-pay but who were in fact insured. These patients could include, for example, those with traditional insurance that requires a patient to pay cash for prescriptions, and then file claims for reimbursement.

For third party payors, we estimated a manufacturers' combined discount and rebate averaging 10.0 percent. A U.S. General Accounting Office study sought to measure the value of discounts and rebates won by a pharmacy benefits manager (PBM) for federal employees insured through Blue Cross/Blue Shield. The discounts and rebates secured from manufacturers and provided to Blue Cross/Blue Shield were estimated at roughly \$107 million out of a pre-discount and pre-rebate cost of \$1.9 billion. This means that the PBM obtained price reductions which saved about 5.6 percent of the total.⁸²

This figure requires three qualifications. First, in the General Accounting Office study of Blue Cross/Blue Shield's PBM, 10 percent of the discounts and rebates were retained by the PBM to encourage it to work harder. Second, some HMOs might gain bigger discounts and rebates if they close their formularies or otherwise provide preferences to some manufacturers' drugs. But third, other payors might not be willing or able to extract savings from manufacturers as large as those won for the large federal workforce by Blue Cross/Blue Shield's PBM. The two other federal health plans examined in the General Accounting Office's study of PBMs, for example, seemed to show much smaller discounts or rebates from manufacturers than those secured for Blue Cross/Blue Shield.⁸³

For this report, we have assumed that private parties currently win discounts and rebates on brand name drugs from manufacturers that total an average of 10.0 percent in each of the six states.⁸⁴

Some might be surprised that this figure is so low. After all, PBMs have reportedly won savings of between 20 and 27 percent in one study, and between 14 and 31 percent in another study.⁸⁵ But those data reflect *all savings* that might be obtained by PBMs—not only through discounts and rebates from *manufacturers*, but also through discounts and rebates from retailers and mail order houses, prior approval, drug utilization review, and the like. In the General Accounting Office's study of Blue Cross/Blue Shield's PBM, only about 21 percent of the savings won by the PBM were attributed to discounts and rebates from manufacturers.⁸⁶

For Medicaid patients, we calculated a rebate percentage separately for each state, as shown in **Exhibit A-1**.

Exhibit A-1

Medicaid Prescription Drug Rebate Percentages, by State, 1998

State	Medicaid Prescription Drug Rebate, 1998
Arizona	18.3 %*
California	23.4 %
Colorado	18.5 %
Nevada	14.9 %
New Mexico	25.7 %
Utah	14.5 %
National average	18.3 %

Sources: National Pharmaceutical Council, *Pharmaceutical Benefits under State Medical Assistance Programs*, Reston, Virginia: The Council, 1997 and 1999 editions. The Council obtains data on rebates from HCFA 64 Medicaid Financial Management Report. It obtains data on total drug spending from HCFA (CMSO) HCFA-2082 reports.

*NOTE: Arizona does not report data on Medicaid prescription drug rebates. The weighted national average of 18.0 percent has been used for Arizona.

For non-retail payors, principally hospitals and nursing homes, we estimated discounts and rebates at 7.5 percent of manufacturers' prices. According to one Congressional Budget Office study, hospitals paid 9 percent below the average price invoiced by manufacturers to retail pharmacies, and long-term care facilities paid 5 percent less.⁸⁷

3. In light of these discounts and rebates, we estimated what the payments to manufacturers would have been if each payor paid full, undiscounted factory prices. We added the estimated discounts and rebates currently won by each payor to the current payments for each payor. To do so, we divided the post-discount and -rebate price by (1.0 minus the discount/rebate rate) for each of the four payors. Summed across all payors, the overall discount and rebate rate estimated to be in effect in the six states in the year 2000 is 8.9 percent of full manufacturers' prices.

4. We then calculated the additional savings that would be won if all residents of each state paid Federal Supply Schedule prices. These were taken to average a 42 percent cut from manufacturers' full prices, as described earlier in this report.

To do so, we first subtracted the discount and rebate percentages currently enjoyed by each of the four classes of payors from the 42 percent figure. The resulting differences represent the new, additional discount percentage for each payor. We then multiplied each of the additional discount percentages by that payor's year 2000 spending at full manufacturers' prices, as estimated in step three.

The result was an additional saving across all six states of roughly \$4.3 billion this year.

5. We then subtracted this additional saving from the roughly \$12.0 billion to be paid this year by the residents of the six states (calculated earlier in step B-4). The result is the sum that would be paid to manufacturers for brand name drugs this year if the Federal Supply Schedule prices were actually in effect for all buyers here. This assumes no change in the volume of sales.

Private sales would rise in response to the lower prices. This would restore much and perhaps most of the revenue lost to manufacturers from cut in prices to the Federal Supply Schedule. The remaining revenue loss could be restored by higher public payments, to help people unable to afford even the newly discounted prices. Additional revenue would be provided to drug makers to cover the actual cost of producing the higher volumes of medications.

D. INTERNATIONAL COMPARISONS

1. Brand name drugs are those that currently receive—or formerly received—patent protection. In this report, we have compared the factory prices of these drugs paid by Americans with the factory prices paid by citizens of other nations.

2. This is why it is appropriate to do so. The brand name drugs could be divided into four groups:⁸⁸

- a. breakthrough drugs still under patent that face no competition from a drug that uses the same therapeutic mechanism
- b. breakthrough drugs still under patent that face competition from a “me-too” drug that uses the same therapeutic mechanism
- c. me-too drugs still under patent
- d. breakthrough or me-too drugs formerly under patent that now face competition from a generic equivalent.

