An Empirical Investigation of the Ability of Multinational Enterprises To Affect Their United States Income Tax Liability

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(ABSTRACT)

Transfer prices are the prices charged by one party for goods and/or services transferred to a related party. While transfer prices are essential to the goal of profit maximization within the enterprise, difficulties arise over how to establish the "correct" transfer price. For the global enterprise this problem is more acute because different segments of the enterprise operate under different political jurisdictions and are subject to taxation by different political entities. Concerns have been raised by Congress and the Internal Revenue Service regarding whether multinationals, especially foreign-owned multinationals, are using transfer-pricing and cost-allocation policies across international borders to avoid United States income taxes. Generally, testimony before the hearings, limited anecdotal studies, and court case findings have suggested that multinationals do not pay their "fair share".

An examination of 336 companies in the chemical industry (SIC codes 2800-2899) provided mixed support for the position that multinationals are paying less than their "fair share" of U.S. income taxes. While statistically significant differences were found among the three groups for the cost-of-good-sold (COGS) ratio (after developmental stage enterprises were removed) and for the worldwide net-profit ratio, no statistically significant differences were found for tax-rate measures (worldwide effective income tax rate, worldwide effective operating income tax rate, and U.S. effective operating income tax rate) or for the return measures (worldwide return on assets, worldwide operating return on assets, and U.S. operating return on assets). When multinationals (U.S.-controlled and foreign-controlled combined to form a single group) were compared to domestic companies, statistically significant differences were found only for the COGS ratio. When U.S. multinationals were restricted to those companies with 50% or more of both their net sales and average total assets abroad, statistically significant differences were found for the operating income ratios (both U.S. and worldwide) and for the worldwide net profit ratio, but such differences were found neither for the

COGS ratio, the effective-income-tax-rate measures, nor for the return measures.

Complicating the issue were: (1) the presence of developing stage enterprises and foreign parent companies among the total group; (2) the use of a 10% cutoff in ownership and operations to determine whether a company is or is not a multinational; and (3) the absence of access to tax or accounting records, resulting in the need to use secondary sources for data.

One suggestion for simplifying the transfer-pricing issue is the adoption of a method of formulary apportionment. In a comparison of the amount of income allocated to U.S. operations under current methods (either specific allocation or separate accounting) and the amount that would have been allocated under formulary apportionment methods no significant differences were found, suggesting that such a method is worthy of further study.

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Chapter 1. Introduction and Motivation

Introduction

Transfer pricing and cost allocation between related parties have long been difficult problems for enterprises.[1] Accounting, with its reliance upon an "arm's length" transaction, is challenged in trying to deal with this problem because an arm's length comparison price frequently does not exist. It is not uncommon for transferred goods to be components that are used in further processing and have no ready market or reliable market price in their current state. Similarly, services are often of a specialized nature that makes comparison to other services in the marketplace difficult, and even those services that do have comparables in the market are difficult to allocate objectively. However, difficult as it may be for an enterprise to decide upon transfer pricing policies, a proper system of transfer pricing is important in order to maximize the probability that the enterprise will meet objectives such as goal congruence, optimal allocation of resources within the organization, performance evaluation of the units involved, and unit autonomy[2] (Ronen and McKinney, 1970; Benke and Edwards, 1980; Choi and Mueller, 1984; Abdallah, 1989).

When the transfer-pricing problem exists within the

multinational enterprise (MNE), the difficulty is exacerbated. Not only does the original transfer-pricing problem remain, but the enterprise may face additional problems, including taxation by different governments. Taxes assessed by those governments are affected by the transfer-pricing and cost-allocation policies that have been utilized by the enterprise *(See Appendices 1A-1D)*. The rapid proliferation of MNEs and the failure of the accounting profession or taxing authorities to resolve the problem completely has left questions unanswered.

Many factors affect an enterprise's decisions about locating internationally. Ohlin (1933) argued that capital, seeking high interest rates of return, moves in and out of different countries in response to changing interest rates within the countries. Hymer (1976) suggested that MNEs have a desire to control foreign operations and move strategically to eliminate competition with enterprises in the country in which they invest. Tax policy also appears to have an effect upon where MNEs choose to locate in the world, and complaints about tax policy "tilting the field" (McClure and Bouma, 1989) have been heard from many sides. For example, although criticized by Murthy (1989) for his methodology, Young (1988) found that U.S. tax incentives put in place during 1981-82 caused annual foreign direct investment in the U.S. to increase between $1.7 and $4.8 billion, and Hartman (1984)

found that taxes, through the effect they had on after-tax rates of return, can affect decisions on foreign direct investment.

Among the numerous determinants of transfer-pricing policies, several researchers have established the importance of taxes and related tax policies. Greene and Duerr (1970) found that the attitudes of the governments of the U.S. and the host country, combined with the availability of foreign exchange credits, were among the most important factors. Milburn (1976) stated that one manner in which corporations would manipulate their international transfer prices in order to maximize the consolidated international income was through minimization of total tax burden and duties imposed upon the enterprise. Salem (1986) found that the competitive position of the unit, good relations with the host government, overall corporate profit maximization, and compliance with IRS regulations were the four most important determinants of the transfer-pricing system utilized. Compliance with IRS regulations was the most important determinant when the enterprise used a market-based pricing system.

By capitalizing upon opportunities that could be undertaken by foreign corporations, U.S. multinational enterprises (USMNEs) operating in foreign countries are bringing benefits to the United States, such as an improvement in the balance of payments, the employment of U.S. citizens,

and the increase in opportunity for other U.S. firms to earn profits by supplying goods and services to USMNEs. Even though the U.S. Tax Code provides for taxation of worldwide income, such income should be taxed without impairing the ability of USMNEs to compete effectively with foreign enterprises. USMNEs should not be subjected to rules and regulations that put them at a competitive disadvantage, either through the timing of tax or the severity of tax laws. At the same time, the Tax Code must maintain fairness in the United States between taxpayers who invest abroad and those who invest on the domestic front, by not making it more advantageous (from a tax viewpoint) for a taxpayer to invest money abroad vis-a-vis in the U.S. The Tax Code, then, has the sometimes difficult charge of not impairing the ability of USMNEs to compete effectively while ensuring that parity exists between taxpayers regardless of whether they choose to invest at home or abroad. Differences of opinion exist regarding whether or not the Tax Code has been able to achieve this charge.

During the years from 1909 until 1954, U.S. tax laws were framed to ensure that U.S. corporations operating in foreign countries were not put at an unfair disadvantage.

> [As the]....laws have developed since 1954, however, the general policy of ensuring the competitiveness of foreign operations of U.S. companies has taken a back seat to other concerns. For example, when specific abuses of the U.S. tax

> laws were identified, Congress often lost sight of competitiveness and enacted burdensome rules that not only restricted the identified abusive transactions, but also adversely affected legitimate foreign operations.... [T]he compulsion to raise revenue overshadowed the need to be competitive overseas.
>
> Moreover, as the laws governing taxation of foreign income grew in scope and complexity, ... [USMNEs were] left with a complex maze of rules that both substantively and administratively impede the ability of U.S. firms to compete in foreign markets with foreign firms that do not face such burdensome, complex tax systems at home (McClure and Bouma, 1989).

But there is another side to this argument. From the early cottage industry, through the sweatshop, the early factory, the national corporation, to the multi-divisional corporation, industries have tended to follow what Hymer (1976) calls the Law of Increasing Firm Size. This tendency of firms to grow larger and larger enables the multi-divisional corporation to begin to operate in terms of resources and markets beyond its present geographical boundaries and to develop a global viewpoint. Many economists would argue that the very size of these MNEs gives them distinct advantages over their non-multinational competitors by enabling them to take advantage of synergies and economies of scale, to generate capital internally, and to acquire and allocate resources on a worldwide basis. These advantages occur naturally as a result of the firm's growth in size and its willingness to use and risk its increasing resources in expanded markets *(See Martin, 1993; Tybout, 1993; Greenbaum,*

1992; and Lambkin, 1992). The potential problem of double taxation resulting from such expansion abroad has been addressed, at least to a degree, in the U.S. by provisions in the Tax Code such as deferrals and foreign tax credits. Many quarters now question whether MNEs are gaining an unfair advantage over their domestic, and usually smaller, competitors and are possibly cheating the U.S. government out of needed tax revenues if, in addition to the naturally-occurring advantages imbued to them by mere size, they may gain advantages by being able to avoid a portion of their tax liability in the U.S. through transactions with related parties in different parts of the world. One suggested method of enabling these MNEs to avoid tax is through aggressive tax planning in the area of transfer-pricing and cost-allocation policies across international boundaries *(See, for example, the testimonies before the Subcommittee on Oversight of the United States House of Representatives' Ways and Means Committee in July 1990 and April 1992).*

Because different localities have different tax rates, credits, and exemptions, a unit of an enterprise located in a host country with a high tax rate could avoid paying taxes on the income earned there if it could transfer goods and services at a low transfer price to a unit in a country with a lower tax rate, placing the bulk of the overall enterprise's

income in the lower tax jurisdiction. In a similar manner, a unit located in a low tax country could transfer goods or services to a related unit in a high tax country at a high transfer price where the goods or services could then be sold at a market price that nets little profit in the high tax locality and leaves the bulk of the profit to be taxed at a lower rate *(See Appendices 1A-1D)*.

Clearly, in the view of the Congress and the Internal Revenue Service (IRS), a problem exists. In July 1990 and again in April 1992, the Subcommittee on Oversight of the United States House of Representatives' Ways and Means Committee (House Ways and Means Committee) held public hearings in Washington, D. C., to investigate noncompliance with United States tax laws by U.S. subsidiaries of foreign-owned multinationals. In 1990, focusing on companies in the automobile, motorcycle, and electronic equipment fields, the general conclusion of the speakers was that, as a group, the companies investigated were paying less than their fair share of U. S. income tax. To illustrate and emphasize the magnitude of the problem, the subcommittee members referred frequently to an annual $100 billion "taxgap," the amount of tax revenues estimated to be lost annually through taxpayer noncompliance with existing tax statutes. *(See Appendix 2 for one method used at the 1992 hearings for calculating the contribution of foreign-controlled U.S.*

corporations to that "taxgap.") Quick and Levey (1992) estimate the annual tax revenue loss from the U.S. operations of foreign-owned companies to be $30 billion. Committee Chairman J. J. Pickle (1990) cited Internal Revenue Service statistics showing that foreign-owned companies, while reporting over $550 billion of sales in the United States in 1986, asserted a negative taxable income of $1.5 billion. Patrick G. Heck (1990), Assistant Counsel to the Subcommittee, stated that more than half of thirty-six companies he investigated paid little or no income tax to the United States government.

Estimates released by the Internal Revenue Service (1990) indicate that in 1987 U.S.-based corporations "controlled by a foreign person" filed nearly 45,000 tax returns. Although this figure represented only 1.2% of the total number of corporate returns filed in the United States for that year, those returns accounted for 7.2% of the worldwide sales and 6.3% of the worldwide assets reported on all corporate returns. Moreover, while 56% of all United States corporations reported net income on their tax returns during the four years ending with 1987, only 41% of the U.S. corporations controlled by foreign interests reported net income during those same years. The disparity between these figures does not prove that these foreign-controlled corporations are shifting income in order to avoid paying U.S.

income tax. Understandably, however, the IRS and Congress question that 59% of all foreign-controlled corporations reported a loss, even though they represented a disproportionally large percentage of total corporate assets and sales.

In general, the results of operations of the MNEs investigated have shown that many foreign MNEs operating in the U.S. report little or no taxable income even though they have been established with a profit motive.[3] More than merely continuing to operate, the number and the size of these U.S. operations continue to grow. Judicial proceedings, statistics compiled by various governmental agencies, and other studies suggest that the transfer-pricing problem may be limited neither to automobile, motorcycle, and electronic equipment companies nor to U.S. operations of foreign multinational enterprises (USOFMNEs). U.S.-based MNEs also may set transfer prices to avoid, perhaps even to evade, U.S. income tax.

In studying individual companies, James Wheeler (1988) found significant differences in the profits, the returns on assets and resources, and the tax liabilities between U.S.-based parents and their foreign subsidiaries. Based upon his examinations, Professor Wheeler concludes that

> (i)t is difficult to look at the results...and not be concerned with the integrity of the income tax system as to transfer pricing.... It seems clear that the U.S. is losing large amounts of tax revenue through income shifting both for purposes

> of income measurement and in the determination of the foreign tax credit limitation (p. 95).

At a time when the United States is facing an unfavorable trade imbalance in the global market, an increasing deficit in the Federal budget, and the possibility of raising income taxes on American citizens, many in Congress are obviously concerned about asking American citizens to pay more and more taxes while domestic corporations with foreign operations allegedly shift income to foreign subsidiaries or claim large foreign tax credits and while foreign-owned corporations allegedly report huge sales through U. S. operations and pay little, if any, U. S. income tax. At the same time, in this day of globalization of markets, it is important for U.S. companies to be able to effectively compete with foreign companies in both domestic and international markets for equitable access to customers and necessary resources available in foreign markets.

Arguments have been made on both sides: some claim that MNEs have an advantage by being able to transfer income away from high tax localities; others contend that MNEs face disadvantages because they are subject to taxes, duties, repatriation restrictions, and reporting requirements in more than one governmental jurisdiction. However, the research to date on the question has generally been limited to a few companies from a small number of select industries, aggregate

data released by the IRS, and judicial findings. This paper will attempt to advance these initial investigations by looking for patterns in the financial data of companies within the chemical industry, an industry not previously examined.

In light of expected effects of oligopolistic behavior,[4] the chemical industry has been selected for examination for two reasons: (1) It belongs to the Manufacturing Industry Group which provides more opportunities for transferring goods, services, and intangibles between parent companies and their subsidiaries than most other industry groups; and, (2) based on the size of its direct investment position, assets, sales, and income, the chemical industry is one of the most significant industries involved in international business operations other than the ones already examined by the congressional subcommittee in 1990.

In 1989, the chemical industry was the largest manufacturing industry in terms of assets and net income and the second largest in terms of sales (Lowe and Mataloni, 1991). In 1990, on a historical-cost basis, the chemical industry represented a higher percentage of the total U.S. direct investment position abroad and produced a higher percentage of the net income from U.S. direct investment abroad than the transportation, the electric, and the electronic equipment industries combined (Survey of Current Business, August 1991). During the ten-year period between

1979 and 1989 when the overall U.S. direct investment position abroad increased approximately 103%, the direct investment position abroad of the chemical industry increased 98.9%, resulting in the chemical industry representing 8.79% of the U.S. direct investment position abroad at the end of 1989 *(See Appendix 3)*.[5] This growth in U.S. direct investment abroad was matched by an increase in foreign direct investment in the U.S.[6] During the ten years between 1980 and 1990, when overall foreign direct investment in the U.S. increased by 375.5%, foreign direct investment in the U.S. for chemical companies increased 470.6% *(See Appendix 4)*, resulting in the chemical industry representing 11.6% of foreign direct investment in the U.S. at the end of 1990 (Survey of Current Business, 1981, 1985, 1991, 1992, and 1993).

By focusing attention on one major industry, the findings of this study will provide some empirical evidence that may lend support to one side or the other of the argument on whether MNEs are avoiding paying their "fair share" of U.S. tax. It will also add empirical data to the discussion of existing approved methods of apportioning income earned across jurisdictions that might make this area less controversial.[7]

Purpose of the Study

This study investigates whether MNEs in the chemical industry operate at an advantage or a disadvantage in relation

to their domestic competitors. Specifically, this study examines:

- whether MNEs operating in the U.S. are reporting a significantly different cost-of-goods-sold ratio from their domestic competitors;

- whether those MNEs are reporting a significantly different operating-income ratio from their domestic competitors;

-whether those MNEs are reporting a significantly different net-profit ratio from domestic companies;

-whether those MNEs are reporting a significantly different percent of current income tax expense from domestic companies;

-whether those MNEs are reporting a significantly different return on assets from domestic companies; and,

-whether the application of a formulary apportionment method to the worldwide operating income of MNEs results in an allocation of operating income to the U.S. significantly different from the present method of separate accounting by geographic area.

Expansion of Earlier Work

This study expands upon earlier transfer-pricing and cost-allocation studies in three ways.

First, beyond the research presented to the Congressional subcommittee in 1990, little research has been done in the area of international transfer pricing. Wheeler (1990), Wheeler and Weber (1990), and Salem (1986) have examined a small number of large companies. While providing anecdotal

evidence, the relatively small number of companies included in these studies and the absence of random selection have precluded calculating statistical measures that would permit inferences to be drawn about the population as a whole. Although this study is industry specific, through the examination of a larger number of companies belonging to an oligopolistic population, this study provides additional empirical evidence about the similarities and differences in the cost, tax, and income structures of purely domestic companies and the operations, particularly the U.S. operations, of MNEs.[8]

Second, the studies done by the IRS focused exclusively on the U.S. operations of *foreign-owned* MNEs. Because some U.S. MNEs have also been charged with transfer-pricing and cost-allocation violations under Section 482 of the U.S. Tax Code *(See, in particular, Eli Lilly & Company and Subsidiaries v. Commissioner, 62 AFTR 2d 88-5569; Eli Lilly and Company and Subsidiaries, 84.65 P-H TC; G.D. Searle & Company and Subsidiaries, 88.16 P-H TC; and, Ciba-Geigy Corporation, 85.11 P-H TC)*, it is logical to investigate the potential income-shifting actions taken by U.S.-owned MNEs, too. This research project, therefore, studies three different groups of corporate taxpayers: U.S. operations of foreign-owned MNEs (the same group examined by Congress, but in a different industry), operations of U.S.-owned MNEs, and (as a control

group) U.S. corporations with no international operations (domestic corporations).

Finally, Congress primarily investigated three highly visible industries: automotive, motorcycle, and electronic equipment. This research will focus on the chemical industry, an industry that has worldwide significance in terms of assets and revenues, but one that has not yet been studied closely.

The Significance of the Study

The significance of an investigation into the ability of MNEs to affect their United States income tax liability has grown, at least in the eyes of Congress and the IRS, as the number of companies engaging in international trade with affiliated companies and the dollar volume of that trade have grown, and as the ability of the IRS to enforce existing tax laws has decreased. In addition to the alleged ability of MNEs to reduce their U.S. tax liability, there are concerns (shared by the Congress, the IRS, competing domestic corporations, and even governments of nations with whom the United States has trade treaties) about whether such a profit-shifting ability, if it exists, provides these companies with an unfair competitive advantage.

The significance of this study relates, therefore, to the following areas:

-the size and growth of assets and investments

of multinational companies;

-the size and growth of their sales and income; and

-the issues regarding domestic and international fairness.

Multinational Assets and Investment. The number of corporations operating on a multinational basis, the dollars invested internationally, and the revenues generated by MNEs have grown almost every year.

Several economic indicators emphasize the importance of this growth.[9] The U. S. direct investment position abroad grew from slightly over $187 billion at the end of 1979 to over $381 billion at the end of 1989 -- an increase of approximately 103% in only ten years (Survey of Current Business; *See Appendix 3*), and growth continued into the next decade with a 27% increase between the end of 1989 and the end of 1992. Even this impressive growth in U.S. investment abroad during the 1980s was surpassed by the growth of foreign investment in the United States. Foreign direct investment in the U.S. increased from $83 billion at the end of 1980 to $394.9 billion at the end of 1990 -- an increase of approximately 376% during the 1980s (Survey of Current Business; *See Appendix 4*).[10] Annual foreign direct investment outlays in the United States grew from $8.1 billion in 1983 to $72.7 billion in 1988, with both the number and size of annual

investment outlays increasing. Even if the figures were adjusted for inflation, the statistics indicate that the increase in both the number and size of international investments have been dramatic.[11] If, as has been suggested, USMNEs and foreign-owned and foreign-controlled assets situated in the U.S. are generating income which is not being subjected to proper taxation, the potential revenue being lost to the U.S. government is significant and deserves the attention requested by the IRS and Congress.[12]

Sales and Income. Sales figures of MNEs accentuate their increasing importance and impact. Sales by United States operations of foreign companies amounted to $313.3 billion dollars in 1979 (Howenstine, 1990 and 1991) and $1 trillion in 1989, a growth rate of over 300% for sales over the ten-year period. However, during that same decade, the annual net income from those operations increased by only about 62% (Survey of Current Business, 1991).[13] While not following a steady trend, the annual income from U.S. direct investment position abroad from 1979 until 1989 ranged from a low of $24.7 billion in 1982 to a high of $53.8 billion in 1989 ("U.S. Direct Investment Abroad," various years).[14] These figures show greatly increased sales with less corresponding increased net income from operations over the past decade. While companies may be willing to increase sales or investment

over time even though there is only a minor increase or even a reduction in returns as measured by net income as a percent of sales and return on assets, the large increases in sales and relatively minor increases in reported income raise questions in the Congress and the IRS about the appropriateness of the reported results. With corporate income taxes constituting 10% of the Federal government's budgeted receipts in 1990, the growing magnitude of international business operations indicates that even a small percentage of income tax evasion by multinational companies could have a significant impact on the Federal budget (United States Budget, 1989).

