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Memorandum

December 13, 1999

TO : Joint Economic Committee
Attention: Mike Kapsa

FROM : Gary Guenther
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Government and Finance

SUBJECT : Federal Taxation of the Drug Industry from 1990 to 1996

Responding to your request, this memorandum analyzes certain aspects of federal taxation of the drug industry. Specifically, it examines the federal income taxes paid by the industry from 1990 to 1996, the most recent year for which figures on tax liability by industry are available, and it compares the industry's average effective tax rate over that period with that of major industries. The rate is a measure of the industry's tax burden, and it compares its U.S. income tax liability with the industry's worldwide taxable income. The memorandum also assesses the drug industry's exposure to the alternative minimum tax and identifies the tax provisions from which it derives significant benefits.

At least three significant conclusions emerge from this analysis. One is that net income in the drug industry was taxed relatively lightly between 1990 and 1996, despite earning relatively high rates of return on shareholder equity. Another conclusion is that the drug industry was little affected by the corporate alternative minimum tax in that period, mainly because of its rising profits and relatively low level of investment in assets whose depreciation is treated less generously under the AMT than under the regular corporate income tax. And lastly, it appears that the drug industry realized significant tax savings from five tax provisions: the foreign tax credit, the possessions tax credit, the research and experimentation tax credit, the orphan drug tax credit, and the expensing of research expenditures. It should be noted that the foreign tax credit is, strictly speaking, not a tax benefit because its intent is to prevent the double taxation in the United States of income earned abroad.

If you have any questions about this analysis, please call me at 7-7742.

Federal Income Taxation of the Drug Industry Between 1990 and 1996

Federal taxation of drug industry income affects the incentive to invest in the development new therapeutic drugs through its impact on the cost of capital for drugmakers. Increases in the industry's marginal effective rate of taxation raise this cost of capital, and when the cost of capital rises, drug firms in general can afford to undertake fewer new drug development projects than they otherwise would.

The federal income tax liability of the drug industry from 1990 to 1996 is shown in table 1. The figures include any alternative minimum taxes owed by drug firms. During this period, domestic sales of pharmaceutical products and drug industry profits rose rapidly. This rapid growth is reflected in the 46% increase in the industry's income tax liability between 1990 and 1996. It is also clear from the data in the table that the industry substantially lowered its tax liability in that period by claiming a variety of tax credits. In 1995, for example, the industry's tax bill after credits was less than 50% of its tax bill before credits.

Table 1. Federal Income Tax Liability for the Drug Industry, 1990 to 1996 (figures in millions of dollars)

Year	Taxable Income	Income Tax Before Credits	Income Tax After Credits
1990	15,934	5,482	2,452
1991	17,452	6,026	2,589
1992	19,920	6,920	3,069
1993	19,997	7,092	2,765
1994	24,837	8,752	4,313
1995	23,963	8,502	3,989
1996	24,810	8,016	4,240

Source: Internal Revenue Service. Statistics of Income Division. *Corporation Source Book.* Washington, U.S. Govt. Print. Off., 1990 to 1996.

Average Effective Tax Rates for the U.S. Drug Industry and Major U.S. Industries from 1993 to 1996

The average effective tax rate for an industry is a measure of its tax burden. In theory, the rate is simply the ratio of income taxes paid to economic income expressed as a percent. As such, it combines all the tax provisions that affect the industry, including those that reward and those that penalize certain activities and shows the burden of income taxes on the returns to an industry's investments. In practice, however, it is very difficult to sort out the economic income of an industry

for tax purposes because of the exclusions, deductions, and deferrals of income it can claim. So analysts are forced to use the definition of taxable income under the federal tax code.

Table 2 shows the average effective tax rates for the drug industry and major industries from 1993 to 1996. A notable finding is that the drug industry's rate is lower – much lower in some cases – than that of every major industry listed in table 2, including manufacturing of which the drug industry is a part, despite its relatively high profitability in that period. From 1994 to 1998, the drug industry's after-tax profits as a percentage of sales averaged 17%; by contrast, the same rate for all industries was 5%.[1]