The first three groups of drugs are still under patent. Their U.S. prices can therefore clearly be compared with the prices of drugs under patent in other nations. The fourth group of drugs, while no longer under patent, is treated similarly in this study. That is because, as a recent Congressional Budget Office Study noted:

Various studies have found that generic entry has little effect on the prices of brand name drugs, which continue to increase faster than inflation. CBO's analyses of the average prices

that manufacturers charge for drugs distributed to retail pharmacies is consistent with that result.⁸⁹

One reason why off-patent brand name drug prices do not fall is that buyers who are price-sensitive may be more likely to switch to generics, and those who continue to buy a brand name drug are less price-sensitive.⁹⁰

CBO did note that non-retail purchasers, such as HMOs or hospitals, might receive steeper discounts on brand name drugs once a generic is marketed.⁹¹ We do not consider this issue in the present study. There are two reasons. First, the effect of the discounts and rebates is removed from the price comparisons employed in the study. Second, the PhRMA estimate of prescription drug sales by drug makers in the United States market in the year 2000 was net of discounts and rebates.

3. To compare prices paid to manufacturers in the United States with prices paid in other nations for the same drugs, we turned to the price compilations for patented drugs prepared by the Canadian government.

We considered the average prices paid for prescription drugs in each of eight wealthy nations, including the United States.

The prices are compiled by the Canadian government's Patented Medicine Prices Review Board (PMPRB).⁹² Prices are weighted by net sales. These are the prices actually paid to manufacturers, after rebates, discounts, promotions, and the like. (It should be noted that some discounts and rebates, such as those earned by the U.S. Veterans Administration and other federal programs, were apparently not factored in by the PMPRB. These programs, while large in dollar terms, are relatively small shares of total U.S. prescription drug spending. Drug manufacturers might claim that price comparisons like these made by the PMPRB overstate U.S. prices by ignoring private sector discounts and rebates, but if they want that assertion to be reflected in public discussions, they need to document publicly to what extent—and where—such price discounts and rebates exist.)

The other seven nations are Italy, France, Canada, the United Kingdom, Sweden, Germany, and Switzerland. The PMPRB data allow us to present evidence on six of the wealthy nations of the European Union, and also on neighboring Canada, the focus of recent discussion of international drug pricing disparities.

4. We averaged the price ratios for the two most recent years for which data were available, 1997 and 1998.⁹³ Exhibit 8 presented those ratios.

- To convert currencies, the Patented Medicine Prices Review Board used average exchange rates prevailing over the previous 36 months; in this case, the 36 months prior to 1997, and the 36 months prior to 1998.
- The Board expressed each nation's prices in ratio to Canada's, with Canada assigned a value of 1.00. We used those ratios to calculate the relationship of prices in Canada and in the other nations to prices in the U.S. (Dividing each ratio by the ratio of U.S. prices to Canadian prices, we re-expressed each nation's prices in ratio to those in the United States, with the United States assigned a value of 1.00.)

NOTES

¹ This figure includes:

- 35 percent of those over age 65. See Health Care Financing Administration, Office of Strategic Planning, data from the Medicare Current Beneficiary Survey, cited in Margaret Davis, John Poisal, George Chulis, and others, "Prescription Drug Coverage, Utilization, and Spending among Medicare Beneficiaries," *Health Affairs*, Vol. 18, No. 1 (January – February 1999), pp. 231-243, exhibit 1.
- the people who lack any health insurance (using each state's estimated year 2000 population and the same percentage uninsured as in 1998, the most recent year available). See U.S. Bureau of the Census, "Health Insurance Coverage: 1998," 4 October 1999, Table 8, <http://www.census.gov/hhes/hlthins/hlthin98/hi98t8.html>. (The six-state total is the sum of the number uninsured in each state.) Please note that single-year estimates of the percentage uninsured in each state are less reliable for smaller states than they are for larger states; still, the rates do not usually fluctuate markedly from year to year.
- seven percent of those under age 65 with private insurance. Personal communication reporting on 1993 survey by the Health Insurance Association of America, Al Minor, HIAA Research Department, 18 September 1995.

The year 2000 population was estimated by taking the state's 1 July 1999 population estimate and raising it by the rate of increase between 1 July 1998 and 1 July 1999. See U.S. Bureau of the Census, "State Population Estimates: Annual Time Series, July 1, 1990 to July 1, 1999," ST-99-3, 29 December 1999, <http://www.census.gov/population/estimates/state/st-99-3.txt>.

The share of the year 2000 population that is over age 65 in each state was estimated using the average percentage that prevailed in that state in 1998 and 1999. See U.S. Bureau of the Census, "Population Estimates for the U.S., Regions, and States by Selected Age Groups and Sex: Annual Time series, July 1, 1990 to July 1, 1999," ST-99-9, 9 March 2000, <http://www.census.gov/population/estimates/state/st-99-09.txt>.

The share of each state's under 65 who had private health insurance in 1998 was estimated from Current Population Survey data files using the U.S. Census Bureau's Ferret tool.

The six-state totals are generally calculated in the same manner. The total number uninsured in the six states, however, and the number of people under age 65 with private health insurance represent the sums of the respective estimates for each state.

² Authors' calculations.

³ The insurers refusal to bid on Nevada's new program backs up the industry's words with solid inaction. See Robert Pear, "Ominous Start for Programs to Insure Drugs for Elders," *New York Times*, 8 July 2000.

⁴ Adverse selection occurs when the people with higher costs are more likely to sign up for insurance protection against those costs. High drug costs are the most predictable expense in health care, because most people with high costs have been suffering chronic illnesses for years, and have been paying for expensive drugs for years. See Alan Sager and Deborah Socolar, "Flaws in Governor Cellucci's Prescription Drug Plan," letter to the editor, *Boston Globe*, 31 May 1999. For a lucid exposition of this problem, see Paul Krugman, "Prescription for Failure," op-ed, *New York Times*, 26 July 2000.

⁵ Generic drugs are omitted from all calculations in this report. That is because pricing methods for generics are very different. And discounts are substantially lower. International comparisons of prices typically employ brand name drugs only. And the Federal Supply Schedule treats brand name and generic drugs differently. This omission does not affect any of the findings of this report because spending on generics is only about 8.6 percent of total (in 1998) U.S. prescription drug spending. See Generic Pharmacy Industry Association, "Generic Share of U.S. Market," Facts and Figures, www.gpia.org/edu_facts.html.