Domestic and International Fairness. Both domestic enterprises and MNEs hold that the playing field should be level for all. Corporations, however, venturing into the realm of the international market, find themselves facing additional financial, political, and regulatory risks. Tariffs, quotas, and other restrictions abound. Complying with additional regulations and paperwork consumes time and talent. Tax laws at home and abroad on the national and local levels become a morass of details with the very real possibility of higher taxes for the overall entity through double or even greater multiple taxation by different governmental bodies.

Equitable treatment within different groups of taxpayers,

ease of administration and collection, and the amount of revenues that will be generated should be considered when tax laws are written. In order to provide a "level playing field," tax policies and procedures must be formulated to avoid creating loopholes that either provide an unfair advantage or place undue hardships in the form of additional taxes or paperwork on any group of taxpayers.

When tax policy enters the international arena, complications arise because companies operating in more than one country will be subjected to competing claims of various governments to tax their income. Without unnecessarily interfering with international trade, each of these governments wants to collect its fair share of taxes. The frequency of changes in U. S. tax policies, particularly during the past decade, raises doubts regarding fairness to both multinational and domestic companies and questions about the effects that unfair treatment may have on the ability of these firms to compete in today's marketplace (Ross, 1990)[15].

The findings of this study provide some evidence of what is taking place in this area today and may help initiate research directed toward answering other questions that have been raised. These questions include whether current United States tax policies place some corporations at a competitive tax advantage or disadvantage at the expense of other corporations and whether, in light of the increasing

globalization of markets, better cooperation is needed among the accounting and taxing agencies of nations with whom the U.S. trades in order to ensure a more equitable worldwide tax policy.

Outline of Chapters

This study is divided into five chapters. Following this first chapter which contains the introduction to and motivation for the study, Chapter II, Literature Review, discusses sections of the U.S. Tax Code and the Treasury Department's White Paper related to transfer pricing. It examines the evolution of the transfer-pricing and cost-allocation issue from both a legislative and judicial perspective. Criticisms that led to the issuance of the White Paper and other additions to the Tax Code will be addressed. Cases related to Section 482 and theories of the firm that may help to explain differences in operating results of domestic and multinational enterprises also will be examined. The use of formulary apportionment, one proposed method of dealing with problems of allocating costs among the affiliates of MNEs, also will be discussed. The chapter concludes with the presentation of current concerns and developments.

Chapter III, Research Methodology and Data Sources, presents the hypotheses that were tested, the measures used in testing the hypotheses, and the method of grouping the

companies selected. It also covers the sources of data and the methods employed in the data selection and analysis.

The results and conclusions of the data analysis will be discussed in Chapter IV. The final chapter explicates the limitations of the study and proposes follow-up research studies.

Chapter 2. Literature Review

The literature review examines five separate areas. (1) The legislative history of transfer pricing is retraced. Laws enacted by Congress to govern transfer pricing and to deal with perceived abuses of the system are detailed. (2) Judicial findings in some of the more important cases in which taxpayers have been accused of violating tax laws regarding transfer pricing are presented to explicate the courts' view of this area. (3) Theories of the firm, particularly theories that relate to the manner in which multinational firms make decisions on how to allocate their resources globally and the role of taxes in those decisions, are presented in the third part of this chapter. (4) The formulary apportionment of income under a unitary tax system that has been used between states and has been found to be constitutional is reviewed to examine whether this or a similar method could possibly be expanded on a global basis. (5) Finally, the chapter addresses various current concerns and developments related to international transfer pricing.

Transfer Pricing - Legislative Background

The United States Constitution, adopted in 1789,

empowered the Congress to levy and collect taxes. Almost immediately, Congress used that power to enact the Tariff Act of 1789 which imposed a tariff, or tax, on imports. When Congress, seeking additional ways to fund the newly formed government, turned to other taxes, including an individual income tax, it found its powers limited by provisions of the Constitution that required any direct tax to be apportioned among the states based upon relative population.[16]

Such an apportionment would likely have had the result of imposing a different federal tax rate on individuals in each state because of their differing populations and incomes *(See Appendix 5)*.[17] Such a federal tax plan would have been politically unpopular and practically unenforceable. Even though such apportionment might have been constitutionally correct, the fairness of it was less clear.

The issue of personal income taxes as a source of Federal revenues remained unresolved until 1861 when, faced with the problem of financing the War Between the States with its capital-intensive requirements, Congress decided to ignore the apportionment requirement for direct taxes and enacted an income tax that was to be applied at a uniform rate on all citizens.[18] The constitutionality of the law was challenged by a taxpayer who asserted that the tax was direct and, therefore, was required to be apportioned (*Springer v. U.S.* (1022 U.S. 586 (USSC, 1880))). In the *Springer* case, the

United States Supreme Court upheld the constitutionality of an income tax, indicating that only head taxes and real estate taxes were direct taxes requiring apportionment; all other taxes were indirect.

With the decrease in federal financial requirements following the end of the War, the income tax was allowed to expire in 1872. However, it was reenacted in 1894 in an almost identical form. Once again, the constitutionality of the tax was attacked. In *Pollock v. Farmers' Loan and Trust Co.* (3 AFTR 2602, (1895)), the focus was on the income tax as it applied to income from real estate. The taxpayer asserted that a tax on income from real estate was a tax on the real estate itself. This time the Supreme Court held that such a tax was unconstitutional because it represented a direct tax, and as such, had to be apportioned. Even though the decision had again cast doubt on the constitutionality of an income tax, the Congress proceeded to enact a corporate income tax in 1909. This tax, too, was challenged in the courts. The Supreme Court, in *Flint v. Stone Tracy Co.* (3 AFTR 2834, (1911)), upheld the constitutionality of a corporate income tax by stating that this was an excise tax based upon corporate income rather than a direct tax.

At the same time that it enacted the corporate income tax, Congress approved and sent to the states a proposed Constitutional amendment that would allow the levying and

collection of taxes on all incomes without the requirement of apportionment among the states based upon their respective populations. Finally, on February 25, 1913, the Sixteenth Amendment was passed providing that "(t)he Congress shall have the power to lay and collect taxes on incomes from whatever source derived, without apportionment among the several States and without regard to any census or enumeration."

On October 3, 1913, less than eight months after the passage of the Sixteenth Amendment, Congress enacted the Revenue Act of 1913 and made it retroactive to March 1, 1913. Once again, the right of Congress to tax income was brought before the courts. Citing the special exemptions and progressive tax rate of the 1913 tax act, the new income tax law was challenged under the Fifth Amendment of the Constitution as a denial of due process of law in the case of *Brushaber v. Union Pacific Railroad Co.* (240 U.S. 1 (USSC, 1916)). The Supreme Court once again upheld the constitutionality of the income tax and at no time since then has the United States been without a federal income tax.

Even though Congress now had the right to tax income, much of the revenue to finance the government continued to be collected in the form of tariffs. Brownlee (1989) suggests that it was only after World War I disrupted trade and reduced the revenue collected from tariffs that President Woodrow Wilson and Secretary of the Treasury William G. McAdoo

embraced the income tax as a means of financing the war, achieving social justice, and keeping the Democratic party united through a tough anti-business stance. What emerged, according to Brownlee, was the beginning of a "soak-the-rich" system of taxation.

Almost immediately, concerns arose about the proper allocation of income among related parties. The War Revenue Act of 1917 authorized the Commissioner to allocate income and deductions among affiliated corporations and allowed him to require the filing of consolidated returns by related corporations "whenever necessary to more equitably determine the invested capital or taxable income..." (Regulation 41, Articles 77- 78, War Revenue Act of 1917, ch. 63, 40 Stat. 300 (1917)).

As early as 1921, concern about transfer prices and the proper allocation of income led to the passage of Section 1331 which applied the regulations of the War Revenue Act of 1917 to situations in which:

> one corporation or partnership bought from or sold to another corporation or partnership products or services at prices above or below the current market, thus effecting an artificial distribution of profits, or one corporation or partnership in any way so arranged its financial relationships with another corporation or partnership as to assign to it a disproportionate share of net income or invested capital (Revenue Act of 1921, Section 1331).

Section 1331 predominately applied to excess profits

taxes which were abolished after 1921. The same Revenue Act, however, also contained Section 240 which actually permitted the Commissioner to prepare consolidated returns for commonly controlled corporations in order to compute their "correct" tax liability. (Rev. Act of 1921, Ch.136, Sec 240(d), 42 Stat. 260 (1921)) Although Section 240 applied to both domestic and multinational corporations, the Congress granted this power to the Commissioner, at least in part, because of what it saw as a potential opportunity for corporations located in U.S. possessions to choose not to file consolidated returns with their domestic affiliates and thereby avoid U.S. tax (Senate Report, No. 275, 67th Cong., 1st Sess. 20 (1921)).

After World War I, as part of the Revenue Act of 1921, the filing of consolidated returns for affiliated domestic companies became elective. However, the basic provisions were retained as part of Section 240(d) "...to prevent the arbitrary shifting of profits among related businesses, particularly in the case of subsidiary corporations organized as foreign trade corporations" (Senate Report, No. 265, 67th Congress, 1st Session, p. 20, 1921). Continued concern about income tax avoidance led to the incorporation and expansion of the power of the Commissioner to consolidate returns in Section 45 of the 1928 Revenue Act (Rev. Act of 1928, Ch. 852, Section 45, 45 Stat. 806 (1928)). Under Section 45, the Commissioner was empowered to make adjustments

as necessary to those returns and was expressly charged with the duty of preventing income tax avoidance and ensuring that returns clearly reflected the income of related parties (House of Representatives Report, No.2, 70th Cong., 1st Sess. 16-17 (1928)).

In 1935, Regulation 86 was issued. Part of this regulation set forth the arm's length standard that would become the basis for Section 482. That 1935 regulation stated that "[t]he standard to be applied in every case is that of an uncontrolled taxpayer dealing at arm's length with another uncontrolled taxpayer" (Treasury Regulations 86, Section 45-1(b), (1935)). Like Section 240 of the 1928 Revenue Act, Treasury Regulation 86 applied to both domestic and multinational companies; however, because only a small number of United States companies operated on an international scale at that time, the majority of IRS enforcement efforts remained domestic until the early 1960s when more and more companies began to enter the global marketplace.

In light of the new international market, the IRS became concerned about the number of abuses it perceived being carried out by domestic corporations with one or more foreign subsidiaries. The Ways and Means Committee of the House of Representatives attempted to put more force into the law by requiring corporations to apportion taxable income based upon the economic activities of the company and its affiliates

unless they could clearly demonstrate that they were using an arm's length method of pricing with their foreign affiliates (House of Representatives Report No. 1447, 87th Congress, 2nd. Session 28 (1962)). This House version lost and the final Conference Committee version determined that

> Section 482 already contains broad authority to the Secretary of the Treasury or his delegate to allocate income and deductions. It is believed that the Treasury should explore the possibility of developing and promulgating regulations under this authority which would provide additional guidelines and formulas for the allocation of income and deductions in cases involving foreign income (Treasury Regulation Section 1.482-2(d)(2)(iii)).

By 1968, the Treasury had promulgated regulations that expanded the guidelines for Section 482. These guidelines dealt with three distinct types of transfers: (1) provision of services, (2) licenses and sales of intangible property, and (3) sale of tangible property. However, other than referencing the "arm's-length standard," the regulations were broadly stated and offered little specific guidance.

For services, the regulations stated

> .... an arm's length charge for services rendered shall be the amount which was charged or would have been charged for the same or similar services in independent transactions with or between unrelated parties under similar circumstances considering all relevant facts (Treasury Regulation Section 1.482-2(b)(3)).

For the licensing and sale of intangible property, the regulations stated:

> [i]n determining the amount of an arm's length

> consideration, the standard to be applied is the amount that would have been paid by an unrelated party for the same intangible property under the same circumstances. Where there have been transfers by the transferor to unrelated parties involving the same or similar intangible property under the same or similar circumstances the amount of the consideration for such transfers shall generally be the best indication of an arm's length consideration (Treasury Regulation Section 1.482-2(e)(1)(iii)).

In the case of the sale of tangible property, the regulations gave a little more guidance in that three methods were detailed and an order of priority for the use of those methods was detailed. The first method to be used was the comparable uncontrolled price method (CUP); the second method to be used was the resale price method; the third method was the cost plus method.

The CUP method of determining arm's length transfer prices involves looking for "uncontrolled sales" in which the buyer and seller are not "members of the same controlled group." Even then, to qualify as an arm's length price, the physical property and circumstances must be <u>identical</u> in the uncontrolled and the controlled sales situations or, if there are differences, the physical properties and circumstances must be "...so nearly identical that any differences either have no effect on price, or such differences can be reflected by a reasonable number of adjustments to the price of uncontrolled sales" (Treasury Regulation Section 1.482-2(e)(2)(ii)).

The resale price and cost-plus methods are used when the CUP method cannot be used. Under the resale price method, the transfer price between two related taxpayers is the price at which the buyer sells the good to unrelated third parties reduced by an appropriate markup.

> Thus where one member of a group of controlled entities sells property to another member which resells the property in uncontrolled sales, if the applicable resale price of the property involved in the uncontrolled sale is $100 and the appropriate markup percentage for resales by the buyer is 20 percent, the arm's length price of the controlled sale is $80 ($100 minus 20 percent X $100)..." (Treasury Regulation Section 1.482-2(e)(3)(i).

Under the cost plus method, the cost of producing the product is increased by an "appropriate" gross margin percentage plus or minus necessary adjustments. This gross margin percentage is determined by the similarity of the controlled sale to uncontrolled sales in terms of factors such as (1) the type of property involved, (2) functions, such as assembling, servicing, delivering, et al., performed by the seller, (3) the effect of seller-owned intangibles such as trademarks, and (4) the geographic market involved. To the extent that circumstances surrounding the sales between uncontrolled members

> ...differ in any material respect from the controlled sale, the arm's length price which is computed...must be adjusted to reflect such differences to the extent such differences would warrant an adjustment of price in uncontrolled transactions" (Treasury Regulation Section 1.482-2(e)(4)(i-v)).

Although the regulations provide some general guidance on each of the three methods, it should be noted that each method relies on the existence of prior or contemporaneous comparable transactions with unrelated parties to determine arm's length price. In cases where such comparable transactions among unrelated parties do not exist, the regulations state: "...some appropriate method of pricing other than those described... can be used" (Treasury Regulation Section 1.482-2(e)(1)(iii)).

In 1982, because of the frequent need to secure "relevant or material" (Section 982(d)(1)) documents located outside the United States in the tax audit of a multinational, Congress enacted Section 982. This section prevents a taxpayer who "fails to substantially comply" (Section 982(a)) with a formal request for documents from introducing those documents into a later civil court proceeding. Although the 90-day response period may be extended by either the Commissioner or the court for reasonable cause, the Committee Report clearly states that "[t]he fact that a foreign jurisdiction would impose a civil or criminal penalty on the taxpayer (or any other person) for disclosing the requested documentation" is not reasonable cause for not producing the requested documents within the given period of time because "[f]requently, taxpayers choose to operate through a particular country because of its restrictive nondisclosure laws." The Report also notes that

the minority status of the taxpayer within the multinational is not automatically considered to be reasonable cause for not complying with such a document request because "...taxpayers may seek to hide behind minority status to avoid production of records" (Committee Report of P.L. 97-248 as reported in Commerce Clearing House, Standard Federal Tax Reports, paragraph 29,320.01).

Problems, disagreements, and allegations of abuse continued to arise under the regulations as promulgated by the Treasury. In 1985, as debate was going on over tax reforms, the Administration made a policy statement regarding international taxation:

> The Administration proposals would retain the basic structure for taxing foreign income of U.S. taxpayers that has evolved since 1913. This structure is intended to cause foreign income to bear a fair share of U.S. tax in a manner that does not distort investment decisions; at the same time, special measures reflect concern for the international competitiveness of U.S. business. Thus, the general rule is that U.S. taxpayers are subject to U.S. tax on their worldwide income. A credit is allowed against U.S. tax for foreign income taxes paid in order to avoid double taxation of foreign income which has been taxed by the country where the income is earned. The special measures included the deferral of U.S. tax on income earned by U.S.-controlled foreign corporations until that income is remitted to U.S. shareholders...
> In reaching the decision to continue the worldwide taxation of U.S. taxpayers with allowance for foreign tax credits, the Administration considered and rejected the alternatives of exempting foreign-source income from U.S. tax, or taxing foreign-source income but only allowing a deduction for foreign taxes.[19] While an exemption approach

> would in some circumstances facilitate overseas competition by U.S. business with competitors from countries that tax foreign income on a favored basis, such an approach also would favor foreign over U.S. investment in any case where the foreign country's effective tax rate was less than that of the United States. Moreover there would be a strong incentive to engage in offshore tax haven activity. The long-standing position of the United States that, as the country of residence, it has the right to tax worldwide income is considered appropriate to promote tax neutrality in investment decisions. Exempting foreign income from tax would favor foreign investment at the expense of U.S. investment. The other alternative, to allow only a deduction for foreign taxes, would not satisfy the objective of avoiding double taxation. Nor would it promote tax neutrality: it would be a serious disincentive to make foreign investments in countries where there is any foreign income tax (From "The President's Tax Proposals," 1985, as quoted in Frisch, 1990, p. 582).

In 1986, Section 1059A was added to the Code. This section states that:

> If any property is imported into the United States in a transaction (directly or indirectly) between related persons (within the meaning of section 482), the amount of any costs (1) which are taken into account in computing the basis or inventory cost of such property by the purchaser, and (2) which are also taken into account in computing the customs value of such property, shall not, for purposes of this chapter, be greater than the amount of such costs taken into account in computing such customs value (Section 1059A(a)).

The regulations of Section 1059A permit adjustments to the customs value for special circumstances such as cases in which property is imported duty free or not subject to customs duty. The customs value may also be increased for inventory cost purposes for the following reasons:

(i) freight charges,
(ii) insurance charges,
(iii) the construction, erection, assembly, or technical assistance provided with respect to, the property after is [sic] importation into the United States, and
(iv) any other amounts which are not taken into account in determining the customs value, which are not properly includible in customs value, and which are appropriately included in the cost basis or inventory cost for income tax purposes (Treasury Regulations 1.1059A-1(c)(2)(i-iv)).

Behind the passage of Section 1059A was a desire by the Congress to prevent companies that import goods into the U.S. from declaring a low value for customs purposes and later declaring a higher value for those same goods as they were included in inventory and ultimately in cost of goods sold.[20]

By 1968, many of the provisions of earlier Sections 240, 45, and 1331 had been codified into Section 482. As part of the Tax Reform Act of 1986, a final sentence requiring that income in respect to the transfer or license of an intangible be commensurate with the income attributable to that intangible was added to this section.[21] Section 482 of the Internal Revenue Code, "Allocation of Income and Deductions Among Taxpayers," has proven to be a relatively short but far reaching section:

In any case of two or more organizations, trades, or businesses (whether or not incorporated, whether or not organized in the United States, and whether or not affiliated) owned or controlled directly or indirectly by the same interests, the Secretary may distribute, apportion, or allocate gross income,

> deductions, credits, or allowances between or among such organizations, trades, or businesses, if he determines that such distribution, apportionment, or allocation is necessary in order to prevent evasion of taxes or clearly to reflect the income of any of such organizations, trades, or businesses. In the case of any transfer (or license) of intangible property (within the meaning of section 936(h)(3)(B)), the income with respect to such transfer or license shall be commensurate with the income attributable to the intangible.

Congress continued to be concerned that the true taxable income of multinational companies was not being reported for United States tax purposes. In particular, they were concerned by the potential abuse occasioned by the transfer of intangibles with a "high-profit" potential to other countries with more favorable tax laws (Coopers and Lybrand, 1989).

In response, in October of 1988, the Treasury issued "A Study of Intercompany Pricing," more commonly known as the White Paper. While the White Paper deals primarily with intangibles, the rules it suggests also could be applied to the sale of tangible property. The rules mandate the continued use of the comparable uncontrolled price method (CUP) as the primary method to use in determining the arm's length price.[22] However, the White Paper proposes doing away with the present priority of the other two methods based upon the rationale that the resale price method is more aptly applied by distributors of goods and the cost plus method is more aptly applied by manufacturers of goods.[23] The CUP method should now be used only when exact comparables exist. Exact

comparables are defined as transactions that involve "...the license of the same intangible licensed to unrelated parties, when the circumstances surrounding it and the related party transfer are similar." Further reference is made to internal and external standards of comparability in determining whether or not an exact comparable exists. Internal standards deal with factors such as contract terms, method and amount of payment, ancillary rights and privileges (such as training), and obligations between the parties. External standards deal with factors such as the size and state of development in the market and the existence of competition or monopoly conditions. The difficulty taxpayers have had in meeting these standards can be seen in arguments between taxpayers and the IRS in cases brought under Section 482 (*See particularly Bausch & Lomb, Inc. and Consolidated Subsidiaries v. Commissioner, 92 T.C. No. 33 (March 23, 1989)*).