While it is not entirely clear from available tax data why the drug industry's profits are taxed more lightly than those of the major industries listed in table 2, there are several possible explanations. One relates to pharmaceutical R&D. Because innovation plays a vital role in competitive success and long-term growth in the drug industry, the industry is highly research-intensive. In 1997, for example, the U.S. pharmaceutical industry spent the equivalent of 20.3% of its domestic sales and exports on R&D. So one possible reason why the drug industry has a relatively low average effective tax rate is that it benefits more than most industries from tax provisions aimed at encouraging firms to invest in research and development. Another possible explanation for the industry's relatively low tax burden relates to its multinational structure. Many U.S. pharmaceutical firms have R&D, production, and sales operations abroad, and the major trade association for the U.S. pharmaceutical industry, Pharmaceutical Research and Manufacturers of America (PhRMA), reports that U.S. pharmaceutical firms sold $43.3 billion of drugs in foreign markets in 1998. The average effective tax rates shown in table 2 are the ratio of federal income tax liability after credits to worldwide taxable income, expressed as a percentage. If the drug industry earns relatively large shares of its worldwide taxable income from countries other than the United States, then its average effective tax rate could be lowered relative to other industries both by foreign tax credits it can claim for income taxes paid to foreign governments and income it earns in foreign countries but chooses not to repatriate.

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[1] Standard & Poor's Corporation. *Industry Surveys. Healthcare: Pharmaceuticals.* New York, July 29, 1999. P. 29. This is not to suggest that the drug industry's after-tax profitability was greater than that of every other industry. Depending on how one classifies firms by industry, there may be other industries with effective tax rates and rates of return similar to those for the drug industry.

Table 2. Average Effective Tax Rates[a] for the Drug Industry and Major Industries from 1993 to 1996 (%)

Industry	1993	1994	1995	1996	Average for 1993 to 1996
All Industries	27.4	27.4	27.7	26.7	27.3
Agriculture, Forestry, & Fishing	26.2	26.2	26.2	24.8	25.8
Mining	21.4	20.0	21.2	19.8	20.6
Construction	26.8	27.6	28.4	28.0	27.7
Manufacturing	21.9	23.6	23.1	21.9	22.6
Drugs	13.8	17.4	16.6	17.1	16.2
Transportation & Public Utilities	33.3	32.5	32.8	32.4	32.7
Wholesale & Retail Trade	31.5	30.8	30.4	30.7	30.8
Finance, Insurance, & Real Estate	31.1	29.7	31.3	30.1	30.5
Services	28.1	28.5	28.1	27.2	28.0

[a] The effective tax rate for an industry is the ratio of its U.S. income tax liability after credits to worldwide taxable income expressed as a percent.

Source: Internal Revenue Service. Statistics of Income Division. *Corporation Source Book.* Washington, U.S. Govt. Print. Off., 1993 to 1996.

Alternative Minimum Tax Liability for the Drug Industry from 1990 to 1996

The current corporate alternative minimum tax (AMT) is a result of the Tax Reform Act of 1986. Under current tax law, a corporation must compute its federal income tax liability under the regular tax and the AMT and pay the greater of the two. The AMT differs from the regular corporate income tax in two important ways. First, the tax base for the AMT is broader because it includes a number of tax preferences and sources of income that are excluded from the regular corporate income tax base. And second, the AMT has a statutory rate of 20%, which is considerably below the 35% rate at which most corporate income is taxed under the regular tax. Because of the structure of the AMT, capital-intensive firms with relatively high debt-to-equity

ratios are most likely to be subject to the AMT, especially during periods of declining sales or profits.[2]

Table 3. Corporate Alternative Minimum Tax Liability for the Drug Industry from 1990 to 1996 (millions of dollars unless noted otherwise)

	1990	1991	1992	1993	1994	1995	1996
AMT Liability	39	74	125	93	39	97	136
% of Income Tax Before Credits	0.7	1.2	1.8	1.3	0.4	1.1	1.7
Number of Firms Paying the AMT	NA	55	61	103	32	51	47
% of Firms Filing Corporate Income Tax Returns	NA	4.0	4.0	8.4	2.4	3.5	2.0

Source: Internal Revenue Service. Statistics of Income Division. *Corporation Source Book.* Washington, U.S. Govt. Print. Off., 1990 to 1996.

As the figures in table 3 make clear, the drug industry was little affected by the AMT between 1990 and 1996. On average, 4% of drug firms filing a federal corporate income tax return paid the AMT and the industry's total AMT liability came to a mere 1.2% of its total income tax liability before credits in that period. Given the structure of the AMT, such an outcome is hardly surprising. As was noted earlier, drug industry sales grew at a strong pace in the early-to-mid 1990s. Moreover, the drug industry tends to be less capital-intensive than most other industries, and the typical drug firm exhibits a relatively low long-term debt-to-capital ratio.[3]

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[2] Library of Congress. Congressional Research Service. *The Corporate Alternative Minimum Tax: Likely Economic Effects of Repealing It.* Report No. 96-311 E, by Gary Guenther. Washington, April 3, 1996. P. 14.