⁶ Congressional Budget Office, *How Increased Competition from Generic Drugs Has Affected Prices and Returns in the Pharmaceutical Industry*, July 1998, <http://www.cbo.gov/showdoc.cfm?index=655&sequence=4>.

⁷ The U.S. General Accounting Office found that FSS prices for one cluster of drugs averaged 52 percent below the average non-federal manufacturers' prices. See United States General Accounting Office, *Drug Prices: Effects of Opening Federal Supply Schedule for Pharmaceuticals Are Uncertain*, Washington: The Office, June 1997, GAO/HEHS-97-60, p. 7. Merrill Lynch estimated the average FSS discount enjoyed by the Veterans Administration at 40 percent. See Merrill Lynch, *Pharmaceuticals: A Medicare Drug Benefit: May Not Be So Bad*, New York: Merrill Lynch, 23 June 1999, p. 2.

⁸ For the 1997 price data, see Patented Medicine Prices Review Board, *Trends in Patented Drug Prices*, Ottawa: The Board, September 1998, PMPRB Study Series S-9811, <http://www.pmprb-cepmb.gc.ca/pdf/rm-pat-e.pdf>. For the 1998 data, see Patented Medicine Prices Review Board, *Eleventh Annual Report*, Year Ending December 21, 1998, Ottawa: The Board, 1999, p. 21, figure 9, <http://www.pmprb-cepmb.gc.ca/>.

Those reports present other nations' average prices as a percentage of Canadian prices. We converted those data to show other nations' prices as a percentage of U.S. prices.

That Canadian Board confirmed its data on prescription drug prices charged by manufacturers in six other countries by comparing information from two separate sources—figures filed by the manufacturers with the Board, and figures calculated from publicly available data in each country—as described in another report. See Patented Medicine Prices Review Board, *Verification of Foreign Patented Drug Prices*, Ottawa: The Board, September 1998, PMPRB Study Series S-9812, <http://www.pmprb-cepmb.gc.ca/pdf/rm-vere.pdf>

Prices are weighted by net sales. This means that the price ratios reflect not only the differences in prices across nations, but the amount of each type of medication sold. For

example, if medication A is prescribed twice as often as medication B, then medication A will have twice as much influence as medication B when the international price ratios are calculated.

These prices reported to the Board are supposed to be the prices actually paid to manufacturers, after rebates, discounts, promotions, and the like.

In 1998, however, the Board concluded that the data which manufacturers were filing on their prices in the U.S. were overestimates, because they did not report on the discounted prices provided to the Veterans Administration and some other federal programs under the "Federal Supply Schedule." See Patented Medicine Prices Review Board, *U.S. Prices: Department of Veterans Affairs Formulary*. The Board, September 1998 (attachment to PMPRB report, *Road Map for the Next Decade*). <http://www.pmprb-cepmb.gc.ca/pdf/rm-us-dvae.pdf>. Viewed across the U.S., these public sector discounts and rebates are considerable, both in dollar terms and as a percentage of manufacturers' pre-discounted prices. But they do not represent a large share of spending on medications nationally or in any one state. For that reason, and because they would not be affected by state legislation, they are not considered in this report.

In addition, drug manufacturers might claim that price comparisons like these made by the PMPRB overstate U.S. prices by ignoring private sector discounts and rebates. But it is the manufacturers who have apparently refused to disclose the size of these private sector discounts and rebates.

The present report reports new estimates of the size of these secret private sector discounts and rebates. In the six southwest states, it appears that they average some 8.9 percent of pre-discounted manufacturers' prices, as shown in Exhibit 8. The Appendix on Methods describes the method by which the 8.9 percent figure was calculated.

⁹ The 8.7 percent figure is our best current estimate of the size of public and undisclosed discounts and rebates in the U.S. as a whole. It was calculated using data for the United States as a whole, and is slightly lower than the 8.9 percent figure calculated for the six southwest states (see previous endnote and appendix on methods). It is inserted as an estimate of the saving from undiscounted U.S. prices. This estimate reflects the share of brand name prescription drugs bought by uninsured individuals, private third parties, Medicaid programs, and institutional purchasers in the United States, as well as the rebates paid by drug makers to each state's Medicaid program.

¹⁰ Beginning with data reported in its recently-issued report for 1999, the PMPRB began taking account of U.S. government discounts for the Department of Veterans Affairs and for the military. We are examining these new data and will report on them in a subsequent study.

¹¹ See, for example, Pharmaceutical Research and Manufacturers of America, *Pharmaceutical Industry Profile 2000*, Chapter 7, page 96, http://www.phrma.org/publications/industry/profile00/PhRMA_Chapter7b.pdf.

¹² Office of the Actuary, Health Care Financing Administration, "National Health Expenditures, 1998, Highlights," 11 January 2000, Table 2, www.hcfa.gov/sats/nhe-oact/hilites.htm. These estimates assume that prescription drug spending and overall health spending both rise as fast as they did between 1997 and 1998. (This may be somewhat conservative in both cases.)

¹³ Several private communications to the authors.

¹⁴ Watson Wyatt Worldwide, "Medical, Dental, and Prescription Drug Increases Pick Up Steam," in *Health Care Costs 2001: A Washington Business Group on Health/Watson Wyatt Worldwide Survey*, www.watsonwyatt.com/homepage/us/res/hcc20001-tm.htm.

¹⁵ National Pharmaceutical Council, *Pharmaceutical Benefits under State Medical Assistance Programs*, Reston, Virginia: The Council, 1997 and 1999 editions. The Council obtains data on rebates from HCFA 64 Medicaid Financial Management Report. It obtains data on total drug spending from HCFA (CMSO) HCFA-2082 reports.