In addition to the three pricing methods identified in Section 482, the White Paper identifies two new methods: the Basic Arm's-Length Return Method (BALRM or "Ballroom" method) and the Profit Split Addition to the Basic Method. The choice between the BALRM and the Profit Split method is based upon whether one or both parties have significant intangibles involved in the income-producing operation.

The Basic Arm's-Length Return Method is used when one of the parties performs economic functions using measurable

assets or other factors with no significant intangibles of its own involved. In most operations, there will be a significant number of identifiable assets and/or factors of production involved. Under the BALRM method, these assets and factors are to be identified and a market rate of return is to be assigned to each of them. This assignment is done through a process of functional analysis, breaking down each of the business lines involved into its functional components. Once the functional components have been determined and a market rate of return has been assigned for each, any residual income is assigned to the affiliate with the significant intangible(s).

The Profit Split Method is used when both parties have significant intangibles involved. As in the BALRM method, functional analysis is first performed on identifiable assets and factors. Again, a market rate of return is assigned to these functions. The residual income is then allocated between the affiliated parties based upon the relative values of their unique intangibles.

The White Paper deals not only with guidelines for the allocation of income among related parties, but also looks at other factors which the Treasury has asserted have caused difficulty for the Internal Revenue Service in its attempts to enforce the provisions of Section 482. Among these is the requirement of contemporaneous documentation of transfer prices. At House Ways and Means Subcommittee meetings in July

1990, IRS agents complained of waiting years for documentation and then having it delivered by the vanload -- in a foreign language. Under the provisions of the White Paper, companies would be required both to establish their transfer pricing policies for affiliates prior to filing their tax returns and to provide a summary of those policies on the tax return itself. In addition, companies would be required to provide this documentation to the IRS within a reasonable time after it is requested and to provide an "attestation" that this documentation was available when the return was prepared and that it will be made available on a timely basis when requested.

The White Paper provides for an increased use of summons and penalties when IRS agents believe that companies are unjustifiably delaying the submission of requested documentation. The increased use of specialists in the area of intercompany pricing at an earlier stage of IRS investigations is also recommended. One IRS employee stated that

> [i]n representing the Internal Revenue Service in these cases, I am opposed by taxpayers who have retained some of the most prestigious and largest law firms in the country. These law firms can quickly call upon a wealth of human, financial and other resources, in contrast to the slow and cumbersome procedures which government lawyers must suffer. It is not unusual for me to walk into a conference with the international examiner and the economist while facing a senior partner, a junior partner, an associate, several employees of the taxpayer and accountants from a "big 8" firm. This experience has been characterized recently to me as

> David versus Goliath, only in this instance, David is without the slingshot. To say we might be outmanned and outresourced in some of these cases is an understatement (Kamman, July 10, 1990).

The White Paper raised more controversy.[24] There was concern that implementing the BALRM method would assign residual income to the parent company. It was argued, for example, that companies were integrated for a purpose and that frequently such integration resulted in a proper allocation of residual income to both parent and subsidiary. Furthermore, vertical integration was often the only manner in which a company was able to exploit the profitable opportunities associated with their intangibles; and, by routinely assigning all or most of the residual income to the parent, the White Paper was ignoring the contribution of management at the subsidiary level (*See, for example, Dolan, 1990; Langbein, 1989; Granfield, 1989*). Granfield sums up the criticisms by stating that "[t]he White Paper repeatedly implies that these subsidiaries exist mainly for purposes of tax evasion[;]... the stereotypical affiliate for them [the IRS] is a sham and has no specialized role, nor does it generally possess any legitimate or unique, as opposed to routine, intangibles" (Granfield, 1989, p. 218).

Section 482 and the related White Paper were not, however, the only recent provisions in the Code directed at ensuring compliance with U.S. tax laws -- especially by

multinational corporations which might attempt to transfer income beyond the reach of U.S. tax laws. Section 6038A was added in 1989. It requires domestic corporations or foreign corporations operating in the U.S. that are 25% foreign owned[25] to

> "...furnish [and]...maintain (in the location, in the manner, and to the extent prescribed in regulations) such records as may be appropriate to determine the correct treatment of transactions with related parties..."(Section 6038A(a)(2)).

According to the reports on this section (Public Law 101-239 as reported by Commerce Clearing House, Standard Federal Tax Reports, paragraph 36,760.10), the committee deliberately left to the Secretary of the Treasury the flexibility to decide whether records need to be maintained within the United States or abroad and whether or not the documents need be translated into English. When translation is required, such translation must be provided within thirty days of the request for translation unless an extension is granted.

In order to increase compliance with requests for documents, this section also provides for the domestic corporation to act as the related party's limited agent specifically for IRS summons purposes (Section 6038A(e)(1)). Additionally, the section establishes penalties for failure to comply within a reasonable time. If the corporation fails (without reasonable cause) to maintain records in the proper place and manner, it is subject to a $10,000 penalty for each

tax year that there is such a failure. A $10,000 penalty is also imposed if a corporation fails (without reasonable cause) to supply requested documents within 90 days after the IRS mails a request for documents. Additional $10,000 penalties are imposed for each additional 30 days (or fraction thereof) of continued failure to comply (Regulations Section 1.6038A-4).

The Revenue Reconciliation Act of 1990 also included several provisions designed to increase compliance with tax laws in the area of transfer pricing. While some of the new sections related to record-keeping and reporting, many sections contained penalty provisions designed to aid enforcement of existing laws.

Realizing that numerous foreign corporations with less than 25% ownership were operating within the U.S., the Congress enacted Section 6038C. This section made similar record maintenance and reporting requirements applicable to all foreign corporations that engaged in trade or business in the U.S. at any time during the taxable year whether or not there was 25% foreign-ownership by one person.

Section 6662 imposed a penalty of 20% on tax underpayments in transfer pricing cases where "the net section 482 transfer price adjustment for the taxable year exceeds $10,000,000" or where the proper transfer price of goods or services varies "significantly" from the represented price. A

significant difference exists if the represented price is "...200 percent or more (or 50 percent or less) of the amount determined under section 482 to be the correct amount of such price..." (Section 6662(e)(1)(B)(1-2)). The penalty is doubled to 40% of the tax underpayment for "gross valuation misstatements." A "gross valuation misstatement" is described by substituting $20,000,000, 400 percent, and 100 percent in the definition for "significant difference" (Section 6662(h)(2)). The difference in valuation is disregarded for purposes of assessing these penalties (a) for any portion of the difference in net valuation due strictly to transfers from one foreign corporation to another foreign corporation or (b) as in many other cases

> "...if it is shown that there was a reasonable cause for the taxpayer's determination of the price, and that the taxpayer acted in good faith with respect to the price" (Committee Report on P.L. 101-508 as reported by Commerce Clearing House, Standard Federal Tax Reports, paragraph 40, 551.90).

Section 6503(k), also added in 1990 as part of Public Law 101-508, provides for the suspension of the statute of limitations for the assessment of tax following the issuance of a "designated summons." Perhaps particularly important in the case of international Section 482 transfers in which there are delays in responding and providing requested documents, this section increases the length of time available for the IRS to pursue the resolution of tax disagreements.[26] This

suspension remains in effect until (a) the taxpayer complies with the summons or (b) a court quashes the summons.

Another part of P.L.101-508 added an increase in the interest rate charged on "large corporation underpayments" from the Federal short-term interest rate[27] plus 3 percent to the Federal short-term interest rate plus 5 percent (Section 6612(a)(2)). A large corporation underpayment is an underpayment of more than $100,000 by a C corporation during any tax period.[28] According to the Committee Report, although this penalty is applied to different types of taxes, i.e., income taxes and employment taxes, the underpayments on different types of taxes are not aggregated in determining whether the underpayment exceeds $100,000. Therefore, if a corporation underpaid its employment taxes by $55,000 and also underpaid its income taxes by $55,000 during one tax period, it would not be subject to this increase in the interest rate charged on the underpayment even though the underpayment total for the tax period exceeds $100,000; on the other hand, if the same corporation underpaid its income taxes by $105,000 and its employment taxes by $5,000 in the same tax period, the income tax underpayment would be subject to this increase in the interest rate charged.

All of these measures have been enacted to aid the IRS in its efforts to collect the tax due to the United States' government. The Service seems to feel that its position has

been greatly improved by their enactment. In testimony before the Congress in 1992, Alan J. Wilensky, Deputy Assistant Secretary in the Department of the Treasury, stated that

> [b]efore the recent statutory and regulatory developments, ... some taxpayers felt little incentive to comply with U.S. transfer pricing rules. The cost of noncompliance was merely an adjustment to establish the correct price. Some taxpayers felt that the Service might impose adjustments even if the taxpayer attempted to comply with section 482. In such circumstances there sometimes may have been a strong temptation to play the "audit lottery."
> The introduction of the substantial valuation misstatement penalty under section 6662(e) has severely reduced any temptation that taxpayers may have felt to play the audit lottery. An unreasonable reporting position under section 482 now can result in the imposition of a large penalty....
>
> The Service's access to data has been improved dramatically in the last two years as a result of two measures: section 6038A and section 6503(k).... In general, section 6038A and the underlying regulations generally place an FCC [foreign-controlled corporation] on a comparable footing to a USCC [U.S. controlled-corporation] in terms of information reporting and record maintenance requirements.
>
> The designated summons rule under section 6503(k) has further improved the Service's access to relevant documentation. Prior to section 6503(k), a taxpayer could respond to information and document requests in a dilatory fashion in the hope that the statute of limitations would expire before the taxpayer was obliged to turn over the information. Section 6503(k) provides that the Service may issue a "designated summons" to a taxpayer in situations where the statute of limitations is nearing expiration and the Service requires additional information to complete its audit. Although rarely used (only six designated summons have been issued to date), the addition of this provision provides a significant deterrent to taxpayers considering dilatory responses to legitimate information requests (Wilensky, 1992,

pp. 65-66).

Following closely upon the enactment of these additions to the tax code in 1990, the IRS, in an effort to increase taxpayer compliance, made two moves to provide additional guidance to corporations in the process of establishing transfer prices. First, Revenue Procedure 91-22 outlined the procedure for advanced pricing agreements under which the taxpayer and IRS cooperate in advance to establish transfer prices. Second, early in 1992 the IRS proposed additional Section 482 regulations which provided guidelines for the taxpayer to use in analyzing transfers of intangible property absent a comparable transaction between unrelated parties.

In an attempt to reconcile some of the difficulties and settle some of the problems and issues raised by the White Paper, the Internal Revenue Service has proposed a plan (Revenue Procedures 91-22) under which the Service would make an advanced determination agreement on a company's transfer price policies when the negotiations on those international policies are near completion. This places the government and taxpayer in a cooperative, rather than an adversarial, situation with the expectation that cooperative predetermination of transfer pricing policies should result in fewer difficulties later on. In hearings before the House of Representative's Committee on Ways and Means, Shirley D. Peterson, Commissioner of the IRS, testified that thirty-eight

taxpayers, involving fifteen countries, had been included in the advance pricing agreement program (APA) by 1992. The average time required to reach agreement was twelve months,

> ...far less than it takes to resolve a significant section 482 issue through the course of examination, administrative appeals, and litigation. The APA process clearly is a win-win situation for taxpayers and the IRS (Peterson, (1992), p. 97 of Hearings).

However, having only recently been initiated, this plan has only been tried in a small number of cases, and its success on a broad scale has not as yet been determined.

With so few APA agreements, the government continued to implement rules to govern transfer-pricing situations. Regulations proposed early in 1992, established three methods of establishing an arm's length price for intangibles. Those methods (in order of priority) are: (1) the matching transaction method, (2) the comparable adjustable transaction method, and (3) the comparable profit method.

In the matching transaction method, very much as in the CUP method, the transfer price of the intangible "...is determined by reference to the consideration charged in an uncontrolled transfer of the same intangible under the same or substantially similar economic conditions and contractual terms" with adjustments made for differences between the controlled and uncontrolled transfers. Measuring the similarity of the situations involves evaluating factors such

as the similarity of geographic markets, the market size and economic development, the competition in the market, the acceptance within the market of the product or service related to the intangible, the amount and form of consideration, the duration of the contract, any terms regarding termination or renegotiation, and whether payments may be delayed or accelerated.

Under the comparable adjustable transaction method, the transfer price is determined by comparison to the price charged for the same or a similar intangible under economic conditions and contract terms that are adjustable for differences that exist between the controlled and uncontrolled transfer.

Under the comparable profit method, the arm's length price for the controlled taxpayer is determined by comparison to the constructive operating income and profit level indicators of an uncontrolled taxpayer that is similar in business classification, size of operations, presence in relevant markets, and other factors. Profit level indicators include such measures as the rate of return on assets, various margins, the ratio of operating income to sales, and the ratio of gross income to operating expenses (Treasury Regulations Section 1.482-2).

In these regulations, it is again important to note the reliance that is placed upon the existence of uncontrolled

taxpayers with identical or similar transactions, economic conditions, and contract terms for the determination of transfer prices within the controlled group.

Final regulations adopted in 1994 incorporate many of the methods proposed earlier and provide additional flexibility for enterprises (1) to use inexact comparables under all approved methods rather than restricting their use to the comparable profits method and (2) to allow for differences in the quality of the data and assumptions. The final regulations provide six methods of pricing tangibles (comparable uncontrolled price, resale price, cost plus, comparable profits, profit split, unspecified) and four methods of pricing intangibles (comparable uncontrolled price, comparable profits, profit split, unspecified). *(See Appendix 7 for a summary of these changes in the tax provisions.)*

Clearly, all the problems have not been resolved. Despite Deputy Assistant Secretary Wilensky's request that "we [the IRS] strongly urge that these new measures be given adequate time to work before introduction of major new initiative" (Wilensky, 1992, p. 67), questions still remain regarding whether existing tax laws and existing methods of enforcement are sufficient to ensure that multinationals do indeed pay their fair share of U.S. tax. Chairman Pickle summed up the position of the House Committee on Ways and Means in his closing remarks to Mr. Wilensky when he stated,

> This is a serious matter and we are going to pursue it, we are going to stay after it, and we expect you [the IRS] to do the same thing (Wilensky, 1992, p. 129-130).[29]

Judicial Findings

The tax code firmly establishes the policy that income is taxable to the party who earns it and that arrangements designed to shift income from one entity to another for the purpose of evading income taxes are not sanctioned. In the case of *Phillips Bros. Chemical, Inc. v. Comr.* (435 F.2d 53, 57 (2d Cir., 1970)) the Second Circuit Court stated in part that:

> The statute (section 482) rests on the well settled policy that income is taxable under (Sec. 61) to the party who earns it and that it is economic reality rather than legal formality which determines who earns income. Income splitting devices designed to save taxes cannot be used to undermine the established principle that income is to be taxed to its real owner.

Through the years the courts have faced a plethora of cases in which the IRS has questioned the appropriateness of the assignment of income to a particular taxpayer. Partly in response to these cases, if taxpayers are related through common ownership or control, Section 482 allows the Secretary when necessary to "...distribute apportion, or allocate gross income, deductions, credits, or allowances..." This power is not restricted to situations in which taxpayers are corporations, to taxpayers organized within the U.S, nor to

taxpayers that are affiliated.[30] The regulations accompanying Section 482 clearly establish the breadth of the law with regard to taxpayer intent:

> Transactions between one controlled taxpayer and another will be subjected to special scrutiny to ascertain whether the common control is being used to reduce, avoid, or escape taxes. In determining the true taxable income of a controlled taxpayer, the district director is not restricted to the case of improper accounting, to the case of a fraudulent, colorable, or sham transaction, or to the case of a device designed to reduce or avoid tax by shifting or distorting income, deductions, credits, or allowances. The authority to determine true taxable income extends to any case in which either by inadvertence or design the taxable income, in whole or in part, of a controlled taxpayer, is other than it would have been had the taxpayer in the conduct of his affairs been an uncontrolled taxpayer dealing at arm's length with another uncontrolled taxpayer (Reg. Sec. 1.482-1(c)).

The Bureau of National Affairs (BNA, 1988) states that there is a duality of purpose, or, as the court stated, "two distinct and narrow lines" in the law as enacted (*Eli Lilly*, 62 AFTR 2d, 88-5569 at 88-5574). The need for this duality arises from the fact that commonly controlled corporations may be viewed as a single economic entity or as separate economic entities. The first line or aspect (the "unitary" method) of the law does not require deliberate intent to avoid income taxes, but rather deals with the need to reallocate income and expenses when misallocation, in the eyes of the IRS, results in a failure to reflect the true economic situation through

> ...inaccurate accounting, negligence, or the

> adoption of pricing policies which tend to produce a division of combined net income inconsistent with the economic contributions made by the respective members of the controlled group (BNA, 1988, p. A-11).

Under the unitary method, the appropriateness of the allocation of income between or among the related economic entities -- rather than individual transactions between them -- is the subject of scrutiny. On the domestic scene, many states have a unitary taxing system under which income among a commonly controlled group of corporations operating in similar businesses is apportioned among those member corporations based upon a formula,[31] and the constitutionality of the unitary method has been successfully tested.[32]

The second intent of Section 482 (the "separate entity" method), according to BNA, is to deal with specific transactions between enterprises that are commonly controlled when the IRS determines that such transactions do not reflect what would have resulted from unrelated parties acting in an arm's length manner in similar situations. Under the separate entity argument, the presence or absence of net income for the period is irrelevant; instead, the emphasis is on the handling of specific individual transactions where some

> ...adjustments result from honest differences between the IRS and taxpayers regarding what constitute arm's-length prices, without any implication of tax avoidance, [while] others may be based on the deliberate milking of one corporation by another by setting clearly unrealistic prices (BNA, 1988, A-11).

Section 482 seems to oversimplify the process of establishing transfer prices.

> ...[T]hese regulations adopt the theory that for every transaction, there is a discernable arm's length charge or price (or, perhaps, range of such charges or prices) which can be determined from data available to most taxpayers. In theory, one has only to employ the same generally accepted managerial and accounting principles in dealing with related entities as would be employed in dealing with unrelated entities (BNA, 1988, p. A-40).

If Section 482 is interpreted to imply that there is one "correct" transfer price, setting transfer prices has proven to be more complicated than the law might suggest. The complexity of situations in which questions arise, the difficulty companies have had in meeting the standard of "exact or inexact comparables," and the varying court interpretations of the Commissioner's powers can be seen by examining a few of the many cases that have been heard under Section 482 and its predecessor, Section 45. Barrett and Rafferty (1989) suggest that some of the early cases are particularly noteworthy because "...the courts approved very broad rationales for applying the provision..." and because the circumstances in the early cases seem to fall into two general categories: (1) situations in which there is a "...transfer of either appreciated or depreciated property to a related taxpayer better able to absorb the gain or use the loss, followed by a disposition of the property," and (2)

situations in which there is a violation of the matching principle, i.e., assets are transferred after expending resources to produce those assets without recognizing the associated gain or loss on the transfer.

One of the earliest transfer cases dating back to 1943 is an example of the first category or "narrow line." *National Securities Corp. v. Commissioner* (137 F.2d 600 (3rd Cir. 1943), cert. denied, 320 U.S. 777 (1943)), brought under Section 45, was a case in which stock that had been purchased as an investment for approximately $140,000 was transferred in a nontaxable transfer[33] to a subsidiary corporation after its value had declined to approximately $8,500, a drop of almost 92% of its value. After adopting the parent corporation's basis, the subsidiary subsequently sold the stock for $7,175 and reported a loss of $133,202, the difference between the parent corporation's basis and the sales price.[34] The IRS denied the loss to the subsidiary and allocated it back to the parent. In upholding the IRS, the court stated in part that

> ....Congress has conferred authority upon the Commissioner to allocate deductions 'if he determines' that such allocation 'is necessary.' This broad discretion, limited only in that the necessity must arise 'in order to prevent evasion of taxes or clearly to reflect income.'

Central Cuba Sugar Co. v. Commissioner (198 F.2d 214 (2d Cir. 1952), cert. denied, 344 U.S. 874 (1952)) illustrates the second category or "narrow line." Here, in a tax-free

reorganization, the transfer of an unharvested sugar crop on which approximately $300,000 had been spent for planting and cultivation without a transfer of the associated expended costs resulted in a ruling in favor of the IRS. The decision went beyond the principle of "clearly reflecting income" to include the concept of arm's length consideration. Although the unharvested crop was transferred, the expenses associated with that crop were retained and reported by the transferring corporation, resulting in a loss which the company wanted to utilize as a carryback. The court's ruling again affirmed the power of the Commissioner to allocate deductions to clearly reflect income and the court went on to say that had this been an arm's length transaction the losses would have been recouped as part of the selling price.