[3] Standard and Poor's Corporation. *Healthcare: Pharmaceuticals.* P. 29-30.

Tax Provisions That Provided Significant Tax Savings to the Drug Industry from 1990 to 1996

Like any industry seeking to earn the maximum after-tax profits, the drug industry takes advantage of a number of tax provisions that lower its federal income tax liability. As available corporate income tax statistics and a 1993 report by the Office of Technology Assessment make abundantly clear, five provisions in particular can and do generate significant tax savings for the industry: (1) the deduction (or expensing) of qualified research expenses under section 174 of the Internal Revenue Code (IRC); (2) the foreign tax credit (IRC section 861); (3) the possessions tax credit (IRC section 936); (4) the research and experimentation (R&E) tax credit (IRC section 41); and the orphan drug tax credit (IRC section 45).[4] Two of the provisions encourage drug firms to invest in pharmaceutical research and development (R&D) by increasing after-tax rates of return on investment in R&D relative to alternative investments: the expensing provision and the R&E tax credit. The orphan drug tax credit encourages drug firms to invest in the development of drugs to treat rare diseases by granting a tax credit equal to 50% of expenditures for human clinical trials on drug therapies that have received orphan status by the U.S. Food and Drug Administration. The possessions credit, which is being phased out under the Small Business Job Protection Act of 1996, encouraged drug firms to establish a significant manufacturing presence in Puerto Rico and other U.S. territorial possessions by giving a tax credit equal to the entire amount of federal income tax liability on possessions-source income. And the foreign tax credit is intended to prevent double taxation of foreign-source income; U.S.-based firms are permitted to credit tax payments to foreign governments against their federal income tax liability up to the amount of federal tax that would be owed on foreign-source income.

Table 4 shows the amounts of the four tax credits claimed by the industry between 1990 and 1996. The R&E tax credit is not reported separately because it is included in the general business credit, and the orphan drug credit is part of the general business credit in 1995 and 1996. There are no estimates of the amount of research expenses that the industry deducts under IRC section 174. The benefit of these credits to the drug industry can be grasped by estimating their impact on its average effective tax rate. In 1996, the industry's rate was 17.1%. But the rate would have been more than twice as large (35.2%) if the industry had not been able to claim the foreign tax credit, the possessions tax credit, and the general business tax credit for that year.

That the industry derives significant tax savings from these credits is hardly surprising. It spends huge sums on domestic R&D; in 1999, it is estimated that U.S. pharmaceutical R&D will total $20.1 billion. Most large U.S. drug companies are multinational in the scope of their R&D, production, and sales operations; in 1999, it is estimated that the foreign sales of U.S.

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[4] See U.S. Congress. Office of Technology Assessment. *Pharmaceutical R&D: Costs, Risks, and Rewards.* Washington, U.S. Govt. Print. Off., February 1993. P. 183-199.

pharmaceutical firms will total $42.3 billion, or 31% of total expected sales.[5] And the drug industry has established a significant manufacturing presence in Puerto Rico: a 1992 report by the General Accounting Office found that as of 1990 twenty-six pharmaceutical firms had manufacturing operations in Puerto Rico, and those operations were licensed by the FDA to produce seventeen of the twenty-one most commonly used prescription drugs in the United States in 1990.[6]

Table 4. Selected Tax Credits Claimed by the Drug Industry from 1990 to 1996 (millions of dollars)

Year	Foreign Tax Credit[1]	Possessions Tax Credit	Orphan Drug Tax Credit	General Business Tax Credit
1990	1,205	1,666	15	142
1991	1,367	1,883	18	150
1992	1,613	2,033	17	180
1993	1,886	2,150	19	208
1994	1,960	2,116	19	271
1995	2,633	1,611	NA	214
1996	2,628	1,651	NA	219

[1] As noted above, the foreign tax credit, unlike the other credits claimed by the drug industry, is not a tax benefit. Rather, it is a means of preventing the double taxation of foreign income by both the U.S. government and foreign governments.

Source: Internal Revenue Service. Statistics of Income Division. *Corporation Source Book.* Washington, U.S. Govt. Print. Off., 1990 to 1996.

[5] Pharmaceutical Research and Manufacturers of America. *Pharmaceutical Industry Profile 1999 (World Wide Web version).* Table 11. Washington, 1999.

[6] U.S. Congress. General Accounting Office. *Pharmaceutical Industry: Tax Benefits of Operating in Puerto Rico.* Washington, May 1992. 37 p.