¹⁶ For a disturbing description of one drug maker's marketing efforts, see Melody Petersen, "What's Black and White and Sells Medicine?" *New York Times*, 27 August 2000.

¹⁷ National Association of Chain Drug Stores, www.nacds.org/industry/industry_fr.html.

¹⁸ See Gina Kolata, "Estrogen Heart Study Proves Discouraging," *New York Times*, 24 August 2000.

¹⁹ For example, two New Hampshire studies showed that, for a low-income population unable to pay for prescription drugs, the state's former policy of denying Medicaid coverage for more than three prescriptions per month led to increased institutionalization of frail elders and soaring use of emergency mental health services. Stephen B. Soumerai and others, "Effects of Medicaid Drug-Payment Limits on Admission to Hospitals and Nursing Homes," *New England Journal of Medicine*, Vol. 325 (1991), pp. 1072-7; Stephen B. Soumerai and others, "Effects of Limiting Medicaid Drug-Reimbursement Benefits on the Use of Psychotropic Agents and Acute Mental Health Services by patients with Schizophrenia," *New England Journal of Medicine*, Vol. 331, No. 10, 8 September 1994, pp. 650-5

²⁰ National Association of Chain Drug Stores, "The Facts about Prescription Drug Pricing," Alexandria, Virginia: NACDS, 1999 (unpublished draft), 3rd quarter 1998, chain drugs stores only.

²¹ Estes Kefauver, *In a Few Hands: Monopoly Power in America*, New York: Pantheon, 1965, pp. 34-35.

²² See, for example, U.S. General Accounting Office, *Prescription Drugs: Companies Typically Charge More in the United States than in Canada*, Washington: The Office, September 1992, GAO/HRD-92-110; U.S. General Accounting Office, *Prescription Drugs: Companies Typically Charge More in the United States than in the United Kingdom*, Washington: The Office, January 1994, GAO/HEHS-94-29; U.S. General Accounting Office, *Prescription Drugs: Spending Controls in Four European Countries*, Washington: The Office, May 1994, GAO/HEHS-94-30; U.S. General Accounting Office, *German Health Reforms: Changes Result in Lower Health Costs in 1993*, Washington: The Office,

December 1994, GAO/HEHS-95-27. These estimates rest on comparisons of the manufacturers' prices— also called factory prices (the prices that manufacturers charge wholesalers)— charged for the same drug, in the same form and dose, in different countries.

²³ U.S. General Accounting Office, Prescription Drugs: Companies Typically Charge More in the United States Than in the United Kingdom, Washington: GAO, January 1994, GAO/HEHS-94-29, pp. 4, 7, 24.

²⁴ Karen Donelan, Robert J. Blendon, Cathy Schoen, Karen Davis, and Katherine Binns, "The Cost of Health Care System Change: Public Discontent in Five Nations," *Health Affairs*, Vol. 18, No. 3 (May – June 1999), pp. 206-216, exhibit 6.

²⁵ See, for example, Gregory Kesich, "Ailing Mainers lobby for cap on drug prices," *Portland Press Herald*, 9 March 2000, www.portland.com/news/drugprices0309.shtml; Ross Sneyd, "New England Lawmakers taking on drug prices again," Associated Press, 7 February 2000; Eric Schmitt, "Politics Stalls Congressional Action on Medicare Drug Benefits," *The New York Times*, 27 February 2000; Michael Lasalandra, "Menino leads nation with drug-cost plan," *Boston Herald*, 27 January 2000, www.bostonherald.com/bostonherald/lonw/drug01272000.htm

²⁶ Chilton Research Services, Survey on the Need for a Prescription Drug Benefit Under the Medicare Program, American Association of Retired Persons, June 1992, p. 4. That survey may underestimate the share of the population with difficulty paying for medications, because it included only English-speaking households with telephones.

²⁷ Martha R. Burt, *Hunger Among the Elderly: Local and National Comparisons*, Washington, D.C.: The Urban Institute, 1993, as cited in Families USA Foundation, *Better Benefits: Millions Helped by Clinton Reform*, Washington, D.C.: The Foundation, December 1993, p. 4.

²⁸ *Genesis*, 41:25-27.

²⁹ Neil Munro, "Technology: Frontier Ethics," *National Journal*, 4 June 99.

³⁰ "Glaxo Leads UK Drugs up after Clinton Speech," *Dow Jones Newswires*, 28 January 2000.

³¹ See, for example, Mandy Ryan and Stephen Birch, "Charging for Health Care: Evidence on the Utilisation of NHS Prescribed Drugs," *Social Science and Medicine*, Vol. 33, No. 6 (1991), pp. 681-687; B. O'Brien, "The Effect of Patient Charges on the Utilisation of Prescription Medicines," *Journal of Health Economics*, Vol. 8, No. 1 (March 1989), pp. 109-132; R.J. Lavers, "Prescription Charges, the Demand for Prescriptions, and Morbidity," *Applied Economics*, Vol. 21 (1989), pp. 1043-1052.

³² Merrill Lynch, "Pharmaceuticals: A Medicare Drug Benefit: May Not Be So Bad," 23 June 1999.

³³ Ian McDonald, "10 Questions With Merrill Lynch Healthcare Manager Jordan Schreiber," *TheStreet.com*, Fund Watch I, 14 August 2000, http://biz.yahoo.com/ts/000814/fund1_000814.html

³⁴ Taking the manufacturer's share of the retail dollar at 74 percent, as discussed earlier.

³⁵ Alan Sager and Deborah Socolar, *Affordable Medications for Americans*, Report for the Prescription Drug Task Force, United States House of Representatives, 27 July 1999, Exhibit 11, <http://www.house.gov/berry/prescriptiondrugs/Resources/sager.pdf>.

³⁶ Elyse Tanouye, "Drug Dependency: U.S. Has Developed an Expensive Habit: Now, How to Pay for It?" *Wall Street Journal*, 16 November 1998.