Other cases, such as *Aiken Drive-In Theatre Corp. v. United States* (281 F.2d 7 (4th Cir. 1960)), indicate that the courts will consider the absence of a "real and valid business purpose" in determining whether tax avoidance is the underlying motive for a transfer transaction.[35] In the Aiken case, the taxpayers owned several movie-theater corporations. One of the profitable corporations of the group purchased the worthless assets of a commonly controlled but unprofitable corporation. Subsequently, the profitable entity abandoned the worthless assets and reported the loss against its taxable income. The court found that

> the sale transaction was not in furtherance of any real and valid business purpose, and the sole objective of the transfer was to attribute the deductions and corresponding loss to ...[the profitable corporation], which would use such loss to reap a tax benefit.

Not all cases have been decided as definitively in favor of the IRS's position. In *Friedlander Corporation v. Comr.* (19 T.C. 1197 (1953); rev'd and rem'd 216 F.2d 757 (5th Cir. 1954), the taxpayer operated a department store and sold merchandise to a commonly controlled partnership at cost without related expenses such as freight-in and insurance. The partnership, in turn, also operated a department store which stocked the merchandise for sale. The IRS held that the partnership was a sham and that all of the income should be allocated to the department store. In the initial trial, the court upheld the IRS's position. However, on appeal, while upholding the allocation by the IRS of certain other deductions, the Fifth Circuit court held that because the merchandise sale occurred during off-season the price charged did in fact reflect the "full fair price" of the merchandise. Therefore, it could be argued that there was a valid business purpose associated with the price charged.

Several more recent court cases involving large companies indicate that the problems are limited neither to smaller nor to domestic organizations. In *E.I. duPont de Nemours Co. v. U.S.* (608 F.2d 445 (Ct. Cl., 1979), *cert.* denied, 100 S. Ct.

1648 (1980), the commissioner focused on what he considered to be unrealistic profits assigned to a totally-owned Swiss subsidiary. However, duPont was able to show a clear business purpose for establishing the subsidiary -- to provide technical, marketing, and special services to European customers. Because the subsidiary was located in Switzerland, the tax rates imposed on its profits would be substantially lower than those that would have been imposed under U.S. tax laws on duPont. Because of the structuring of the transactions among the subsidiary, its U.S. parent, and its sister companies, the subsidiary's risks were considered minimal, and management made certain that duPont sales from Australia and South Africa were channeled through the subsidiary. Additionally, internal memos showed that the plan was for the subsidiary to retain 75% of the total profits. Rejecting arguments of comparable controlled price, cost plus, resale price, and comparison of the subsidiary's gross profit margin with statistical averages, the court found that the established prices did not constitute an arm's-length transaction[36] and reallocated the income between parent and subsidiary based largely upon a unitary method based upon industry statistics.

The 1985 case of *Ciba-Geigy Corporation* (Par. 85.11 P-H TC) dealt with the Ciba-Geigy Corporation (CGC, formerly called Ardsley), the U.S. subsidiary of Ciba-Geigy Ltd (CGL,

formerly Geigy-Basle), a Swiss corporation. In this particular case, the court addressed questions of the similarity of property transferred, the similarity of the transfer situations, and the abuse of discretion by the commissioner. The commissioner contended that a 10% royalty paid by CGC to CGL (U.S. subsidiary to Swiss parent) in return for the right to market certain triazine-compound herbicides was not an arm's length consideration. Relying upon various herbicide licensing and manufacturing agreements CGL had with other corporations in which a 5-6% royalty rate was paid, the IRS determined in the deficiency notice that a 6% royalty rate was appropriate. The taxpayer argued that the situations were not similar and presented evidence that duPont had offered to pay CGL a royalty of 10 to 12.5% for a similar agreement. While the court found that the other third-party agreements did "... represent transfers involving 'the same or similar intangible property'...", it did not find that "...these transfers occurred under 'the same or similar circumstances' as the transfers at issue in the instant case" (Par 85.11 P-H TC, pg. 85-118). While stating that the commissioner "...has considerable discretion in applying section 482 and his determination must be sustained unless that discretion has been abused" (Par 85.11 P-H TC, pg. 85-117), the court nevertheless found "...that petitioner [CGC] has satisfied its heavy burden of proving that respondent's [commissioner]

reduction of the royalty from 10 percent to six percent ... constituted an abuse of discretion..."(Par 85.11 P-H TC, pg. 85-124).

In *Bausch & Lomb, Inc. and Consolidated Subsidiaries (B&L) v. Commissioner* (92 T.C. No. 33 (March 23, 1989)), the company (B&L) paid its Irish subsidiary (B&L Ireland) to manufacture soft contact lenses in the Republic of Ireland. In intercompany transfers, B&L Ireland sold the lenses it manufactured both to B&L in the U.S. and to sales subsidiaries of B&L worldwide. The technology and the trademarks used in the manufacture and sale of the contact lens belonged to B&L. B&L maintained that it was using a comparable uncontrolled price that was based upon the prevailing market in establishing a transfer price of $7.50 per lens and offered expert testimony and licensing agreements between unrelated parties to support its position.

Using the "contract manufacturer approach,"[37] the IRS argued that the technology supplied to the Irish subsidiary by B&L permitted the subsidiary to manufacture the lenses at a lower cost which would have enabled the subsidiary to sell them to unrelated parties at an even lower price. Viewing the Irish subsidiary as a contract manufacturer, the IRS, therefore, wanted B&L to use a "cost plus" method to establish the "correct" transfer price. The cost to B&L Ireland was established at $1.50, and the IRS argued for a transfer price

between $2.25 and $3.00 per lens which would have been cost plus 50% to 100% above cost.

Failing this approach, the IRS argued for identifying the particular intangibles involved and assigning a market royalty for each. This latter approach resulted in a market royalty of between $4.33 and $6.41 per lens.[38]

The court rejected both of the IRS positions and determined that B&L had established an arm's length price. It stated in part that

> ...[the IRS] argues that B&L *could have* produced the contact lenses purchased from B&L Ireland itself at lesser cost. However, B&L *did not* produce the lenses itself. The mere power to determine who in a controlled group will earn income cannot justify a section 482 allocation of income from the entity who actually earned the income *[Court added emphasis]* (*Lilly*, 92-297).

However, the court rejected B&L's reliance upon comparables, finding that the technology and the circumstances were too different for the agreements to serve as comparables. The court decided upon a profit split that gave results between the splits proposed by the two adversarial parties.

As to the prospect of periodically readjusting royalty rates based on the actual results of operations, as called for in the White Paper, the court rejected this method of determining profit splitting. It stated that

> (s)uch information would not have been available...to a potential licensee negotiating a license agreement. The arm's length nature of an agreement is determined by reference only to facts

in existence at the time of an agreement....

Here, as in *R.T French Co. v. Commissioner*, 60 T.C. 836 (1973)), another case involving Section 482 reallocation of royalties paid to a foreign affiliate, the Tax Court concluded that "[w]hat later transpired in no way detracted from the reasonableness of the agreement when it was made."

While *Eli Lilly and Co. v. Commissioner* (84 T.C. 996 (1985) rev'd in part and aff'd in part in 856 F.2d 855 (7th Cir. 1988)) was based in part on a nonrecognition transaction under Section 351, much of the case also rested on questions about Section 482 transfers between the U.S. parent (Lilly) and its Puerto Rican subsidiary (Lilly P.R.). Lilly formed the subsidiary, transferring to Lilly P.R. all rights associated with patents to its most profitable product, Darvon, in return for all of Lilly P.R.'s stock in a nonrecognition transfer. Subsequently, Lilly P.R. manufactured Darvon and sold the product back to its parent for resale in the United States. Because the subsidiary qualified as a possessions corporation under Section 931 of the Tax Code, and because the subsidiary was also granted tax exemptions by the Puerto Rican government, the subsidiary's income was virtually tax exempt.

Lilly P.R. received 100% of cost of goods sold less operating expenses plus savings associated with its location in Puerto Rico. Lilly's return was 25% of the expenses

associated with the distribution of Darvon. The remaining profits were treated as return on intangibles and were split 60%-40% between Lilly P.R. and Lilly respectively. The IRS argued against Lilly's transfer of the manufacturing intangibles associated with Darvon to Lilly P.R. in exchange for stock in a Section 931 transfer and reallocated the income associated with Darvon back to Lilly. Such a reallocation left Lilly P.R. essentially in the role of a contract manufacturer while Lilly provided specialized services in exchange for a fee. The IRS also argued that if the transactions had been conducted at arm's length, Lilly would have required a lump sum or periodic cash payments in return for the intangibles. The court agreed with the correctness of the Section 931 transfer by the taxpayer. It also agreed that the matching principle had not been violated and that there was no tax avoidance because a valid business reason for locating in Puerto Rico existed. However, while admitting that "no unassailably precise methodology exists for determining normal profit rates on marketing expenses or the relative contributions of manufacturing and marketing intangibles," the court found that there was a distortion of income and did reallocate some income back to Lilly because an arm's length price was not being charged by Lilly P.R. for the Darvon *(See Appendix 8)*.

The case of *Searle & Co. v. Commissioner* (88 T.C. 252

(1987)) bears many similarities to the Lilly case. In the early 1960s Searle, a U.S. pharmaceutical company, found it lacked room for expansion and faced growing concerns about neighborhood safety and pollution control in its Skokie, Illinois, plant. Aware of tax incentives available, Searle established a Puerto Rican subsidiary (Searle P.R.) and within approximately two years transferred all rights to six of its seven most profitable product lines under Section 351 nonrecognition transfers.[39] With Searle providing marketing and promotion services to its subsidiary, Searle P.R. sold the products to unrelated distributors in the U.S. with the result that no transfer prices were associated with the products themselves. The IRS took the position that an arm's length transaction had not occurred in the initial stock-for-intangible transfer. The court, however, once again found a valid business reason -- rather than tax avoidance -- for the creation of the Puerto Rican subsidiary. Again, however, the court found that the income of Searle was distorted by the transfer to and use of the intangibles by Searle P.R. *(See Appendix 8)*. The court, therefore, reallocated a portion of the income to Searle. The court believed that had the situation been arm's length, Searle would not have transferred income producing assets for non-income producing stock, even though the stock was of a value equal to the intangibles. The court stated that:

> [t]he intangibles transferred to [Searle P.R.] represented products accounting for approximately 80 percent of petitioner's profits and sales. In an arm's length situation, it would be the height of corporate mismanagement to transfer the lion's share of the corporation's income producing assets to another corporation solely for non-income producing stock.... Thus, while petitioner received in exchange [stock] of 'equal value' to the intangibles transferred, we are unable to conclude that petitioner received arm's length consideration.... The result is a distortion of petitioner's income in the taxable years before us which would not have occurred if the transaction had been carried out between unrelated parties (88-187).

At the same time, the court seemed to be taking a somewhat opposing position by stating:

> Undoubtedly tax considerations were also a major concern as Petitioner expressly admits.... It is well established that taking advantage of tax benefits made available by Congress is not tax avoidance...(88-184). We find a ... distortion of income in the facts before us. One of the purposes of the transfers of intangibles to [Searle P.R.] was to obtain a tax advantage not available in an arm's length transaction with an unrelated party (88-188).

The court seemed to be saying both that there was and was not something wrong with a company structuring its affairs in accordance with the nonrecognition transfer provisions of the tax code, not because of the amount of consideration, but rather because of the nature of the consideration received (Barrett and Rafferty, 1989). However, the courts have clearly stood behind the right of corporations to establish subsidiaries that may lower their income tax burden in accordance with congressional mandate. In both *Lilly* and

Searle, the court saw fit to address this matter and to quote itself from an earlier case (*Barker-Green*, 35 T.C. at 386) when it stated:

> When the Congress offered certain tax benefits as an inducement to United States corporations to engage in foreign trade, it was to be expected that some corporations would seek to avail themselves of these benefits. The creation of a subsidiary to carry on the business in the Western Hemisphere area of an existing domestic corporation does not constitute tax avoidance within the meaning of (the predecessor of section 269),... and there seems to be no good reason why the deliberate organizing of such a corporation's business and sales procedures to meet the other conditions specified by the legislation and thereby to qualify for the tax benefits offered should be regarded as tax avoidance. Otherwise the purpose of organizing a subsidiary would be lost and the congressional objective would not be carried out.
>
> It has repeatedly been stated that taxpayers have the right so to arrange their affairs that their taxes shall be as low as possible, *Gregory v. Helvering*, 293 U.S. 465 914 AFTR 1191)(1935); that one is not obliged to pursue a course of action giving rise to a greater tax liability if another is open which will give rise to a lesser liability, *Fruit Belt Telephone Co.*, 22 B.T.A. 440 (1931), ... and that what a taxpayer did, rather than what he might have done, determines his liability. *Seminole Flavor Co.*, 4 T.C. 1215, 1230 (1945)....

These cases are but a few of the disputes that have found their way into the court system. The multitude of transfer cases that have been brought to court show clearly that the problem of establishing a "correct" transfer price is not an easy matter for any of the participants. Companies make decisions on where to allocate resources based upon many factors. Taxes are rightly one of those factors. The IRS in

its role as tax collector for the U.S. government recognizes that companies may make mistakes or, in some cases, may even become overly zealous in their management decisions regarding allocation of income. The courts stand between the two -- keeping each side within bounds, preventing each side from becoming too enthusiastic in its position, and protecting the interests of both the government and the taxpayer.

Theories of the Firm

Clearly tax considerations should play an important role in strategic management decisions regarding what resources an enterprise will employ, how resources will be employed, and where resources will be employed. But taxes should rarely, if ever, be the only factor affecting such decisions. What other considerations go into this decision-making process? An examination of some of the existing theories of the firm may help to clarify the important areas of choice of asset utilization, location of operations, and, particularly for the global enterprise, the cost allocation policies among related parties to be used in accounting for resources.

While disagreements exist over any single theory of the firm, general consensus does exist that whether firms are operating under conditions of perfect competition (Cyert and March, 1963), under monopolistic conditions (Chamberlin, 1946), or under oligopolistic conditions (Stigler, 1946) the

primary objective of most firms is profit maximization. One criticism of this objective is that the centrality of emphasis on profit maximization makes it deficient and unrealistic. Profit is seen by critics as only one of the many goals that motivate the behavior of firms. Among other goals that have been suggested are long-run survival of the firm (Rothchild, 1947), personal motives of entrepreneurs (Katona, 1951), interaction of personal motives of the individuals in the firm (Papandreou, 1952), the results of bargaining among the members of the firm in the areas of production, inventory, sales, market share, and profit as a response to changing pressures (Cyert and March, 1963), and making a satisfactory profit rather than a maximum profit (Gordon, 1948 and Margolis, 1958). Even though there may be disagreement over the adequacy of a theory of the firm that emphasizes profit maximization to the exclusion of other goals, profit remains a part of most theories. Decentralization of operations and associated transfer prices and cost allocations have further complicated the search for a theory of the firm.

The trend toward decentralization within business organizations has increased the importance of properly accounting for internal transfers of goods and services, in part, to measure how well individual responsibility centers are contributing to the goals of the organization. There are numerous transfer pricing policies currently being employed,

such as transferring within the organization at cost (full production or variable), cost (again full production or variable) plus a reasonable markup, market, market less a discount, and negotiated prices.[40] Regardless of the policy selected, it is important that transfer prices enhance rather than impede performance evaluation and profit maximization within the organization. This is true whether the divisions are organized as cost centers or as profit centers.

Frequently, decentralized organizations are organized as profit centers rather than cost centers. Benke and Edwards (1980), in interviewing executives from 23 large companies found 83% were set up as profit centers, and that 15 of those companies (65%) primarily used some type of market-based technique for establishing transfer prices. Because transfer prices are revenues of the center supplying the goods or services and costs for the center receiving them, transfer prices can affect the performance evaluations of both. With each division operating somewhat like a separate business, preparing its own balance sheet and income statement, the division manager can see the effect his/her decisions have on the division's profits.

It is important that transfer-pricing policies prevent manipulation or distortion of profits or costs among divisions with the result of distorting the performance of the centers. Such distortion at the center level may, in turn, distort

profit potential at the enterprise level. If, for example, transfer prices are set too high, the supplying center will report larger profits while the receiving center will report larger costs and lower profits than actual performances would merit. Profit, return on investment, and variances from standard or budget figures -- the typical measures used for performance evaluation -- can all be distorted by improper transfer pricing. In some cases, these difficulties are alleviated by the existence of clear market prices. When significant quantities of a good or service change hands in arm's-length transactions, a market price can be determined. If the market were perfectly competitive, the company could buy all the goods or services it needed and sell all the goods or services it produced at the market price. Under these circumstances, use of the market price would also be the ideal price for intracompany transfers. Divisional autonomy would be maintained -- division managers could make decisions and be responsible for the results of those decisions based on an externally established market price. The use of the market price for transfers would also result in more accurate reporting of divisional performance for evaluation purposes.

However, most enterprises do not operate under conditions of perfect competition with the result that there is rarely one ideal market price for goods or services. Usually there is, instead, an imperfectly competitive market. David

Solomons (1965, p. 177-78) describes some factors that contribute to imperfect competition in markets: (1) special characteristics of the transferred good that differentiate it from other similar goods; (2) market prices that may be "hedged with qualifications" that make them invalid for substitution as transfer prices; and (3) discounts and terms such as delivery and payment schedules, warranties, and quantities and frequency of deliveries that can result in more than one "market price." Unable to remove all of these factors, selection of the best transfer price -- for tax purposes and for decision-making --remains a difficulty for many organizations.

While the importance of transfer-pricing policies may be more readily seen in profit centers where evaluation of center performance is based to a greater or lesser degree on reported results, in a division organized as a cost center, where only costs and not revenues are accumulated, accurate transfer pricing still remains important. Though transfers in cost centers are often made at standard cost, variances must be explained. If, for example, the receiving division (Division A) needs a rush order, the supplying division (Division B) may face additional costs because of the immediacy of the demand made upon it. The transfers, if made at standard, would appear not to affect Division A which would record the cost of the transfer at standard. Division B, on the other hand, must

explain its variances from standard costs. To the extent that Division A and its rush order could be held to be responsible for Division B's variances, the performance evaluation of both divisions will be affected. One method that has been used in an attempt to overcome this problem is to make the transfers between cost centers at standard cost plus variance. However, if transfers are made at standard plus all variances, Division B could transfer out not only the unfavorable variances caused by Division A's emergency order but also other unfavorable variances caused by its own inefficient operations. Again, the transfer price has the potential of affecting the performance evaluation of both divisions.

As complex as the problem appears to be when there are three interests -- the supplying division, the receiving division, and the overall corporate interest -- involved, the problem becomes even more complicated when the organization becomes multinational, and the taxing interests of two or more governments are brought into the process.[41]

In the area of multinational operations, the goal of profit maximization takes on new importance. In the international arena, investors have the opportunity to place their capital abroad in two ways: either through direct or indirect investments.

Multinationals are usually set up as profit-seeking enterprises. The decision to "go global" is, therefore, often

influenced by the possibility of profit maximization on an international scale. Robock, Simmonds, and Zwick (1973, pp. 511-513) suggest that the primary goal of the multinational enterprise is to maximize aggregate profits after taxes. Because the multinational consists of units that may be simultaneously both autonomous and related, the opportunity may exist for a large number of goods and services to be shipped between and among them at the direction and discretion of the parent company.

As stated earlier, Greene and Duerr (1970), Milburn (1976), and Salem (1986), among others, have found that taxes play a role in the international transfer-pricing decisions of a firm. The argument that these decisions are based partly on tax avoidance appears relatively simple: If the nominal tax rate is lower in Country A than in Country B, the overall profit will be maximized if the sales from the subsidiary in A to the subsidiary in B are overpriced, or, conversely, if sales from B to A are underpriced. The resulting higher profit reported in Country A will be taxed at a lower rate while the higher tax rate of Country B will be applied to a lower profit -- resulting in an overall tax saving to the enterprise. The opportunity exists for intracompany prices to be manipulated with the result of maximizing the overall organizational profits, often to the detriment of individual organizational segments and external third parties such as

governments with taxation jurisdiction *(See Appendices 1A-D)*.

Do multinationals use cost allocation and transfer pricing to shift income from one tax jurisdiction to another, and if so, to what extent are such practices used? Brooke and Remmers (1972, p. 176), after interviewing senior executives, felt that such policies were "less useful than is often believed as a means to avoid tax" because the differences in tax rates among jurisdictions were generally too small to make the implementation of such polices worthwhile and because the decision-making process involved was too complex.[42] Some writers suggest that the study of international transfer pricing may have been unduly limited to the role of such nominal taxation rates in pricing decision. Among other *a priori* inducements to transfer price maneuvers are: overall tax policies and requirements for joint ventures for foreign investors. Plassachaert (1979) suggests that overall taxation policies need to be examined. In particular, restrictions on ownership, which may result in "forcing" the multinational into the use of a joint-venture setup, import duties, and exchange controls such as governmental restrictions on repatriation of profits and dual exchange rates need to be considered. Joint ventures between foreign investors and local partners are often the vehicle of choice for multinationals. In some cases, the joint venture is imposed by the government (frequently with the requirement

that local partners hold a majority interest); in other cases, the choice is an acknowledgment of the difficulty of operating in a foreign culture and the advantage of having local partners to facilitate acceptance of the enterprise. Joint-venture transfer pricing could also be used to "reallocate" earnings to a "predominant" partner. For example, if a 50-50 joint venture were set up by choice or by governmental requirement between a "predominant" partner in Country A and a local partner in Country B, by overpricing goods being sold by A to B (or, alternatively, by underpricing goods sold by B to A), the "predominant" partner could still maintain control over a larger share of the "true" profits generated while appearing to abide by the 50-50 agreement. To the extent that local partners and local governmental agencies closely monitor such practices, restraint of such transfer price maneuvers may be abated *(See Stopford and Wells, 1972; Vaitsos, 1974).*

Statistics on total foreign investing and direct foreign investing indicate that individuals and firms have acted to invest internationally. Some investors have chosen portfolio investment, placing their capital in the international markets in the form of security ownership. Other investors have gone the route of joint ventures to develop and operate business opportunities in foreign countries. Still others have invested internationally through independent operations. Ragazzi (1973) points out that direct foreign investment is

usually done by corporations while most individuals use portfolio investment. Foreign direct investment has distinct advantages for the investor. Among these advantages are physical proximity to markets or factors of production such as labor or resources, opening of markets that might otherwise be exclusionary, and lower costs for factors of production.