³⁷ Jeff Gerth and Sheryl Gay Stolberg, "Medicine Merchants: Birth of a Blockbuster; Drug Makers Reap Profits on Tax-backed Research," *New York Times*, 23 April 2000.

³⁸ Patricia Sunseri, "FTC Antitrust Complaint vs. Mylan," 23 December 1998, www.genericaccess.com/info.html.

³⁹ The marginal cost is a greater percentage of the manufacturers' prices because manufacturers take 74 percent of the retail dollar, on average. The marginal cost as a percentage of manufacturer's price is 6.8 percent, at today's manufacturers' prices. (That is, 5 percent divided by the manufacturers' 74 percent share of the retail dollar equals 6.8 percent.) If manufacturers' prices are cut down to the Federal Supply Schedule price, the average price reduction in the six states would rise from 8.7 percent to 42 percent, as shown in Part I of this report. Then, the marginal cost rises to roughly 10.7 percent of the lower manufacturers' price. But the dollar cost of making more pills remains unchanged, and so—therefore—does the cost of compensating drug makers for the additional volume of medications.

(This is calculated as follows: Set today's manufacturers' price index at \$91.1 (a \$100 price index minus today's six-state overall 8.9 percent discount plus rebate). Then, take 6.8 percent of \$91.1. That equals \$6.20. And \$6.20 is 10.7 percent of \$58.0 (\$100 minus the FSS price reduction of 42 percent.)

⁴⁰ PhRMA, *Pharmaceutical Industry Profile 2000*, Appendix: Detailed Results from the PhRMA Annual Survey, Table 20.

⁴¹ PhRMA, "Do Price Controls Hurt Pharmaceutical Research? Recent History Says, 'Yes,'" PhRMA Facts & Figures, August 1999, www.phrma.org/facts/phfacts/8%5F99.html.

⁴² See, for example, Li Fellers, "The Medicine Market," *Washington Post*, 31 May 1998, pp. W-10 ff; also see Merrill Goozner, "The Price Isn't Right," *The American Prospect*, Vol. 11, No. 20, 11 September 2000, <http://www.americanprospect.com/archives/V11-20/gozner-m.html>.

⁴³ Top ten U.S. pharmaceutical companies as ranked by sales in 1998. Calculated from Maura Kealey, Public Citizen's Congress Watch, testimony before the House Judiciary Subcommittee on Courts and Intellectual Property, 1 July 1999, corrected 22 July 1999, <http://www.citizen.org/congress/drugs/letters/hr1598testimony.html>

⁴⁴ As discussed in section 4, which follows.

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- ⁴⁵ “GlaxoSmithKline CEO Promises to Invest Savings in R&D,” *Pharmaceutical Executives Healthcare Marketing and Media*, 20 April 2000, www.healthcaremedia.com.
- ⁴⁶ PhRMA, “Facts & Figures: Backgrounders: The Pharmaceutical Industry’s R&D Investment,” www.phrma.org/facts/bkgrnder/invest.html.
- ⁴⁷ Joseph DiMasi, R.W. Hansen, H.G. Grabowski, and Louis Lasagna, “Cost of Innovation in the Pharmaceutical Industry,” *Journal of Health Economics*, Vol. 10, No. 2 (1991), pp. 235-238.
- ⁴⁸ See, for example, the comments of Nelson Levy, former head of research and development at Abbott Laboratories, cited in Jeff Gerth and Sheryl Gay Stolberg, “Medicine Merchants: Birth of a Blockbuster: Drug Makers Reap Profits on Tax-backed Research,” *New York Times*, 23 April 2000. See also the work of Jamie Love, Director, Consumer Project on Technology, www.cptech.org/ip/health/econ.
- ⁴⁹ Jeff Gerth and Sheryl Gay Stolberg, “Drug Companies Profit From Research Supported by Taxpayers,” *The New York Times*, 23 April 2000, <http://www.nytimes.com/library/national/science/health/042300hth-drugs2.html>
- ⁵⁰ PhRMA, *Pharmaceutical Industry Profile 2000*, Appendix: Detailed Results from the PhRMA Annual Survey, Table 1, http://www.phrma.org/publications/industry/profile00/PhRMA_Tables.pdf.
- ⁵¹ United States Senate Special Committee on Aging, *The Drug Manufacturing Industry: A Prescription for Profits*, Washington: Government Printing Office, September 1991, p. 5, Serial No. 102-F, <http://www.house.gov/berry/prescriptiondrugs/Resources/pryor.pdf>.
- ⁵² Merrill Goozner, “The Price Isn’t Right,” *The American Prospect*, Vol. 11, No. 20, 11 September 2000, <http://www.americanprospect.com/archives/V11-20/goozner-m.html>. Goozner also reports that “FDA statistics for the 1990s suggest that about half of the industry research is aimed at developing me-too drugs.”
- ⁵³ Calculations from PhRMA data. For share of company-financed 1997 R&D by country, see *Pharmaceutical Industry Profile 2000*, PhRMA, April 2000, Fig. 7-1, http://www.phrma.org/publications/industry/profile00/PhRMA_Chapter7b.pdf. Health expenditure data for 1997 from OECD Health Data 99; see <http://www.oecdwash.org/PRESS/PRESRELS/1999/99013tb1.pdf>
- ⁵⁴ Melody Petersen, “What’s Black and White and Sells Medicine,” *New York Times*, 27 August 2000.
- ⁵⁵ See, for example, Pharmaceutical Research and Manufacturers of America (PhRMA), *Pharmaceutical Industry Profile, 1999*, www.phrma.org/publications/industry/profile99/, especially chapter 7. See also PhRMA, “International Price Comparisons,” *Industry Issue Brief, 1994*; and Patricia Danzon, “The Uses and Abuses of International Price Comparisons,” in Robert B. Helms, ed., *Competitive Strategies in the Pharmaceutical Industry*, Washington: AEI Press, 1996.
- ⁵⁶ Heinz Redwood, *Price Regulation and Pharmaceutical Research*, Suffolk, U.K.: Oldwicks Press, 1993; David Gross and others, “International Spending Controls: France, Germany,

Sweden, and the United Kingdom,” *Health Care Financing Review*, Vol. 15, No. 3 (1994), pp. 127-140; PhRMA, “International Price Comparisons,” *Industry Issue Brief*, 1994; and The Boston Consulting Group, *Ensuring Cost-effective Access to Innovative Pharmaceuticals: Do Market Interventions Work?* April 1999 (Sponsored by Warner-Lambert Company).

⁵⁷ PhRMA, “U.S. Companies Are Doing More Than a Third of the World’s Pharmaceutical R&D,” PhRMA Facts and Figures, August 1997, www.phrma.org/facts/phfacts/8_97a.html.

⁵⁸ PhRMA, “40 New Medicines in 1999; \$26.4 Billion Projected for R&D in 2000 to Ensure More Medicines in 21st Century, Says PhRMA,” PhRMA News Release, 18 January 2000, www.phrma.org/news/1-18-00.html.

⁵⁹ See, for example, PhRMA, “Do Price Controls Hurt Pharmaceutical Research? Recent History Says ‘Yes,’” PhRMA Facts and Figures, August 1999, www.phrma.org/facts/phfacts/8_99.html; Alan F. Holmer (President, PhRMA), “Another Prescription Plan,” Letter to the Editor, *The Boston Globe*, 11 February 1999; and PhRMA, “Taxing the Pharmaceutical Industry,” PhRMA Backgrounder, 12 January 2000, www.phrma.org/facts/bkgrndr/taxing.html.

⁶⁰ See our calculations from Fortune 500 annual data, in Alan Sager and Deborah Socolar, *Affordable Medications for Americans*, Report for the Prescription Drug Task Force, United States House of Representatives, 27 July 1999, <http://www.house.gov/berry/prescriptiondrugs/Resources/sager.pdf>

⁶¹ See our calculations from Fortune 500 annual data, in Alan Sager and Deborah Socolar, *Affordable Medications for Americans*, Report for the Prescription Drug Task Force, United States House of Representatives, 27 July 1999, <http://www.house.gov/berry/prescriptiondrugs/Resources/sager.pdf>

⁶² Alan Sager and Deborah Socolar, *Affordable Medications for Americans*, Report for the Prescription Drug Task Force, United States House of Representatives, 27 July 1999, <http://www.house.gov/berry/prescriptiondrugs/Resources/sager.pdf>

⁶³ National Institute for Health Care Management, *Prescription Drugs and Intellectual Property Protection*, Washington: NICHM Research and Educational Foundation, 24 July 2000, p. 2, and p. 6, Figure 4, <http://www.nihcm.org/prescription.pdf> Similarly, see Henry J. Kaiser Family Foundation, *Prescription Drug Trends: A Chartbook*, Menlo Park, CA: The Foundation, July 2000, p. 65, and p. 69, Exhibit 4.4, <http://www.kff.org/content/2000/3019/PharmFinal.pdf>

⁶⁴ “Mergers Could Kill Competition for Drugs, Spur Price Hikes,” Associated Press, 28 January 2000.

⁶⁵ See, for example, U.S. Federal Trade Commission, “FTC Charges Drug Manufacturers with Stifling Competition in Two Prescription Drug Markets,” Press Release, 16 March 2000, <http://www.ftc.gov/opa/2000/03/hoechst.htm>; John Martin, “Conspiracy to Fix Drug Prices: Drug Makers Keep Generic Drugs Off the Market,” 16 March 2000, http://abcnews.go.com/onair/CloserLook/wnt_000315_CL_genericdrugs_feature.html; Ronald Rosenberg, “Drug Makers Seeks Curb on Sale of Generic Cyclosporin,” *Boston*

Globe, 7 April 2000; Michael F. Cannon, "Suppressing Generic Drugs Fleeces Consumers," Citizens for a Sound Economy Foundation *Issue Analysis*, No. 86, 25 February 1999; "The High Price of Drugs," ABC News, 20/20, 23 July 1999, www.abcnews.go.com/onair/2020/transcripts/2020_990723_drugs_trans.html; and Sheryl Gay Stolberg and Jeff Gerth, "How Companies Stall Generics and Keep Themselves Healthy," *The New York Times*, 23 July 2000, <http://www.nytimes.com/library/national/science/health/072300hth-generic-drugs.html>

⁶⁶ For PhRMA's opposition, see Pharmaceutical Research and Manufacturers of America, "Access Restrictions Hurt Patients and Health Care's Bottom Line," *PhRMA Facts & Figures, Background*, 20 August 1999, www.phrma.org/facts/bkgrndr/access.html. One example is the recent campaign against a Massachusetts program to combine state employees and retirees, Medicaid patients, and Medicare recipients to win lower prices by combining purchasing power and by restricting choice through a formulary.

⁶⁷ "IMS Says Spending More on Rx Could Mean Less Total Health Costs," IMS Press Release, 31 March 1998, http://ims-america.com/communications/pr_LessHealthCost.htm; Louis Lasagna, "Rx: A Heftier Share for Prescription Drugs: Giving Medicine More of the Health Care Pie Could Cut Costs and Aid Patients," *Boston Sunday Globe Focus*, 29 November 1998.

⁶⁸ For one recent comparison of the Medicare options, see Health Policy Alternatives, *Prescription Drug Coverage for Medicare Beneficiaries: A Side-by-side Comparison of Selected Proposals*, March 2000, Commissioned by the Henry J. Kaiser Family Foundation, www.kff.org/content/2000/1541.

⁶⁹ <http://janus.state.me.us/legis/billtexts/LD259901-1.asp>.