The direct form of foreign investment also has possible disadvantages for the investor, disadvantages that portfolio investment through the international market does not have. Three of these disadvantages -- cultural differences, currency exchange, and ethnocentricity -- are delineated and discussed by Hennart (1947). Both language and cultural differences exist among people. These differences, according to Hennart, tend to be more marked between rather than within countries.

Even though students in some countries spend many years learning the language of another country, this learning can rarely be complete down to the nuances and idioms that native speakers might use.[43] In addition, there are usually cultural, legal, social, and economic differences and idiosyncrasies that individuals living and working in foreign countries must master. These differences may be subtle and yet have enormous consequences in the business setting. Overcoming these differences takes time and education (*See, for example, Saltz and Foster, 1994*). They may make the communication of information between the parent and the

foreign subsidiary more costly than if the parent had chosen to maintain all operations within one political jurisdiction where these differences would be minimized.

Hennart believes that currency exchange disadvantages take several forms. If the parent and subsidiary are in different countries, the two operations generally will be dealing with different local currencies. Because currency exchange rates change with the passage of time, exchange gains or losses may result from transactions between the parent and subsidiary. In addition, in combining the financial statements of the two operations, currency translation gains and losses generally result. Direct costs in the form of extra time for bookkeepers and accountants are incurred in the preparation of these translations -- costs that would not be incurred if the enterprise had chosen to operate within an area of a single currency.

Ethnocentric disadvantage, according to Hennart, arises when an investment located in a foreign country is exposed to possible discriminatory actions by another government. Especially if assets are transferred in the form of direct foreign investment, these discriminatory actions may take the form of limiting the access of the operation to capital markets in the country, requiring import or export licenses, limiting the ability of the operation to repatriate earnings, reducing competitiveness by making special subsidies to

domestic companies, and even threatening expropriation of the foreign-owned assets. The potential for these discriminatory actions limits the actions of the foreign-owned operation.

If so many disadvantages exist for the foreign-controlled operation, what makes companies choose to attempt to either overcome or to operate within the constraints of these potential disadvantages and locate assets abroad in the form of direct foreign investment? Several theories have been advanced to explain this. Underlying most of these theories are one or more aspects of the idea that investors want to increase their potential wealth by increasing the rate of return (through interest, dividends, sales, etc.) and/or by reducing the risk involved with their investment of capital.

Increasing Rate of Return: Interest rates vary over time. Interest rates also vary geographically. Kwack (1972) advanced the idea that companies in capital-rich countries choose to invest abroad in order to take advantage of the higher rates of interest that may be achieved at a given time in another political jurisdiction. Because higher interest rates generally are associated with greater risk, those seeking out foreign investments with higher rates of return at a given period of time are probably exposing themselves to more risk. In order to minimize risk, would it not be wise for the investor who wants that higher return to utilize

portfolio investment and leave the ownership and operation of the investment in the hands of natives who are not exposed to the disadvantages mentioned earlier? Indeed, to illustrate this, Dunning (1970) summarizes historic trends in investment, pointing out that up until World War I, most foreign investment was made by a small number of European countries in the form of portfolio investment. However, the fact that action in the arena of international investment after World War I has been more heavily in the form of direct foreign rather than portfolio investment argues against the sufficiency of simply seeking higher rates of return as an explanation of foreign direct investment.

Reducing Risk Markowitz (1959) and Tobin (1958) go beyond rate-of-return differences for justification of foreign investment by considering the risk aversion of investors. By investing across a broad spectrum, the investor can both increase the return and reduce the total risk in the portfolio. Levy and Sarnatt (1970), in empirical tests found that even investors from countries such as the United States where the rate of return was then relatively high and the risk relatively low for portfolio investments, benefitted from international diversification.[44] The theory could be useful in explaining why countries have reciprocal investments in each other; i.e., Swiss investors place capital in the United

States while U.S. investors do so in Switzerland (*See Appendix 9*).[45] Hennart (1985) suggests that this theory is insufficient for direct foreign investment because it does not predict why or under what conditions portfolio or direct investment will be preferred. Ragazzi (1973) attempts to partially answer this by focusing on the capital markets of the investee countries. In less developed countries, there may be no organized markets; therefore, investors are forced to go the route of direct investment. Likewise, even in more developed countries, differences in the reliability and amount of accounting information available can make portfolio investment more risky for the minority shareholder, while direct investors are less affected by possible short-term fluctuations and also have access to the information necessary for decision-making.[46]

Imperialism. The theory of imperialism suggests that rich and powerful countries are in a position to exploit their poorer, less powerful neighbors. Certainly, in times when European countries were colonizing, exploitation did take place when colonizing nations were able to dominate or "bully" the natives into submission. Monopoly rents and exploitation of local labor and resources in new worlds and in colonies such as India and Malaysia were not uncommon. But, even if it were sufficient to explain investment during colonial times

and in developing countries, this theory is insufficient today when the majority of investments are made in developed rather than developing countries.

Product Cycle. The theory of product cycle presents foreign direct investment as one step in the development of foreign markets. As originally presented by Vernon (1966), the U.S., with its high per capita income and its large markets, is the place where new technological products which reduce labor or appeal to the affluent citizenry first will be introduced. Production will be located in the U.S. due to the abundance of skilled labor and to keep production near the consumer. Goods become standardized to the American markets for which they are produced. As income rises in other countries, the demand for these goods rise there, and American firms look to these countries as a way of increasing their sales[47]. However, the companies soon find that it is desirable to produce the goods within the foreign countries because of different standards which may exist and also because of the proximity of consumers. Vernon revised this theory in 1977 to account for the rapid growth of direct investment by Japanese and German companies explaining that, while the U.S. continued to lead in technical innovations, others had become leaders in ways of economizing on the use of land and material[48]. Hennart (1985) argues that this theory

is insufficient because it explains neither vertical integration nor native ownership of production facilities with licensing of technology and limited exposure for the investing firm.

Other Theories. Other theories explaining direct investment have been advanced as well. Aliber (1970) suggested imperfections in the capital market. In a foreign country with a weak currency, because of these market imperfections, if an investor could supply hard currency, a native investee would be able to borrow funds within his/her country at a lower rate than domestic competitors. Aliber's theory, however, does not explain reciprocal direct investments. Others have suggested theories relying upon other factors such as technology (Hymer, 1970 and Kindleberger, 1969), or product differentiation (Caves, 1971) as explanations.

No one theory yet dominates either for the firm in general or for the multinational. However, in the decision-making process of the firm, profits (whether reasonable or maximized), governmental restrictions, and tax laws seem to play a role in whether to, how to, when to, and where to move globally.

Formulary Apportionment of Unitary Income

If the Federal government is intent on imposing taxes on corporations, guidelines must be established to ensure that all profits of such businesses are equitably subjected to tax. The determination of the appropriate portion of a multinational's income attributable to the corporation's U.S. operations remains a complex and debatable issue. Looking to the manner in which a multi-state corporation's income is apportioned for state taxation may provide some measure of relief in this area. The individual states now use one of three methods in determining the amount of income to be taxed within that particular state: (1) specific allocation, (2) separate accounting, and (3) formulary apportionment.

Specific allocation requires that income and expenses be traced to their sources and assigned to the jurisdiction in which they arise. This method has been used most appropriately for income and expenses related to property rather than to the normal operating activities of an enterprise.

Separate accounting requires that income be computed separately for each state jurisdiction. Currently, MNE income is basically done under the separate accounting method with separate computations for each governmental jurisdiction. For MNEs, as for multi-state corporations, there are difficulties with this method for reasons previously mentioned: there may

be no comparable arm's length price for goods or services transferred and allocation of joint or common costs is an arbitrary process, making an absolute determination of income for each location an arbitrary calculation at best.

Under the third method, based on a formulary apportionment, income typically is computed for the enterprise as a whole and then apportioned among the states based upon an average of the proportion of in-state property, in-state sales, and in-state payroll to the corresponding enterprise-wide totals for tax purposes. Each individual state may then establish its own rules governing the taxable amount of the income apportioned to it and the tax rate that will be applied *(See Appendix 10)*.

The Supreme Court has upheld both the constitutionality and fairness of the three-factor formulary apportionment method for multi-state corporations (*Underwood Typewriter Co. v. Chamberlain*, 1920; *Mobil Oil Corp. v. Commissioner of Taxes*, 1980; and, *Exxon Corp. v. Wisconsin Department of Revenue*, 1980) and has also permitted the use of a nonstandard formulary approach (*Moorman Mfg. Co. v. Bair*, 1978). On June 20, 1994, the Supreme Court held that California did not violate the Constitution in using a "worldwide combined reporting" method to determine the amount of California income for purposes of corporate franchise tax due (*Barclays Bank PLC v. Franchise Tax Board of California*, 1994).[49] This case

extended the application of California's three-factor method from domestic-based multinationals with foreign subsidiaries (*Container Corp. of America v. Franchise Tax Bd.*, 1983) to domestic operations with foreign ownership.

If a formulary approach were to be adopted for use by MNEs, a formula equally weighting all three factors could result in an overallocation to jurisdictions with higher wage rates and an underallocation to jurisdictions with lower wage rates because of the dramatic differences in wage levels around the world. Work by both Schmidt (1986) and Hreha and Silhan (1986) has indicated that a two-factor formula using sales and property works at least as well as, if not better than, the three-factor formulary in terms of allocative accuracy. Both studies, therefore, suggest the use of a nonstandard formula with payroll assigned either a zero or a negative weight.

Except for the incorporation of the sales figure into this formula, the idea of using the factors of production (i.e., property and payroll) as a basis for assigning income could be viewed as a variation of the BALRM and Profit Split methods proposed in the IRS White Paper. Application of a formulary apportionment to a worldwide unitary income figure would represent a recognition of all operations of the MNE as integrated parts of a single enterprise. Although operations in different localities would still have their apportioned

income taxed under different tax rules, the initial apportionment would eliminate many of the problems of transfer prices and arbitrary allocations. Each country would maintain its taxing sovereignty in the same manner that states currently maintain sovereignty through required manipulations of that income apportioned for local taxation purposes and through setting rates of taxation. Although separate accounting would still be maintained for internal purposes of management planning and control, a single enterprise-wide accounting of income should facilitate that task. Such a plan would necessitate a global harmonization of accounting rules. Furthermore, with jurisdictional autonomy to manipulate this unitary income figure for tax purposes left intact, with the increased globalization of markets and the increased number and size of MNEs, and with the increased number of international investors seeking easily comparable financial data, the impetus for such harmonization should be strong *(See, for example, Anderson, 1993; Braiotta, 1993; Carmichael and Craig, 1992; Purvis, Gernon, and Diamond, 1991; Blake, 1990; McIntyre, 1991; Bucks and Mazerov, 1993; and Kauder, 1993)* .

Current Concerns and Developments

Several principles govern tax laws for multinationals. Among these are:

- national sovereignty,
- domestic neutrality, and
- foreign neutrality.

The principle of national sovereignty, or territoriality, gives each nation the right to tax income generated within its borders. The United States has gone beyond the principle of national sovereignty and adopted the viewpoint of taxing worldwide income.[50] Within this viewpoint, the principle of domestic neutrality in the tax system dictates that a U.S. subsidiary be viewed as "...simply a U.S. concern that happens to be operating abroad" (Choi and Mueller, 1984, p. 448). Therefore, U.S. corporations operating overseas are subject to U.S. tax on their income -- regardless of where it is earned. At the same time, however, the income earned in foreign countries by these subsidiaries may also be subject to taxation by foreign governments. The principle of foreign neutrality dictates that the

> ...tax burdens of foreign affiliates should be equal to those experienced by local competitors. In those countries that ascribe to this principle, U.S. affiliates overseas are looked upon as companies that happen to be owned by U.S. residents (Choi and Mueller, 1984, p. 448).

Because the U. S. government taxes income arising both inside and outside its national borders, it permits MNEs to use a deferral system and/or to claim a foreign tax credit for income taxes paid abroad in order to avoid international

double taxation.[51] But have these laws been successful in maintaining a "level playing field" for all competitors?[52]

Arguing that U.S. foreign tax policy has been in a state of degeneration since the early 1950's, McClure and Bouma (1989) suggest that this has seriously threatened the competitiveness of American multinationals and that the U.S. should move toward a tax policy centered in territoriality. They state in part that

> [t]he international competitiveness of foreign operations of U.S. persons is critical to the economic well-being of the United States and should be the single most important consideration guiding our system of taxing foreign income. Under the law as it now exists, foreign operations of U.S. parent corporations are at a serious disadvantage vis-a-vis the foreign operations of foreign parent corporations based in countries that either use territoriality or use a tax system that approximates territoriality....[A]ll of the major trading countries of the world, except the United States, use such systems.... Because concern for U.S. competitiveness in the global marketplace has taken a back seat when important tax policy decisions were made, we may find in the not too distant future that our system for taxing foreign-source income has 'priced' U.S. parent corporations out of most foreign markets and, in some cases involving imports, even the U.S. market (p. 1406).

In a similar vein, Ross (1990) agrees that enactment of U.S. tax laws on the international scene has largely been the result of looking for ways to maximize tax revenues rather than looking at the ways the laws will impact business activities in the global market. Admitting that the future effects of a law can only be estimated when enactment occurs,

he suggests that "...the incoherence, complexity, and inadministrability of many of the new statutory provisions clearly have undesirable effects" (p. 333).

Not all, however, are so critical of the U.S. tax system. Brownlee (1989) recognizing the existence of purposes other than revenue generation underlying tax laws -- purposes such as "civic humanism" and "ethics of citizenship" -- states

> ...that American tax policy, even during episodes of great contention, has been influenced by pragmatic people who demonstrated that they could learn from experience, rise above narrow self-interest, and change their minds. The recent dismal critics of the American process of taxation have failed to recognize important occasions when American legislators and bureaucrats have separated taxation from short-run, short-sighted economic interests...(p. 1614).

The importance of global markets and America's future economic interest in them can perhaps best be illustrated through aggregate measures such as foreign-source income and the foreign tax credit. The foreign source income of U.S.-based multinationals claiming a foreign tax credit rose from $3.6 billion to $59.5 billion between 1961 and 1982, an increase of over 1550%. During those same years, total worldwide income, the amount subject to U.S. taxation, increased by only a little over 350% from $22.9 billion to $107.2 billion. The tax credits claimed are estimated to have risen from $20 million in 1925 to a high of over $26 billion in 1978 (Internal Revenue Service, Statistics of Income: Data

Release, July 1990). These figures are but one measure of the increasing importance of global markets to U.S.-based corporations and the consequent potential importance of the revenues generated in those markets to the U.S. tax system.

In light of these large increases in revenues without a seemingly commensurate increase in tax, Congress and the IRS question whether corporations in global operations are paying their fair share of U.S. income taxes. In 1990 hearings before the House of Representatives Ways and Means Subcommittee, Fred Goldberg (1990), Commissioner of the Internal Revenue Service, stated, "We believe that the U.S. Government is being short-changed billions of dollars annually. Unfortunately, there are no quick fixes or easy and dramatic solutions." In 1992 in a second hearing on the matter, Representative Paul E. Kanjorski suggested that the problem had not improved in the two intervening years and hinted at one of the major culprits when he stated:

> ...[F]or decades major multi-national corporations have been using the transfer pricing loophole to bleed the U.S. Treasury of tens of billions of dollars in badly needed revenues.... The size of the transfer pricing loophole was first documented by this subcommittee's July 1990 hearings on tax avoidance by U.S. subsidiaries of foreign corporations. Those hearings conclusively demonstrated that the transfer pricing loophole is big enough to drive a Toyota through (Kanjorski, in Hearings, 1992, p. 25).

Examples of specific companies and particular countries which are believed to be contributing to this problem have

been reported at both the 1990 and 1992 House Subcommittee hearings. In one of the cases investigated, a foreign corporation was found to have had sales of more than $3.5 billion in the United States over a ten-year period during which the company reported gross profits of less than $600 million and paid only $500 in federal income tax (Pickle, 1990). In 1992, mention was made of one foreign company which, while owing $27 million (according to the IRS), had paid only $123 in U.S. tax (Kanjorski, 1992). Referencing a March 22, 1992 article in the Sunday Times of London which intimated that the British government was facing similar problems in collecting taxes, particularly from Japanese firms, Representative Duncan Hunter stated that he had "...no intention of singling out Sony.... However, given the ludicrously low profit levels which Japanese owned U.S. firms report to the IRS, it seems likely that this kind of internal manipulation is widespread" (Hunter, 1992, p. 34). Showing graphs of Statistics of Income data, Hunter pointed out that while all foreign controlled U.S. corporations had shown a return on assets of 0.58% and a return on receipts of 0.86% in 1989, Japanese controlled U.S. corporations reported -0.024% and -0.03% respectively for the same period (*See Appendix 11*).[53]

In examining the recent cases brought by the IRS against Japanese automobile manufacturers, Granfield and Weston (1990)

found that the U.S. price[54] for most models of Japanese automobiles was substantially higher than the Japanese price for the same model and that the price differential could not be explained by transportation costs, insurance, and duties.[55]

In its "*Report on the Application and Administration of Section 482*" issued in April 1992, the IRS presented graphs indicating that between 1984-85 and 1988-89 foreign-controlled corporations (FCC)[56] had experienced annual growth in assets between 14 and 28% and growth in receipts between 6 and 27%. During the same period U.S.-controlled corporations (USCC) experienced between 5 and 15% annual growth rates in assets and between 2 and 14% annual growth rates in receipts. However, in those same years, FCC's reported a return on assets of between -0.2 and +1.4% and net income as a percent of total receipts of between -0.3 and +1.4% while USCC's reported between 1.3 and 2.2% and between 1.6 and 3.7% on the same two measures. Commenting on this data, the IRS concluded that "[a]lthough this aggregate data does not prove widespread noncompliance by FCCs, it does suggest that some FCCs may be underreporting income" (pp. 2-6).

However, not all of the statistics support underreporting of income and underpayment of taxes. The GAO, in its report to Congress in August 1992, pointed out that for the companies included in its study, the effective U.S. corporate income tax rate increased and the dispersion of those rates around the

mean decreased between 1986 and 1989. Acknowledging that the maximum corporate statutory rate decreased from 46% in 1986 to 40% in 1987, and to 34% for 1987 and 1988, the GAO still found fewer companies with a low (10% or less) tax rate and more with a high (above the statutory) rate in 1989 than in 1986.[57]

In addition to the statistics that have been compiled on the operations of U.S. multinationals, academic research done in recent years raises questions about the results reported by companies operating in the international marketplace. In studying individual companies, James Wheeler (July 1988), for example, found significant differences in the taxable income per employee, the return on assets and resources, and the tax liability reported by U.S.-based parents and their foreign subsidiaries. For 1980 and 1982, two years in which Storage Technology reported such figures, the U.S. parent reported $175 and $2,764 of taxable income per employee whereas its Puerto Rican subsidiary reported $62,013 and $137,855 of taxable income per employee, or nearly 50 times more than parent employees. During the five year period from 1979 to 1983, Storage Technology reported returns on working assets ranging from a negative 1.5% to a positive 6.7% for the U.S.-based parent while the Puerto Rican subsidiary reported returns on working assets ranging from 262.5% to 565.5%[58] (*See Appendix 12*).

Coca Cola and Westinghouse, two other corporations

examined by Professor Wheeler, reported similar patterns of revenues, income before tax, and provision for tax liabilities for parent and subsidiary. During the years from 1984 to 1987, U.S. sales and operating revenues for the two corporations averaged 56% and 92%, respectively, while foreign operation sales and revenues averaged 44% and 8%. Income before tax for U.S. operations was 45% and 96%, respectively, and 55% and 4%, for the foreign operations. The fact that these companies reported, respectively, a 7% and 51% current income tax provision for U.S. operations and a 93% and 49% provision for foreign operations suggests the possibility that income shifting may be occurring and resulting in U.S. income tax avoidance (*See Appendices 13 and 14*).