⁷⁰ U.S. pharmaceutical spending per person reported by OECD was \$319 in 1997. This made it fourth-highest in the world in 1997, according to OECD estimates. Organization for Economic Cooperation and Development, *OECD Health Data, 1998*, reported by Pharmaceutical Research and Manufacturers Association, 1999, www.phrma.org/publications/industry/profile99/figures99/7-7.html. Taking into account the United States' much-higher-than-average rise in drug spending, we have estimated that drug spending per person in the United States vaulted into first place by 1999. In doing so, we relied on spending increases from 1997 to 1998 from IMS Health, "Market Report," in www.ims-global.com/insight/report/world_market/report.htm and trended those rates of increase forward to 1999 and 2000.

⁷¹ By one estimate, Americans bought 39.6 percent of the world's drugs in 1998, as measured in manufacturers' revenues, not in use of medications. See PhRMA Industry Profile, 2000, citing IMS Health data, 2000, www.phrma.org/publications/industry/profile00/figure/7-2.htm.

⁷² This rests on our own estimates and on conversations with industry sources.

⁷³ Pharmaceutical Research and Manufacturers of America, *Annual Member Survey, Detailed Results*, Table 12, "Sales, Research-based Pharmaceutical Companies," http://www.phrma.org/publications/industry/profile00/PhRMA_Tables.pdf. These are sales net of rebates and discounts.

⁷⁴ This \$102.1 billion figure rests on our estimate of total U.S. prescription drug spending of \$120 billion in 1999. (Alan Sager and Deborah Socolar, *Affordable Medications for Americans*, Report for the Prescription Drug Task Force, United States House of Representatives, 27 July 1999, <http://www.house.gov/berry/prescriptiondrugs/Resources/sager.pdf>.)

We updated the \$120 billion 1999 estimate to 2000, and then calculated the manufacturer's share. The underlying \$120 billion figure was calculated in this way:

a) We estimated 1999 U.S. retail spending on prescription drugs. (Retail spending excludes spending in hospitals and most spending in nursing homes.) To do so, we began with reported actual 1997 retail prescription drug spending and increased it by 14.2 percent annually to estimate the 1999 level. Retail prescription drug spending rose by 14.2 percent from 1996 to 1997. (It actually rose by 15.4 percent from 1997 to 1998, and appears to have risen even more rapidly from 1998 to 1999. For example, IMS Health reports a 16.1 percent rise in drug sales through U.S. retail pharmacies from January 1999 to January 2000. See IMS Health, *Drug Monitor, 12 Months to January 2000*, www.imshealth.com. This factor tends to make our estimate of \$120 billion too low.)

b) We then added estimated non-retail spending. In 1997, Pharmaceutical Research and Manufacturers of America reported total sales for human use in the U.S. market, net of discounts and rebates, of \$65.9 billion.

c) We assumed that this figure of \$65.9 billion for actual manufacturers' revenue comprised 74 percent of retail sales, so we divided \$65.9 billion by 0.74 to reach estimated actual total drug costs to patients and other payors. This assumes that hospital and nursing home mark-ups were not different from retail mark-ups.

d) In 1997, retail prescription drug spending of \$78.9 billion, as reported by Levit and others (Katharine Levit and others, "National Health Expenditures in 1997: More Slow Growth," *Health Affairs*, Vol. 17, No. 6 (November/December 1998), pp. 99-110, Exhibit 1) was 88.6 percent of the total drug spending (including spending in hospitals and nursing homes) that was estimated by steps b and c. We applied that ratio to estimated 1999 retail prescription drug spending in order to estimate 1999 total drug spending. The \$120 billion figure resulted.

We then projected total U.S. prescription drug spending for 2000 by adding 15 percent to the 1999 estimate, yielding projected 2000 total spending of \$138 billion nationally. This seems reasonable in light of the 15.4 percent rise in U.S. retail spending on prescription drugs between 1997 and 1998 (though it may be somewhat conservative, as spending may have risen even faster between 1998 and 2000).

⁷⁵ Interestingly, our own base estimate of \$120 billion for 1999 may well be conservative, in part because it employs a modest estimate of the spending increase between 1998 and 1999, and in part because it does not include either generics or brand name drugs sold by non-PhRMA members or their subsidiaries. Schondelmeyer has estimated total spending in the "consumer pharmacy market for prescription drugs" in 1998 at \$102 billion. Adding

hospital and nursing home spending for 1998 yields an estimate of total drug spending in 1998 of \$115.1 billion. Increasing the total by an estimated 15.4 percent spending rise between 1998 and 1999 yields an estimate of \$132.9 billion in total prescription drug spending in the U.S. in 1999. Raising this figure by 15 percent yields an estimate of \$152.8 billion for 2000.

PhRMA's own base estimate of \$105.6 billion also excludes U.S. sales of generic and brand name drugs by non-PhRMA members. These are mainly generic drugs.

⁷⁶ This is strongly suggested by the list of PhRMA members. See www.phrma.org/membership/memlist.html.

⁷⁷ These were sales in the retail base used for the CBO's study. See Congressional Budget Office, *How Increased Competition from Generic Drugs Has Affected Prices and Returns in the Pharmaceutical Industry*, Washington: The Office, July 1998, chapter 3, p. 17, www.cbo.gov/showdoc.cfm?index=655&sequence=4.

⁷⁸ Generic Pharmaceutical Industry Association, *Facts & Figures*, "Brand vs. Generic Prescription Sales, % Dollars Spent (Retail). These are 1998 data. See www.gpia.org/edu_genshare1.html.

⁷⁹ Data on retail sales from IMS Market View, as reported in Ciba Geneva Pharmacy Report. Published in National Association of Chain Drug Stores, *The Chain Pharmacy Industry Profile*, Alexandria, Virginia: The Association, 1999, table 23, pp. 22-23.

⁸⁰ Data from IMS suggest that the non-retail sector is slightly larger, about 14 percent of the market. See Office of the Assistant Secretary for Planning and Evaluation, Department of Health and Human Services, *Prescription Drug Coverage, Spending, Utilization, and Prices*, Washington: The Office, 11 April 2000, chapter 3, pp. 106-107, <http://aspe.hhs.gov/health/reports/drugstudy/>.