The case study method utilized by Wheeler suggests that income shifting might be the possible reason for the differences in the results of the parents and subsidiaries. Other valid reasons may exist for these differences. For example, operating costs may indeed be different for domestic and foreign operations. Human and other resources may be more or less readily available in one geographic area than another. Political rules may make operating more or less difficult and/or expensive. There may be a lack of locally available management with the skills required to run a company efficiently and effectively. The cultures of the operations, including the basic work ethic, may differ enough to have a

significant effect upon the results of operations. As suggested by Grubert, Goodspeed, and Swenson (1991), a difference in the age of domestic and foreign operations also may have a significant effect; e.g., one operation may still be in the start-up phase while another is in the mature phase of its existence. The testimony, the court cases, and the case studies raise questions and suggest possible answers. However, those answers are, at best, only tentative ones; and, even if accepted, can only be applied to the companies studied. Because the companies were not randomly selected, results cannot be statistically interpreted to draw inferences about all MNEs.

Even though the international markets for United States' products and services continue to grow, the trade deficit also continues to grow at an unprecedented rate in spite of a weakened U.S. dollar and recent increases in U. S. exports. Concerns of American citizens and legislators are fueled by inflation, the downsizing of operations, the closing of plants, and the resultant loss of jobs. Worries are expressed over the increase in foreign investment in the United States, especially in the areas of real estate, manufacturing, and technology. The widely heralded innovations beginning in Europe in 1992 and recent dramatic global changes, particularly in the Communist countries, bring both the opportunity for new markets and the threat of new competitors.

Growing excitement and apprehension over these changes have fostered questions regarding circumstances which may be able to enhance or hamper the ability of the United States to continue to compete in both international and domestic marketplaces. In this context, tax policy is one of the factors that is currently under close scrutiny. Congress is questioning whether the major changes in U.S. tax policy made during the 1980s have unduly eased the way for investment in the U.S. by foreigners and permitted U.S. affiliates of foreign firms and domestic companies with foreign affiliates to unfairly export their income, thereby placing inequitable tax burdens on their domestic competitors. Some question whether the frequent changes in U.S. tax policy toward foreign income which seem to give more weight to tax revenue-raising potential than to the effects of such changes on relations with international trading partners are restricting the ability of American companies to enter into meaningful cooperative agreements with foreign companies and foreign governments.[59]

But the brouhaha over what constitutes proper allocation of income for tax purposes continues and seems unlikely to abate in the near future. Discussion by and complaints from companies, accountants, lawyers, economists, and state[60] and foreign governments continue regarding the difficulty in adhering to the current international tax laws and the equity

or inequity of those laws. Congressional and IRS concerns over lost revenues and the difficulty of administering and auditing returns with transfer pricing continue to be debated. Further research may help to shed light on the problem.

Chapter 3. Research Methodology and Data Sources

Financial Measures, Non-Financial Measures, and Groups

United States operations of foreign-owned enterprises, domestically-owned enterprises with foreign operations, and purely domestic corporations are all expected to prepare their financial statements in accordance with generally accepted accounting principles and to abide by the provisions of the Internal Revenue Code. Proper compliance with these provisions should prevent MNEs from avoiding U. S. taxes and should ensure that the financial statements correctly reflect the income of the related parties. If, however, MNEs are successfully circumventing the intent of Congress in passing tax laws and, consequently, are avoiding paying their "fair share" of United States tax as has been testified before the House Ways and Means Committee in both 1990 and 1992, there should be evidence of their actions in the results of their operations as reported to their shareholders.

This study examines whether or not differences exist within the chemical industry among the operating and tax results of operations of USMNEs, U.S. operations of foreign enterprises, and operations of purely domestic corporations. It also examines the income and ratios that would have been

reported if a formulary method based on sales and assets or on sales, assets, and number of employees had been used for apportioning unitary income for the enterprise.

In trying to examine these issues, this study compares seven financial ratios for the three groups of companies in the chemical industry and examines two additional financial ratios and one non-financial ratio for MNEs only. The financial ratios are as follows:

1. Cost-of-goods-sold ratio (cost of goods sold as a percent of net sales).

2. Operating-income ratio (operating income as a percent of net sales).

3. The net profit ratio[61] (net profit as a percent of net sales).

4. The effective income tax rate (current income tax as a percent of net profit).

5. The effective operating-income tax rate (current income tax as a percent of operating income)

6. The return on assets (net profit as a percent of average total assets).

7. The operating return on assets (operating income as a percent of average total assets).

8. The U.S. sales ratio for MNEs (U.S. sales as a percent of worldwide sales).

9. The U.S.-based assets ratio for MNEs (identifiable assets in the U.S. as defined by the SEC as a percent of worldwide identifiable assets).

The non-financial ratio for MNEs is the U.S. employment ratio (number of employees in the U.S. as a percent of

worldwide employees).

The three mutually exclusive groups of companies are as follows:

1. U.S. Multinational Enterprises (USMNE).
A USMNE is a company incorporated in the United States that directly or indirectly owns at least one foreign operation or which is associated with such an operation through a mutual U.S. multinational parent or grandparent, etc., provided the company is neither directly nor indirectly owned by a foreign enterprise.

2. U.S. Operations of Foreign Multinational Enterprises (USOFMNE).
This group includes companies incorporated in the United States that are owned directly or indirectly by foreign enterprises, provided that the respective foreign enterprise is neither directly nor indirectly owned by a U.S. enterprise.

3. Domestic Corporations (DC)
A DC is an enterprise incorporated in the United States that neither has a foreign operation nor is itself a unit of any multinational enterprise (domestic or foreign).

The following sources (**Directories)** were used to determine in which of the three groups a company belongs: Directory of Corporate Affiliations: Who Owns Whom (Dun & Bradstreet), The Directory of Foreign Manufacturers in the United States, The Directory of Foreign Firms Operating in the United States, The Directory of American Firms Operating in Foreign Countries, The Directory of Corporate Affiliations (National Registry Publishing Company), Moody's Industrial Manual, Moody's OTC Unlisted Manual, and Million Dollar Directory.

The test of whether or not a company is a USMNE is a two-pronged one. First, the U.S.-based enterprise must directly or indirectly own at least one foreign operation or be associated with such an operation through a mutual U.S. multinational parent, grandparent, etc. Secondly, the U.S.-based enterprise and its U.S. parent enterprise can neither directly nor indirectly be an operation of or be associated with a foreign entity.[62]

The test of whether or not a company is a USOFMNE is also a two-pronged one. First, the U.S. enterprise must be owned either directly or indirectly by a foreign enterprise. Second, the foreign parent enterprise may not in turn be owned either directly or indirectly by a U.S. enterprise.

Domestic corporations (DCs) constitute the last group. They are U.S.-based companies that have no direct or indirect interest in foreign operations[63] and that are not themselves, directly or indirectly, operations of multinationals. Thus, DCs are (1) unaffiliated U.S.-based companies or (2) U.S.-based companies belonging to a group of affiliated companies located entirely within the United States and owned by U.S. shareholders.

Once the companies selected for inclusion had been assigned to the appropriate groups, the financial ratios identified above were computed by using the balance sheet, income statement, statement of cash flows, income tax and

geographic segmental data required to be presented in financial statements by accounting principles generally accepted in the U.S.[64]

A 1991 article by Grubert, Goodspeed, and Swenson suggests that as much as 50% of the differences in profitability observed within MNEs may be due to non-tax factors such as start-up costs. Smaller companies and newer companies, particularly those with revaluations of assets following acquisition, they argue, face additional costs that prevent them from being as profitable or reporting as favorable financial ratios as their older and larger competitors.[65] This study statistically controls for differences among the companies within each of the groups through the use of covariates for the effects on the means of the size and age of the company which the Grubert, Goodspeed, and Swenson study suggest could confound the results.[66] Self-reported incorporation dates, Value Line Investment Survey (Value Line, Inc), and the **Directories** used to determine grouping for the companies were used to determine the age of the companies. The dollar values of average total assets[67] and net sales were used as proxies for size. This permitted a comparison of the financial measures among (1) the worldwide operations of USMNEs,[68] (2) the U.S. operations of foreign MNEs,[69] and (3) the operations of DCs taking into account the effects of size and age as defined above.

Confidentiality and privacy laws made access to the individual corporate income tax returns unavailable; therefore, financial information that was reported in annual reports and required SEC filings had to be used. Because the data for this study was limited to information either required to be filed with the SEC or information voluntarily presented by the company in its reports and filings, a separate statement detailing the U.S. operations of USMNEs and some foreign-owned corporations was not available in all cases.

Evidence that MNEs are transferring goods or allocating costs in some disproportionate manner might appear through an examination of the cost-of-goods-sold ratio (cost of goods sold/sales) where the information required for this calculation is provided. Although per unit costs are not generally contained in the data sources, the cost-of-goods-sold ratio provides some measure of whether the companies in the three groups are reporting significantly different costs for goods sold. Because the entities being studied were all in the same general industry, it was expected that differences among the cost-of-goods-sold ratios of operations in the United States would not be significant, regardless of whether the ratios are for the operations of USMNEs, USOFMNEs, or DCs. However, because USMNEs are not required to report the cost of goods sold for their U.S. operations separately, domestic cost-of-goods-sold ratios for DCs and USOFMNEs will be

compared to each other and to the worldwide cost-of-goods sold ratio reported by USMNEs.

Manipulation of the cost of goods sold to affiliates located in different countries is not the only factor that could cause financial measures to vary from one geographic area of operations to another. Factors other than transfer-pricing and cost-allocation policies among related enterprises may also create a difference in the ratios. An attempt was made to ameliorate this problem through the examination of the essentially oligopolistic chemical industry (Plasschaert, 1979). Because such companies operate under similar market conditions, the use of one industry should make the operations of the three groups more comparable.

If corporations are formed and operate with a profit motivation, then, from a business point of view, it makes little sense to invest time and assets in a subsidiary or affiliate that is unprofitable over the long term. If MNEs are structuring their activities to avoid United States income tax, the operating-income ratio (operating income/sales), the net-profit ratio (net profit/sales), the return on assets (net profit/average total assets), and operating return on assets (operating income/average total assets) may give some indication of this tendency and also may give some measure of how large the avoidance may be. Additionally, if MNEs, both those with foreign and those with United States parents, are

successfully avoiding the payment of United States income tax, a comparison of the percentage of net profit and operating income paid each year for United States income tax by these international corporations with the percentage paid by United States domestic corporations may reveal these differences.

Is there a better way of ensuring that MNEs pay a fair share of U.S. tax? One method that has been suggested is formulary apportionment. Apportionment methods proposed have generally focused either on sales and assets (property) or sales, assets, and payroll. The Uniform Division of Income for Tax Purposes Act (UDITPA) used for apportionment of interstate income defines property as the average of the beginning and end-of-the-year totals for inventory and gross plant assets plus eight times net property rent expense. The SEC does not require such detailed information in the note on geographic segments; consequently, not all of these data are available. However, variations in the components making up this factor have been used before for research purposes (Schmidt, 1986). Similarly, in this study identifiable assets in the U.S. and identifiable assets abroad (as defined by the SEC) were used as surrogates to determine the proportion of total identifiable assets that constituted U.S.-based assets. Total identifiable assets may differ from total assets as reported on the balance sheet because, under the SEC definition, assets are frequently identified with more than one geographic

location, and intercompany eliminations are used to arrive at the total for assets on the balance sheet. For this study, the proportion of U.S.-based assets is the ratio of identifiable U.S. assets to the sum of identifiable assets for all locations before eliminations.

Hypotheses

This study proposes to use the measures cited above to test hypotheses dealing with the cost-of-goods-sold ratio (**Hypothesis 1**), the operating-income ratio (**Hypotheses 2a and 2b**), the net-profit ratio (**Hypothesis 3**), the percentage of net profit paid as taxes (**Hypothesis 4**), the percentage of operating income paid as taxes (**Hypotheses 5a and 5b**), the return on average total assets (**Hypothesis 6**), the operating income return on assets (**Hypotheses 7a and 7b**), and two formulary apportionment methods of allocating worldwide income (**Hypotheses 8 and 9**). Specifically, this study tests the following hypotheses:

Hypothesis Related to Cost-of-Goods-Sold Ratio

> **Hypothesis 1.** There is no significant difference in the average cost-of-goods-sold ratio (cost of goods sold/sales) among DCs, the worldwide operations of USMNEs, and the U.S. operations of FMNEs after adjusting for the covariate measures of size and age.

This hypothesis can be expressed symbolically as follows:

$\mathbf{H_1}$: $CGSR_{DC} = CGSR_{USMNE\text{-}WW} = CGSR_{USOFMNE}$

where

$CGSR_{DC}$ = the cost-of-goods-sold reported by domestic corporations divided by their sales (adjusted for the covariate measures of size and age);

$CGSR_{USMNE\text{-}WW}$ = the cost-of-goods-sold reported for the worldwide operations of U.S. multinational enterprises divided by their worldwide sales (adjusted for the covariate measures of size and age)[70]; and,

$CGSR_{USOFMNE}$ = the cost-of-goods-sold reported for the U.S. operations of foreign multinational enterprises divided by their U.S. sales (adjusted for the covariate measures of size and age).[71]

Hypotheses Related to the Operating-Income Ratio

> **Hypothesis 2-A.** There is no significant difference in the average operating-income ratio (operating income/sales) among DCs, the worldwide operations of USMNEs, and the U.S. operations of FMNEs after adjusting for the covariate measures of size and age.
>
> **Hypothesis 2-B.** There is no significant difference in the average operating-income ratio (operating income/sales) among DCs, and the U.S. operations of USMNEs and FMNEs after adjusting for the covariate measures of size and age.

These hypotheses can be expressed symbolically as follows:

$\mathbf{H_{2\text{-}A}}$: $OIR_{DC} = OIR_{USMNE\text{-}WW} = OIR_{USOFMNE}$

$\mathbf{H_{2\text{-}B}}$: $OIR_{DC} = OIR_{USMNE\text{-}US} = OIR_{USOFMNE}$

where

OIR_{DC} = the operating income reported by domestic corporations divided by their sales (after adjusting for the covariate measures of size and age);

$OIR_{USMNE\text{-}WW}$ = the operating income reported for the worldwide operations of U.S. multinational enterprises divided by their worldwide sales (after adjusting for the covariate measures of size and age);

$OIR_{USMNE\text{-}US}$ = the operating income reported for the domestic operations of U.S. multinational enterprises divided by their domestic sales (after adjusting for the covariate measures of size and age); and,

$OIR_{USOFMNE}$ = the operating income reported for the U.S. operations of foreign multinational enterprises divided by their U.S. sales (after adjusting for the covariate measures of size and age).

Hypothesis Related to Net-Profit Ratio

> **Hypothesis 3**. There is no significant difference in the average net-profit ratio (net profit/sales) among DCs, the worldwide operations of USMNEs, and the U.S. operations of FMNEs after adjusting for the covariate measures of size and age.

This hypothesis can be expressed symbolically as follows:

$\mathbf{H_3}$: $NPR_{DC} = NPR_{USMNE\text{-}WW} = NPR_{USOFMNE}$

where

NPR_{DC} = the net profit reported by domestic corporations divided by their sales (after adjusting for the covariate measures of size and age);

$NPR_{USMNE\text{-}WW}$ = the net profit reported for the worldwide operations of U.S. multinational enterprises divided by their worldwide sales (after adjusting for the covariate measures of size and age); and,

$NPR_{USOFMNE}$ = the net profit reported for the U.S. operations of foreign multinational enterprises divided by their sales (after adjusting for the covariate measures of size and age).

Hypothesis Related to the Effective Income Tax Rate

> **Hypothesis 4**. There is no significant difference in the average effective income tax rate (current worldwide income tax expense/net profit) among DCs, USMNEs, and USOFMNEs after adjusting for the covariate measures of size and age.[72]

This hypothesis can be expressed symbolically as follows:

$\mathbf{H_4}$: $EITR_{DC} = EITR_{USMNE\text{-}WW} = EITR_{USOFMNE}$

where

$EITR_{DC}$ = the current income tax expense by domestic corporations divided by their net profit (after adjusting for

the covariate measures of size and age);

$EITR_{USMNE\text{-}WW}$ = the current income tax expense reported for the worldwide operations of U.S. multinational enterprises divided by their worldwide net profit (after adjusting for the covariate measures of size and age); and,

$EITR_{USOFMNE}$ = the current income tax expense reported for the U.S. operations of foreign multinational enterprises divided by their U.S. net profit (after adjusting for the covariate measures of size and age).

Hypotheses Related to the Effective Operating-Income Tax Rate

> **Hypothesis 5a.** There is no significant difference in the average effective operating-income tax rate (current worldwide income tax expense/worldwide operating income) among DCs, USMNEs, and USOFMNEs after adjusting for the covariate measures of size and age.
>
> **Hypothesis 5b.** There is no significant difference in the average effective operating-income tax rate (current U.S. income tax expense/U.S. operating income) among DCs, USMNEs, and USOFMNEs after adjusting for the covariate measures of size and age.

These hypotheses can be expressed symbolically as follows:

$\mathbf{H_{5a}}$: $EOITR_{DC} = EOITR_{USMNE\text{-}WW} = EOITR_{USOFMNE}$

$\mathbf{H_{5b}}$: $EOITR_{DC} = EOITR_{USMNE\text{-}US} = EOITR_{USOFMNE}$

where

$EOITR_{DC}$ = the current income tax expense reported by domestic corporations divided by their operating income (after

adjusting for the covariate measures of size and age);

$EOITR_{USMNE\text{-}WW}$ = the current income tax expense reported for the worldwide operations of U.S. multinational enterprises divided by their worldwide operating income (after adjusting for the covariate measures of size and age);

$EOITR_{USMNE\text{-}US}$ = the current income tax expense reported for the domestic operations of U.S. multinational enterprises divided by their U.S. operating income (after adjusting for the covariate measures of size and age);

$EOITR_{USOFMNE}$ = the current U.S. income tax expense reported for the U.S. operations of foreign multinational enterprises divided by their U.S. operating income (after adjusting for the covariate measures of size and age).

Hypothesis Related to Return on Average Total Assets

> **Hypothesis 6.** There is no significant difference in the average return on assets (net profit/average total assets) among DCs, the worldwide operations of USMNEs, and the U.S. operations of FMNEs after adjusting for the covariate measures of size and age.

Symbolically, this hypothesis can be expressed as follows:

$$\mathbf{H_6}: RAA_{DC} = RAA_{USMNE\text{-}WW} = RAA_{USOFMNE}$$

where

RAA_{DC} = the net profit reported by domestic corporations divided by their average total assets (ATA; the average of

total assets at the beginning and the end of the year), (after adjusting for the covariate measures of size and age);

$RAA_{USMNE-WW}$ = the net profit reported for the worldwide operations of U.S. multinational enterprises divided by their worldwide ATA (after adjusting for the covariate measures of size and age); and,

$RAA_{USOFMNE}$ = the net profit reported for the U.S. operations of foreign multinational enterprises divided by their U.S. ATA (after adjusting for the covariate measures of size and age).

Hypotheses Related to Operating Return on Average Total Assets

Hypothesis 7a. There is no significant difference in the average operating return on assets (operating income/average total assets) among DCs, the worldwide operations of USMNEs, and the U.S. operations of FMNEs after adjusting for the covariate measures of size and age.

Hypothesis 7b. There is no significant difference in the average operating return on assets (operating income/average identifiable assets) among DCs, and the U.S. operations of USMNEs and FMNEs after adjusting for the covariate measures of size and age.[73]

Symbolically, these hypotheses can be expressed as follows:

H_{7a}: $ORAA_{DC} = ORAA_{USMNE-WW} = ORAA_{USOFMNE-WW}$

H_{7b}: $ORAA_{DC} = ORAA_{USMNE-US} = ORAA_{USOFMNE-US}$

where

$ORAA_{DC}$ = the operating income reported by domestic

corporations divided by their average total assets (after adjusting for the covariate measures of size and age)[74];

$ORAA_{USMNE-WW}$ = the operating income reported for the worldwide operations of U.S. multinational enterprises divided by their worldwide average total assets (after adjusting for the covariate measures of size and age);

$ORAA_{USMNE-US}$ = the operating income reported for the domestic operations of U.S. multinational enterprises divided by their average U.S. identifiable assets (after adjusting for the covariate measures of size and age);

$ORAA_{USOFMNE-WW}$ = the operating income reported for the worldwide operations of foreign multinational enterprises divided by their worldwide average total assets (after adjusting for the covariate measures of size and age); and,

$ORAA_{USOFMNE-US}$ = the operating income reported for the U.S. operations of foreign multinational enterprises divided by their U.S. average identifiable assets (after adjusting for the covariate measures of size and age)[75].

Hypotheses Related to Formulary Apportionment Method

> **Hypothesis 8.** There is no significant difference in the mean operating income reported for the U.S. operations of MNEs and the mean amount that would have been apportioned to the United States under a two-factor formulary method applied to worldwide operating income *(See Appendix 10)*.

This hypothesis can be expressed as follows:

$\mathbf{H_8}$: $OI_{MNE\text{-}US} = OI_{2F}$

where

$OI_{MNE\text{-}US}$ = the operating income reported for the U.S. operations of both USMNEs and foreign multinationals;

$OI_{2F} = ((ASSETS_{US}/ASSETS_{WW} + SALES_{US}/SALES_{WW})/2) \times OI_{WW}$;

$ASSETS_{US}$ = Identifiable assets for U.S. operations as reported in the segmental note to the financial statements;

$ASSETS_{WW}$ = Sum of identifiable assets for U.S. and foreign operations (before eliminations) as reported in the segmental note to the financial statements;

$SALES_{US}$ = Net sales for U.S. operations as reported in the segmental note to the financial statements;

$SALES_{WW}$ = Sum of net sales for U.S. and foreign operations (before eliminations) as reported in the segmental note to the financial statements; and,

OI_{WW} = Sum of operating income for U.S. and foreign operations as reported in the income statement and in the segmental note to the financial statements.

Hypothesis 9. There is no significant difference in the mean operating income for the U.S. operations of MNEs and the mean amount that would have been apportioned to the United States under a three-factor formulary method applied to worldwide operating income *(See Appendix 10)*.

In this study, the number of employees rather than the

actual wages paid is used for two reasons: First, the use of wages could result in overallocating income to high-wage areas and underallocating income to low-wage areas. (The use of number of employees would eliminate this difficulty.) Second, if employment data by geographic area is reported at all, it typically is restricted to number of employees; total wages by geographic areas are reported extremely seldom.

Symbolically, this hypothesis can be expressed as follows:

$\mathbf{H_9}$: $OI_{MNE\text{-}US} = OI_{3F}$

where

$OI_{MNE\text{-}US}$ = the operating income reported for the U.S. operations of USMNEs and U.S. operations of foreign multinationals;

$$OI_{3F} = ((ASSETS_{US}/ASSETS_{WW} + SALES_{US}/SALES_{WW} + EMPLOYEES_{US}/EMPLOYEES_{WW})/3) \times OI_{WW}$$

and

$ASSETS_{US}$ = Identifiable assets for U.S. operations as reported in the segmental note to the financial statements;

$ASSETS_{WW}$ = Identifiable assets reported for U.S. and foreign operations (before eliminations) as reported in the segmental note to the financial statements;

$SALES_{US}$ = Net sales for U.S. operations as reported in the segmental note to the financial statements;

$SALES_{WW}$ = Net sales for U.S. and foreign operations (before eliminations) as reported in the segmental note to the

financial statements;

$EMPLOYEES_{US}$ = Number of employees for U.S. operations as reported in the financial statements;

$EMPLOYEES_{WW}$ = Number of employees for worldwide operations as reported in the financial statements; and,

OI_{WW} = Sum of operating incomes for U.S. and foreign operations as reported in the income statement and in the segmental note to the financial statements.

For each of the first seven null hypotheses, the financial data collected were converted into percentages for each company in each group. A general linear model (**GLM**) with the subcommand for covariates (Minitab)[76] was used to determine whether the means of the groups were statistically significantly different using age, net sales, and average total assets as covariate measures. For the last two null hypotheses, the reported operating income and the operating income as calculated under the appropriate formulary method were used as data. Although only a limited number of companies reported all the necessary information to compute the formulary-apportioned operating incomes, for all that did, two measures existed for each company - a reported and a calculated operating income for U.S. operations. In order to determine whether the calculated and reported amounts were

significantly different, these data then were analyzed using a paired t-test.

Industry, Company, and Data Selection

This study examined companies within the chemical industry *(SIC Codes 2800-2891)*. A single industry was chosen in order to focus on the similarities and differences among companies within an oligopolistic population that contained three types of companies -- foreign-owned U.S. operations, U.S. multinationals, and domestic companies. A manufacturing industry was selected for study because of the potential for transfers of both goods and services. An attempt was made to select an industry that had worldwide significance because of the size and growth of its revenues and asset base but that had not been examined in depth by the IRS, the Congress, or other researchers. As discussed in Chapter I, the chemical industry was chosen based upon these criteria.

To ensure that there was a sufficiently large number of companies in each of the three groups -- USMNEs, USOFMNEs, and DCs -- using the Directory of Companies Required to File Annual Reports with the Securities and Exchange Commission Under the Securities Exchange Act of 1934, September 30, 1991 (**SEC Directory**), all companies classified as chemical companies (SIC numbers 2800-2891) were used. *(See Appendix 32*

for a list of these companies.)

This group of more than 400 chemical companies would be expected to include companies that are strictly domestic (DC), companies that are directly or indirectly subsidiaries of foreign companies (USOFMNE), and U.S. multinationals with overseas subsidiaries (USMNE). The first step after identifying the chemical companies was to assign the companies to the proper group. The **Directories** referred to earlier were used for this assignment process.

Because access to the tax returns of corporate taxpayers was not possible, this study utilized the following sources of data:

-Annual reports issued by the companies.

-10-Ks filed by domestic corporations with the Securities and Exchange Commission as contained in Q-FILE or SEC-FILE (*Files*).

Each company was contacted by mail (twice in cases where the company did not respond to the first request) with a request for a copy of its annual report. For those companies that did not respond to the requests and for which an annual report could not be obtained from another source (such as a brokerage house), the information in 10-Ks as recorded in the *Files* data bases was used. The information provided as the SEC filing in this database in most cases approximated (and usually duplicated) the information provided in the company's annual reports. Corporations neither supplying annual reports

nor listed in the *Files* were dropped from the study group. Corporations whose reporting was incomplete because it did not contain all of the required information (i.e., balance sheet, income statement, and segmental information) were dropped from those analyses which required that information.[77]

The necessary financial and non-financial figures were gathered from annual reports supplied by the companies or from the **Q-FILE** or **SEC-FILE** so that the needed ratios could be calculated. Descriptive statistics were computed for the different groups of companies for each of the financial measures. The GLM using covariates was used with the means of the three groups to determine whether statistically significant differences existed.

For Hypotheses 8 and 9, projected operating incomes for U.S. operations were calculated using both the two- and three-factor formulary apportionment method. A comparison of this projected operating income and the operating income for the U.S. as reported by the company was then made using a paired t-test.

The study was designed to look for the presence of significant differences that may exist among groups of companies in one industry. Because the primary purpose of the study was to look for the existence of differences rather than to explain differences that do exist, and because of the possible compounding influence of potential covariate

measures, the GLM with the subcommand for covariates and the paired t-test were the chosen statistical methods. Additional regression and analyses of variance of the differences among the means of the groups were performed to explore differences shown to exist between and among the groups.

Group Description

The Directory of Companies Required to File Annual Reports with the Securities and Exchange Commission Under the Securities Exchange Act of 1934, September 30, 1989 and 1991 (**Directory**) listed 446 chemical companies with the SIC codes of 2800-2891.[78] Of these companies, 336 companies (75.3%) either supplied annual reports from which data could be taken or were contained in microfiche form in the **Files**. Twelve companies (2.7%) were affiliates of a U.S. parent company included in the study; because the results of these affiliates would be included in the consolidated results of their parents, these twelve companies were eliminated from the study in order to avoid duplication. Seventy-nine companies (17.7%) neither supplied requested annual reports nor were contained in the **Files**; fifteen companies (3.4%) were listed in the **Files** but their reports for 1991 were not contained therein; two companies (0.4%), although contained in the **Files,** did not report financial results for 1991.[79] One company (0.2%) was deemed to be misclassified based upon its reported operations

and thus was omitted from the study. One company (0.2%) that was liquidating in 1991 was also omitted from the study (*See Appendix 15*).

The 336 companies included in this study reported total net sales of $352.0 billion for the year 1991. The sum of the average total assets used by the companies during the fiscal year ending during 1991 was $362.4 billion. They reported a combined operating income of $53.0 billion; income before income tax of $41.6 billion; financial statement income tax expense of $13.0 billion; and net income of $24.9 billion.

Of the 336 companies, 286 (85.1%) reported sales[80]; 191 (56.8%) reported positive operating income; 184 (54.8%) reported positive income before income tax; 190 (56.5%) reported income tax expense (debit balance) on their financial statements; and 181 (53.9%) reported positive net profits for the year 1991 *(See Appendices 16-20)*.

Among the companies, 131 (39%) were classified as USMNEs, 32 (9.5%) as USOFMNEs,[81] and the remaining 173 (51.5%) were classified as domestic companies.

Of the 323 companies for which an age could be determined, the company ages ranged from one year to 225 years with an average age of 31.71 years (*See Appendix 21*). Multinationals had a higher average age than domestics with an average age of 52.99 years for USMNEs; 28.86 years for USOFMNEs; 48.66 years for all multinationals (treating USMNEs

and USOFMNEs as a single group); and 15.87 years for domestic corporations.

As indicated above, while 50 (14.9%) of the companies reported zero sales; 96.9% of USMNEs, 81.2% of USOFMNEs; and 76.9% of domestics reported having sales in 1991 (*See Appendix 16*). The mean net sales for all 336 companies was $1.05 billion (*See Appendix 22*); the largest sales reported amounted to $38.7 billion. Multinationals, whether viewed as a single group or as two separate groups, reported higher net sales than domestic corporations. USMNEs reported mean net sales of $2.08 billion; USOFMNEs reported $2.27 billion;[82] multinationals as a group reported a mean net sales figure of $2.11 billion; and domestic corporations reported $42.9 million.

Average total assets for the fiscal year ending 1991 were available for only 330 companies. Because the 1990 financial statements were not available for the remaining six companies, their 1991 total asset ending balances were used as surrogates for their 1991 average total assets. The mean of average total assets of all companies was $1.09 billion; the minimum reported was $385; the maximum was $37.3 billion. As with mean age and mean net sales, multinationals reported higher mean average total assets than domestics. For USMNEs, mean average total assets amounted to $2.09 billion; USOFMNEs reported $2.48 billion; multinationals as a whole reported

$2.17 billion; and domestics reported $53.5 million (*See Appendix 22*).

A larger percentage of multinationals than DCs reported positive income before income tax; namely, 80.2% of USMNEs and 62.5% of USOFMNEs versus 34.1% of all domestics (*See Appendix 18*). The multinationals also reported higher means of income before income taxes than domestic companies: $242.8 million for USMNEs; $299.6 million for USOFMNEs; $240.2 million for MNEs and a negative $1.0 million for domestics (*See Appendix 22*).

An income tax expense (debit balance) was reported on the financial statement of 78.6% of USMNEs, 65.6% of USOFMNEs, and 38.1% of DCs *(See Appendix 19)*. Treated as a single group, the companies reported a mean income tax expense of $39.0 million on their income statements.[83] Once again, the means for multinationals were higher than for domestics; USMNEs reported a mean of $80.3 million; USOFMNEs reported $75.0 million; multinationals reported $79.2 million; and domestics reported $925.7 thousand (*See Appendix 22*).

The mean net profit for the 336 companies was $74.0 million. Net profit figures ranged from a loss of $630 million to a positive income of $2.12 billion. As with age, sales, financial statement income tax, and assets, multinationals, whether treated as two groups or as a single group, reported higher means for net profit than their

domestic counterparts. USMNEs reported a mean net income of $155.9 million; USOFMNEs reported $148.5 million; multinationals as a group reported $154.0 million; and domestics reported a mean loss of $1.7 million (*See Appendix 22*).

The current income tax figures were taken from the footnote to the financial statements regarding income taxes. Fifty-one companies did not separate current U.S. federal, state, and local income taxes. Some of these companies, however, did report current domestic taxes comprised of combined U.S. federal, state, and local income taxes. Of the 299 companies reporting current domestic taxes (or reporting current local, state, and federal income taxes which could be combined for a current domestic tax figure), multinationals again reported higher mean figures than did domestics. The mean current domestic income tax for all companies reporting a figure was $22.3 million; $52.9 for USMNEs; $8.4 million for USOFMNEs; $48.0 million for multinationals; and $564.0 thousand for domestics (*See Appendix 22*).

Because many of the companies were operating on a global scale, there were current foreign income taxes for many companies. Current worldwide income tax -- consisting of foreign, U.S. federal, and U.S. state and local income taxes -- for the 299 companies reporting these figures[84] had a mean of $37.7 million. Multinationals reported higher means for

current income taxes than did domestic companies: USMNEs reported $90.3 million, USOFMNEs $11.4 million; multinationals as a group $78.2 million, versus domestics which reported a mean of only $570.4 thousand (*See Appendix 22*).

Development Stage Enterprises and Foreign Parents

Included among the companies in the study were 36 companies that were self-reported to be development stage enterprises (DSE). Five of these 36 were classified as USMNEs, 2 were classified as USOFMNEs, and the remaining 29 were classified as DCs *(See Appendix 23)*. A development stage enterprise is described in *FAS-7, "Accounting and Reporting by Development Stage Companies,"* as an enterprise that has either not begun principal operations or whose principal operations have not begun to generate significant revenues. The point at which an enterprise leaves the development stage is largely a matter of judgment although *FAS-7* does suggest that during the development stage the enterprise is primarily engaged in activities such as financial planning, raising capital, doing research and development, training employees, or developing markets rather than the activities that will be principal to the operation at a later time. DSEs file the same basic financial statements as other companies[85]; however, with the amount of attention these companies give to activities other than those that will later be principal revenue-generating

operations, the results of these companies could cause group results to be misleading.

Also included among the 336 companies in the study were nine foreign parent companies (FP). These companies were required to file with the SEC and were, therefore, included in the SEC listing. Unlike the operations of the remaining 23 companies classified as USOFMNEs which represented operations in the U.S. of foreign-owned companies, the balance sheet and income statement figures reported for these nine companies may cause group results to be misleading for purposes of this study because the bulk of their operations took place in political jurisdictions other than the U.S.

Because development stage enterprises and foreign parents could potentially confound the group means, descriptive statistics and tests of hypotheses were run as follows:

- all companies (including DSEs and FPs),
- non-development stage enterprises (including FPs),
- non-foreign parent companies (including DSEs), and
- non-foreign parent and non-development stage companies.

As would be expected, when the results of development stage companies were removed, the means for age, net sales, average total assets, income before income tax, financial statement tax expense, net profit, current domestic income tax, and current worldwide income tax increased for the entire group of companies and for each of the groups when the

companies were classified into three groups (USMNE, USOFMNE and DC) and two groups (MNE and DC), respectively.

The means for age, net sales, average total assets, income before income tax, financial statement tax expense, and net profit decreased for all companies, for USOFMNEs, and for MNEs when the data for the nine foreign parent companies were removed. On the other hand, the mean current domestic income tax and the mean current worldwide income tax increased for all companies and for USOFMNEs *(See Appendix 22)*.

When both DSEs and FPs were removed, the resultant means for USMNEs, USOFMNEs, and DCs changed in a manner consistent with the results when DSEs and FPs were removed separately. With both removed, the change in the means of the measures for all companies and MNEs depended upon whether DSEs or FPs had exerted a larger influence. The means for age, current domestic income tax, and current worldwide income tax increased; means for net sales, average total assets, financial statement income tax, and net profit decreased; and, income before income tax increased for all companies but decreased for MNEs.

As *Appendix 22* shows, on all measures there were significant differences at the .01 level among the means of the three groups. Additionally, on all measures, there were significant differences at the .01 level between domestic companies and a single multinational group (MNE) composed of

USMNEs and USOFMNEs. These means, however, do not take into account the age or size of the company -- variables which, as will be seen in Chapter 4, can have a profound effect.

Chapter 4. Results and Conclusions

This chapter discusses the results of the testing of each hypothesis and the conclusions reached based on those results. *The results of the testing of the hypotheses are summarized in Appendix 25.*

Hypothesis One

The first hypothesis states that for the COGS ratio there are no significant differences in the means of the three groups. Whereas cost of goods sold is influenced directly by sales volume, the cost-of-goods-sold ratio (cost of goods sold/sales) is not. For all 279 companies for which a ratio could be calculated, the ratio was 0.6099 (*Appendix 24*). As shown in *Appendix 25*, using the GLM with age, net sales, and average total assets as covariates, no statistically significant difference was found among the means for all companies when classified into three groups -- USMNEs, USOFMNEs, and DCs ($F=2.28$; $p>.05$). Nor were significant differences found when foreign parent companies were removed ($F=2.21$; $p>.05$). However, when development stage companies were removed and when both foreign parent and developmental stage companies were removed, a statistically significant

difference was found among the means of the remaining companies (F= 3.44 and 3.35 respectively; $p<.05$ for both). Therefore, while the null hypothesis could not be rejected in two cases (all companies and without FPs), the data supported the rejection of the hypothesis when DSEs and when both DSEs and FPs were removed.

These mixed results may be in part explained by a single USOFMNE with a reported zero COGS. When this outlier was removed from the group, there were no statistically significant differences among the means of the three groups for any level of inclusion.

Given the mixed results of the initial test of means, the companies were reclassified into two groups, MNEs and DCs, taking into account the effects of the covariates. With only two groups, the means were found to be significantly different at the .05 level in all four levels of inclusion -- all companies, DSEs removed, FPs removed, and DSEs and FPs removed (*See Appendix 25*).

Although the mean (for all companies unadjusted for the covariate measures) was smallest for USOFMNEs and largest for domestic companies (0.5513 for USMNEs; 0.4846 for USOFMNEs; and 0.6730 for domestics), one-way analysis of variance or ANOVA on the means for the cost-of-goods-sold ratio (COGS ratio) for the three groups produced no significant difference in any of the four levels of inclusion (all companies, DSEs

removed, FPs removed, DSEs and FPs removed).[86] However, as shown in *Appendix 24*, when the companies were classified into two groups a statistically significant difference was found in all cases indicating a lower COGS ratio for multinationals than for domestics (means from .5403 to .5494 for MNEs and means of .6110 and .6730 for DCs depending upon whether DSEs, FPs, or both were included).

One possible explanation for the similarity of the means on this measure for the three groups may be the similarity of the companies themselves. Under *FAS 14, "Financial Reporting for Segments of a Business Enterprise"*, companies are required to report geographic data only if those operations account for 10% or more of the total operations.[87] Likewise, the **Directories** used to classify the companies as multinational or domestic generally used a 10% ownership by a foreign company or 10% ownership of a foreign subsidiary or affiliate as a dividing line. Therefore, a company could have 9% ownership of operations overseas or be subject to 9% foreign ownership and still be reported as a domestic company. At the same time, another company with 11% ownership of operations overseas or with 11% foreign ownership would be classified as a multinational. With only two percentage points of difference in their ownership structure, these companies would be assigned to different groups.[88]

In an attempt to overcome this classification difficulty

for USMNEs, the operations of domestic companies were compared to those USMNEs that were "heavily" involved in multinational operations. In separate ANOVA and regression calculations with the covariates for age and size, only USMNEs with 50% or more of their sales abroad and 50% or more of their identifiable assets abroad were kept as USMNEs; U.S. multinationals for which either no percentages of foreign sales and assets could be ascertained or for which at least one percentage was less than 50% were eliminated.[89] The mean COGS ratios for the resulting groups were compared. In all cases, the differences among the means were not statistically significant at the .05 level (*Appendix 24* for unadjusted means and *Appendix 25* for hypothesis testing adjusting for covariates).

Clearly, the sales volume of a company has a significant influence on the cost of goods sold that the company will report. With a measure that is generally considered a variable cost this would be expected. Additionally, because the chemical industry is usually viewed as an oligopoly, it would be reasonable to expect that the COGS ratio would be similar for all groups. If transfer pricing were used as a method of affecting income in different political jurisdictions for the purpose of affecting income taxes paid, then one would expect the COGS ratio of MNEs and domestics to be different. Specifically, if MNEs were expected to use

transfer prices to lower U.S. income taxes payable, one would expect their COGS ratio to be higher than that for DCs. Thus, the lower COGS ratio reported by multinationals as compared to domestics does not support the allegations of Congress and the IRS that multinationals manipulate transfer prices to avoid U.S. income taxes. Since foreign-owned operations, as a group, displayed the *smallest* COGS ratio, the allegation that FMNEs do not pay their fair share of U.S. taxes may be especially misplaced.[90] Rather, the direction of the differences seems to support other advantages of 'going global' that have been advanced such as: (1) economies of scale and (2) the ability of MNEs to select location based on availability and cost of factors of production.

Hypotheses Two (A and B)

The second hypothesis, consisting of two sub-hypotheses, states that there are no significant differences in the average operating-income ratios (OIRs; operating income/sales) of the groups. Hypothesis Two-A compares operating-income ratios among the worldwide operations of USMNEs and the U.S. operations of FMNEs and DCs. Hypothesis 2-B compares the operating-income ratios of the three groups using the information contained in the segmental note to determine U.S. operating income and U.S. sales for U.S. multinational concerns.