⁸¹ IMS Market View, as reported in Ciba Geneva Pharmacy Report. Published in National Association of Chain Drug Stores, *The Chain Pharmacy Industry Profile*, Alexandria, Virginia: The Association, 1999, table 23, pp. 22-23.

⁸² United States General Accounting Office, *Pharmacy Benefit Managers: FEHBP Plans Satisfied with Savings and Services, but Retail Pharmacies Have Concerns*, Washington: The Office, February 1997, GAO/HEHS-97-47, pp. 9-11.

⁸³ United States General Accounting Office, *Pharmacy Benefit Managers: FEHBP Plans Satisfied with Savings and Services, but Retail Pharmacies Have Concerns*, Washington: The Office, February 1997, GAO/HEHS-97-47, pp. 12-15.

⁸⁴ The 10 percent average is intended to reflect the experience of both traditional insurers and managed care organizations. It covers the range of existing discounts and rebates—from very low percentages to the higher ones achieved through tight formularies that channel business to some drug makers in exchange for lower prices, and through other means. The Federal Supply Schedule prices would reflect the lowest prices received by private purchasers. The average FSS reduction from manufacturers' prices is 42 percent.

⁸⁵ Haiden A. Huskamp, Meredith B. Rosenthal, Richard G. Frank, and Joseph P. Newhouse, "The Medicare Prescription Drug Benefit: How Will the Game Be Played?" *Health Affairs*, Vol. 19, No. 2 (March – April 2000), pp. 8-23.

⁸⁶ United States General Accounting Office, *Pharmacy Benefit Managers: FEHBP Plans Satisfied with Savings and Services, but Retail Pharmacies Have Concerns*, Washington: The Office, February 1997, GAO/HEHS-97-47, pp. 9-11.

⁸⁷ Congressional Budget Office, *How Increased Competition from Generic Drugs Has Affected Prices and Returns in the Pharmaceutical Industry*, Washington: The Office, July 1998. Cited in Office of the Assistant Secretary for Planning and Evaluation, Department of Health and Human Services, *Prescription Drug Coverage, Spending, Utilization, and Prices*, Washington: The Office, 11 April 2000, chapter 3, pp. 106-107, <http://aspe.hhs.gov/health/reports/drugstudy/>.

⁸⁸ This categorization draws in part on distinctions set out in Congressional Budget Office, *How Increased Competition from Generic Drugs Has Affected Prices and Returns in the Pharmaceutical Industry*, Washington: The Office, July 1998, chapter 1, p. 2, www.cbo.gov/showdoc.cfm?index=655&sequence=2.

⁸⁹ Congressional Budget Office, *How Increased Competition from Generic Drugs Has Affected Prices and Returns in the Pharmaceutical Industry*, Washington: The Office, July 1998, summary, p.4, www.cbo.gov/showdoc.cfm?index=655&sequence=1.

⁹⁰ Congressional Budget Office, *How Increased Competition from Generic Drugs Has Affected Prices and Returns in the Pharmaceutical Industry*, Washington: The Office, July 1998, chapter 3, p. 14, www.cbo.gov/showdoc.cfm?index=655&sequence=4.

⁹¹ Congressional Budget Office, *How Increased Competition from Generic Drugs Has Affected Prices and Returns in the Pharmaceutical Industry*, Washington: The Office, July 1998, summary, p.4, www.cbo.gov/showdoc.cfm?index=655&sequence=1.

⁹² For the 1997 price data, see Patented Medicine Prices Review Board, *Trends in Patented Drug Prices*, Ottawa: The Board, September 1998, PMPRB Study Series S-9811, <http://www.pmprb-cepmb.gc.ca/pdf/rm-pat-e.pdf>. For the 1998 data, see Patented Medicine Prices Review Board, *Eleventh Annual Report, Year Ending December 21, 1998*, Ottawa: The Board, 1999, p. 21, figure 9, <http://www.pmprb-cepmb.gc.ca/>.

Those reports present other nations' average prices as a percentage of Canadian prices. We converted those to ratios of other nations' prices to U.S. prices.

That Canadian Board confirmed its data on prescription drug prices charged by manufacturers in six other countries by comparing information from two separate sources—figures filed by the manufacturers with the Board, and figures calculated from publicly available data in each country—as described in another report. See Patented Medicine Prices Review Board, *Verification of Foreign Patented Drug Prices*, Ottawa: The Board, September 1998, PMPRB Study Series S-9812, <http://www.pmprb-cepmb.gc.ca/pdf/rm-vere.pdf>

In 1998, the Board concluded, however, that the data which manufacturers were filing on their prices in the U.S. were overestimates, because they did not report on the discounted prices provided to the Veterans Administration and some other federal programs under the "Federal Supply Schedule." See Patented Medicine Prices Review Board, *U.S. Prices: Department of Veterans Affairs Formulary*. The Board, September 1998 (attachment to PMPRB report, *Road Map for the Next Decade*). <http://www.pmprb-cepmb.gc.ca/pdf/rm-us-dvae.pdf> .

In its new report for 1999, the PMPRB presented U.S. price data excluding and including FSS prices from the averages reported. (See Patented Medicine Prices Review Board, *Twelfth Annual Report*, 14 June 2000, figure 8, p. 23.) Including FSS prices drops the reported U.S. prices from 174.1 percent of the Canadian level down to 161.9 percent. This is surprising, given the relatively small share of U.S. drugs now purchased under the FSS, principally for the Department of Veterans Affairs and the military. We are reviewing these new data and may incorporate them in our next report on international price comparisons.

⁹³ Since this portion of our analysis was completed, the PMPRB released 1999 data. See Patented Medicine Prices Review Board, *Twelfth Annual Report*, 14 June 2000.