For Hypothesis Two-A, using GLM and adjusting for the covariate measures, statistically significant differences at the .01 level were found among the mean OI ratios for worldwide operations of the three groups of companies in all four levels of inclusion (all companies, without DSEs, without FPs, and without either DSEs or FPs). Likewise, when USMNEs with less than 50% of their sales and/or less than 50% of their assets abroad were eliminated from consideration, the differences remained statistically significant ($p<.05$ with exclusion of DSE; $P<.01$ for all others). Therefore, the null hypothesis was rejected. However, when the companies were reclassified into two rather than three groups, no significant difference between the means of MNEs and DCs was found *(See Appendix 25)*.

The OIR examines operating income in relation to net sales. Even though, for all companies in the study, the mean worldwide operating income in terms of dollars was positive ($158 million), the mean operating-income ratio was -32.2[91]. Consistent with the results of the GLM, as shown in *Appendix 26*, ANOVA (all companies, unadjusted for covariate measures) found a significant difference among the mean operating-income ratios at all levels of inclusion when they were classified into USMNEs, USOFMNEs, and domestics ($p<.01$), but not when they were classified into MNEs and domestics ($p>.05$). The mean OI ratio (all companies) was negative for all groups: -

0.8 for USMNEs; -322.2 for USOFMNEs; -55.4 for MNEs; and -5.2 for domestics. The large negative operating-income ratio exhibited by the USOFMNEs in three groups is overshadowed by the smaller negative ratio of USMNEs when the two are combined into the MNE classification.[92] This helps to explain the presence of significant differences among three groups and its absence between two groups.

When DSEs, FP, or both were removed from the groups, the same pattern of differences persisted among the mean operating-income ratios (*See Appendix 26*). The differences were significant when companies were classified into three groups and insignificant when companies were classified into two groups.

While the OI ratio looks at the operating income in relation to sales, operating income looks at dollar amounts reported in the financial statements. As a group, 82.4% of USMNEs, 62.5% of USOFMNEs, and 36.4% of all domestics reporting positive operating incomes (*See Appendix 17*). USMNEs reported the largest mean operating income of $340 million for all companies; USOFMNEs reported $248 million; MNEs reported $322 million; and, domestics reported $2.1 million. Although the mean operating incomes for the groups changed with the removal of development stage enterprises, foreign parent companies, and both FPs and DSEs, ANOVA (without adjusting for covariate measures) found a

statistically significant difference among the means of USMNEs, USOFMNEs, and domestics ($p<.01$) for all levels of inclusion and found a significant difference ($p<.01$) between the means of all MNEs and domestic companies, except when both DSEs and FPs were excluded ($p>.05$). (*See Appendix 22*).

If the ideas of economy of scale and the ability of MNEs to operate, acquire resources, and produce close to final markets at lower costs are accepted, it is not surprising that the dollar amount of operating income is larger (as shown by ANOVA) for multinationals with their larger sales volume. However, the same type of analysis for the OI ratio showed significant differences among the means of the groups with USOFMNEs having a larger negative OI ratio than the negative ratios of either U.S. multinationals or domestics, raising questions about the demonstrated ability of this group to benefit from the suggested global-operation advantages.

With domestics reporting a larger mean COGS ratio than multinationals (two-group comparison),[93] the mean gross margin ratio of domestics would be smaller than that of their multinational counterparts. If operating expenses (other than cost of goods sold) were similar for the groups, it would be expected that domestics would have a similar or lower OI ratio. However, operations of multinationals reported a more negative mean OI ratio than domestic companies with operations of foreign-controlled companies reporting the largest negative

mean OI ratio. In examining the Berry ratio (gross margin/operating expenses) and the operating expenses as a percent of net sales for all companies, significant differences ($p<.01$) were found for operating expenses as a percent of net sales among the means of the three groups, but no significant differences ($p>.05$) were found among the mean Berry ratios of the three groups or between the means of MNEs and DCs. For the Berry ratio, USOFMNEs reported the highest ratio and DCs the lowest (1.969 for USMNEs, 1.205 for USOFMNEs, 1.826 for MNEs, and 0.960 for DCs). On the measure of operating expenses as a percent of net sales, USOFMNEs reported the highest ratio and USMNEs the lowest (1.3 for USMNEs, 335.6 for USOFMNEs, 56.6 for MNEs, and 1.8 for DCs).[94]

At least two possible explanations exist for these results. First, while product prices were not significantly different among the groups, other costs (such as freight, insurance, management, marketing, and distribution services provided by the parent company) may be manipulated through cost-allocation policies in order to affect profits and taxes, particularly for the U.S. operations of foreign-owned enterprises.[95] This explanation is in line with the evidence presented before the Congress. Second, while the costs to produce goods may be similar, other costs of operating the business may be greater for companies located in a different culture, particularly for foreign-owned companies operating in

the U.S.

While Hypothesis Two-A looked at the OI ratio for worldwide operations, Hypothesis Two-B, utilizing the information contained in the geographical segment note, provides information about the OI ratio (U.S. operating income/average identifiable assets used in the U.S.) in the United States (For companies with only domestic operations, average total assets and average identifiable U.S. assets would be the same.). When the GLM with covariates for size and age was applied to the mean OI ratio for the three groups in the U.S., significant differences at the .01 level were found for all four levels of inclusion *(See Appendix 25)*, and the null hypothesis was rejected. As with the worldwide OI ratio, when USMNEs with less than 50% of their sales and assets abroad were removed, significant differences were found for all levels of inclusion with three groups; but when the companies were classified into two groups, no significant differences were found for any of the levels of inclusion ($p>.05$).

As shown in *Appendix 26*, the means were negative for all groups and all levels of inclusion except USMNEs when DSEs were excluded. When all companies were included, USMNEs reported a -0.3 OI ratio for their U.S. operations (compared to a -0.8 ratio worldwide); USOFMNEs reported the most negative mean of -335.0^{96} (-322.2 worldwide); MNEs reported -

60.9 (-55.4 worldwide); and DCs reported -17.2 (-5.2 worldwide).[97]

Negative results such as these raise questions about the companies' reported results. However, although the mean OI ratio for each group was negative, the mean OI itself was positive. Looking at individual companies, 101 companies (91 USMNEs, 7 USOFMNEs, and 3 DCs) reported operating income and sales figures for both U.S. and foreign operations. Of these, five reported negative OI ratios for both U.S. and foreign operations (all USMNEs), ten reported negative U.S. and positive foreign OI ratios (8 USMNEs, 2 USOFMNEs), five reported negative foreign and positive U.S. OI ratios (4 USMNEs, 1 DC), and eighty-one reported positive OI ratios for both U.S. and foreign operations (74 USMNEs, 5 USOFMNEs, 2 DC). More than half of the companies, 52 of 101, reported lower OI ratios in the U.S. than abroad (45 USMNEs, 6 USOFMNEs, 1 DC). Thirteen (14.3%) of ninety-one USMNEs and two of seven (28.6%) USOFMNEs reported negative OI ratios in the U.S., and forty-five (49.4%) USMNEs and six (85.7%) USOFMNEs reported lower OI ratios in the U.S. than abroad.

Whereas the results of Hypothesis One did not support the suggestions of Congress and the IRS that MNEs might be avoiding their U.S. tax liability, the results for Hypotheses Two A and B --the significant differences found among the three groups and the more negative OI ratios found for

USOFMNEs -- seem more in accordance with the earlier anecdotal and case study results found by governmental researchers and Professor Wheeler, especially the emphasis on the results of foreign-owned enterprises operating in the U.S.

Hypothesis Three

The third hypothesis states that for the net-profit ratio (NP ratio; net profit worldwide/worldwide sales[98]) there are no significant differences among the means of the three groups.

Using the GLM and adjusting for the covariate measures of age, net sales, and average total assets, statistically significant differences were found in all four levels of inclusion (all companies, without DSEs, without FPs, and without both DSEs and FPs) at the .01 level when the companies were classified into three groups. The null hypothesis, therefore, was rejected. When only "over 50% USMNEs"[99] were used, significant differences were found among the means of the three groups at all levels of inclusion ($p<.05$ for no DSEs, $p<.01$ for all other levels). However, when all companies were classified into two groups and adjusted for the covariate measures, no significant differences were found *(See Appendix 25)*. Examination of the means for the groups helps to explain this result.

In contrast to net profit[100] which looks at dollars, the

NP ratio looks at net profit as a percent of sales (net profit/sales). Although multinationals reported mean net income (credit balance) in terms of dollars while domestics reported a mean net loss (debit balance), 21.4% of USMNEs, 37.5% of USOFMNEs, and 65.9% of domestics reported a negative NP ratio (*See Appendix 20*). The mean NP ratio for all companies was -29.0; for these companies, a sale of one dollar resulted in a mean net loss of $29.

One-way analysis of variance (unadjusted for covariate measures) found a significant difference among the means for the NP ratio for all levels of inclusion of the three groups ($p<.01$) but did not find similar significant differences when USMNEs and USOFMNEs were combined and compared to the mean of domestic companies ($p>.05$ for all levels of inclusion). USMNEs reported the least negative and USOFMNEs reported the most negative ratios. For all companies in the study, USMNEs reported a mean of -.09; USOFMNEs reported -289.7; multinationals reported -49.9, and domestic companies reported -5.0 (*See Appendix 27*).

While it is possible to accept both the argument of researchers such as Grubert, Goodspeed, and Swenson that younger enterprises may report lower net profit for reasons such as higher depreciation on recently acquired assets and the argument that foreign-owned enterprises may face higher costs because they are operating in a different culture, with

45.8% of the companies reporting negative NPs (*See Appendix 20*), it is difficult not at least to question: (1) how the NP ratio of USOFMNEs could be so negative in relation to USMNEs and DCs (especially since USOFMNEs are on average significantly older than DCs), and (2) how long companies could remain in operation with such negative results.

In spite of the negative mean NP ratio, multinationals reported a mean net income in terms of dollars. In ANOVA (unadjusted for covariate measures) for two and three groups and in all four levels of inclusion there were significant differences among the means of the groups for net profit with multinationals reporting higher net profits than the domestics (*See Appendix 22*).

Based upon the results of ANOVA on the OI ratio where statistically significant differences were found among the three-group means *(See Hypotheses Two-A and B)*, it is not surprising that a statistically significant difference would be found among the NP ratios for three groups. Also following the pattern found for OI ratio, when the companies were classified into only two groups, the NP ratio of the USOFMNEs operations tended to be overshadowed by the more numerous and less negative USMNEs, resulting in no significant difference in this ratio for multinationals and domestics.

Again, as for the OI ratio in Hypotheses 2-A and B, these results seem to be more supportive of the findings reported

before Congress and less supportive of the global advantages widely espoused as attributable to multinationals.

Hypothesis Four

The fourth hypothesis looks at the current worldwide (U.S. federal, U.S. state and local, and foreign) income tax expense of the companies as a percentage of net profit.

Using the GLM and adjusting for the covariate measures of age, net sales, and average total assets, no statistically significant differences (.05 level) were found among the mean effective tax rates when the companies were classified into three groups, between the means when the companies were classified into two groups, or among the means of the three groups with only over 50% USMNEs *(See Appendix 25)*. Therefore, the null hypothesis was not rejected.

As is typical, for most companies in this study the income tax expense reported on the income statements was frequently different from the income tax per tax return with a portion of the income tax currently payable to one or more governments and the remainder deferred as either a deferred liability or a deferred asset. Many items -- such as depreciation, installment sales, product warranty liabilities, and advance collection of revenues -- contribute to the origination and subsequent reversal of deferred income tax liabilities and assets.

Just as a statistically significant difference was found among the mean financial statement income tax expenses reported by the groups, a similar pattern exists among these chemical companies on the measure of current worldwide income tax expense. For all companies, the mean current worldwide income tax expense was $37.7 million with a minimum of -$23 million and a maximum of $1.72 billion (*See Appendix 22*). USMNEs reported a mean of $90.3 million, USOFMNEs $11.4 million, MNEs $78.2 million, and DCs $570.4 thousand.

No significant differences were found among the effective income tax rates (three groups, two groups, or three groups with only "over 50% USMNEs") after adjusting for the covariates of size and age (*See Appendix 25*); however, as shown in *Appendix 28, Panel 1*, ANOVA of effective income tax rate (current worldwide income tax expense as a percent of worldwide net profit) found significant differences among the unadjusted means of the three groups at two levels of inclusion -- all companies and without FPs, both at the .05 level. Significant differences were found between MNEs and DCs at the .05 level for all levels of inclusion. For all companies, USMNEs reported an average effective income tax rate of 50.9%, USOFMNEs reported 11.7%, MNEs reported 44.9%, and DCs reported 11.3%.

Looking at other information taken from the income statement and balance sheet, as shown in *Appendix 28, Panel 2*,

ANOVA of current worldwide income tax expense as a percent of worldwide income before income tax found no significant differences among the means of the three groups or between the means of the two groups ($p<.05$ in all cases). This result is not surprising. Even if multinationals manipulate income for tax purposes, as has been suggested by the IRS and in hearings before Congress, these manipulations would have been reflected already in income before income taxes.[101]

Similar findings resulted from ANOVA on the ratio of current worldwide income tax expense to worldwide net sales (*See Appendix 28, Panel 3*). No significant differences (.05 level) were found among the means of the groups for this ratio for three groups, two groups, or three groups with only "over 50% USMNEs" at any level of inclusion.[102]

However, one-way analysis of current worldwide income tax expense to average total assets worldwide found significant differences for three groups, two groups, and three groups with only "over 50% USMNEs" at the .01 level. USMNEs reported the largest ratio, namely 0.03753; USOFMNEs reported 0.00785; MNEs 0.03297; and domestics 0.00677 (*See Appendix 28, Panel 4*).

This finding would be consistent with the suggestion of Grubert, Goodspeed, and Swenson that younger companies have higher start-up costs and more expensive, recently acquired assets. Older USMNEs would have amortized most of their

start-up costs and would have more fully depreciated assets on their books. For younger companies (USOFMNEs and DCs, 28.86 and 15.87 years respectively) tax is compared to a relatively large asset base resulting in a low percentage of assets being expended as current income tax expense while for older companies (USMNEs, 52.99 years) tax is compared to a relatively small asset base resulting in a high percent of assets being expended as current income tax expense. Age would not necessarily affect net sales in a similar manner and, consequently, there were no statistically significant differences among the percentages of net sales being expended for current income tax.

Hypotheses Five A and B

The Hypothesis Five, consisting of two sub-hypotheses, states that there are no significant differences among the effective operating-income tax rates for the groups (current income tax expense/operating income) for both worldwide or U.S. operations.

Using GLM and the covariates of age, net sales, and average total assets, no significant differences were found among the means for the three groups, between the means of the two groups, or among the means for three groups with only "over 50% USMNEs" for any level of inclusion (*See Appendix 25*). For both worldwide operations and for U.S. operations

the null hypotheses were not rejected.

As shown in *Appendix 22, Panel 7*, the mean current domestic income tax expense for all companies was $22.3 million; the minimum was a negative tax of $56 million[103]; the maximum was $707 million. In a one-way analysis of variance (unadjusted for covariate measures), the means of three groups, two groups, and three groups with only "over 50% USMNEs" at all levels of inclusion were significantly different. USMNEs reported the largest current domestic income tax expense with a mean for the group of $52.9 million (all companies); USOFMNEs reported $8.4 million; MNEs reported a mean of $48.0 million; and domestics reported $564 thousand. The means for all groups increased when the development stage companies were removed ($55.1 million for USMNEs; $9.2 million for USOFMNEs; $48.3 million for MNEs; $682 thousand for domestics), but the differences still remained significant. When foreign parent companies, and when both foreign parent and development stage companies were removed, the means increased to $9.7 million and $10.8 million for USOFMNEs, and changed to $47.0 million and $49.4 million for MNEs, but in all cases the differences among these unadjusted (for age, net sales, and average total assets) means were significant at the $p<.01$ level.

However, whereas the mean dollar values (unadjusted for covariates) of current worldwide and current domestic income

tax expense were significantly different for all levels of inclusion for both two groups and three groups, the ratios of the current worldwide and current domestic income tax expense to the worldwide and domestic operating income, respectively, (both adjusted and unadjusted for covariates) showed no significant differences for any grouping or any level of inclusion (*See Appendix 25*).

With larger sales volumes, larger operating incomes, and larger income before income taxes, it would be expected that the multinationals would have greater financial statement income tax expense and larger current income tax expense. More information about the current income tax expense of the groups may be found by looking at the current domestic income tax expense as a percent of other financial statement components.

As shown in *Appendix 28, Panel 6*, in ANOVA, unadjusted for covariates, no significant differences were found among the means of the three groups, between the means of the two groups, or among the means of three groups with only "over 50% USMNEs" at any level of inclusion for the ratio of current domestic income tax expense as a percentage of domestic net sales. However, in all combinations of grouping and at all levels of inclusion, significant differences ($p<.01$) were found among the means for the ratio of current domestic income tax expense as a percentage of domestic average total assets

(all companies) with USMNEs reporting the largest ratio, namely 0.3975 (all companies), USOFMNEs reporting 0.00714, MNEs 0.03473, and DCs 0.00662 (*See Appendix 28, Panel 7*).

These results are similar to those reported for the ratios of current worldwide income tax expense to net sales and to average total assets. Again the work of Grubert, Goodspeed, and Swenson seems to provide an explanation consistent with these results.

Hypothesis Six

The sixth hypothesis looks at the return on average total assets (RAA).

Multinationals have been shown to have larger sales, larger asset bases, and larger net incomes than domestics. In all cases, the differences among the groups have been significant. However, the question remains whether the return earned on those assets is significantly different.

The GLM was used to test for differences among the mean RAAs of the groups adjusting for the covariates of age, net sales, and average total assets. No statistically significant differences were found among the means of the three groups under any of the four levels of inclusions (all companies, without DSEs, without FPs, and without either DSEs or FPs). Likewise, no significant differences were found among the means when the companies were classified into two groups.

Even with the removal of all USMNEs with less than 50% of their sales and assets abroad, no significant differences were found *(See Appendix 25)*. Thus, the null hypothesis was not rejected.

Without adjusting for the covariate measures of age and size, for all companies, the mean return on average total assets (net profit/average total assets) was -1.129 for USMNEs; -0.138 for USOFMNEs; -0.934 for MNEs; and -0.671 for domestics. With the removal of DSEs, FPs and both DSEs and FPS, the negative returns continued to be exhibited (*See Appendix 29, Panel 1*). There were no statistically significant differences in any of the cases ($p>.05$ in all cases).

This hypothesis looked at worldwide net profit and worldwide assets. The lack of significant differences among the group means adds support to the suggestion that the chemical industry is an oligopoly with similar overall return on the assets invested regardless of whether a given company is operating domestically or internationally. The lack of differences among the groups, especially within the U.S., argues against the position of the IRS and Congress that income is being shifted for tax purposes.

Hypotheses Seven A and B

Most of the hypotheses address worldwide operations. However, because worldwide operations are carried out in different geographic and political areas by MNEs, differences between the results of domestic operations and operations abroad might be masked by combining those results into a single worldwide rate of return. The geographic segment footnote details sales, assets, and operating income which add information that could help in understanding the lack of significant differences among the means for RAA.

Hypotheses Seven A and B state that there are no significant differences among the means of the three groups in the worldwide operating return on assets (worldwide operating income/worldwide average total assets) or in the domestic operating return on assets (U.S. operating income/U.S. average identifiable assets)[104].

Using GLM and adjusting for the covariates of age and size, no statistically significant differences were found for any level of inclusion when comparing the three groups on either worldwide or domestic operating return on assets. The null hypotheses, therefore, were not rejected (*See Appendix 25*).

Without adjustment for the covariates, significant differences ($p<.01$) were found among the groups in one-way analysis of variance of worldwide and domestic net sales,

worldwide and domestic average total assets, as well as for worldwide and domestic operating incomes (*See Appendix 22, Panel 2, 10, 3, 11, 13, and 12*), with multinationals reporting larger mean worldwide and domestic sales (for all companies, $2.08 and $1.38 billion for USMNEs; $2.27 and $1.78 billion for USOFMNEs; $2.11 and $1.46 billion for MNEs; $42.9 and $40.7 million for DCs, respectively), larger mean investments in assets worldwide and in the U.S. (for all companies, $2.09 and $1.21 billion for USMNEs; $2.48 and $1.64 billion for USOFMNEs; $2.17 and $1.29 billion for MNEs; $53.5 and $51.7 million for DCs, respectively), and larger mean worldwide and domestic operating incomes (for all companies, $340 and $180 million for USMNEs, $248 and $221 million for USOFMNEs, $322 and $189 million for MNEs, respectively, and $2.1 million for DCs both worldwide and in the U.S.) than domestic companies. When both foreign parents and development stage enterprises were removed, the differences remained significant ($p<.01$) with the following results (B = billion; M = million):

	Mean Dom. Sales	Mean Dom. Assets	Mean Dom.
Op.Income			
USMNE	$ 1.43B	$ 1.24B	$ 187M
USOFMNE	469M	428M	66.0M
Domestic	48.5M	58.7M	3.4M

Looking at the ratios of the groups in terms of their

U.S., foreign, and worldwide operations presents the following differences (all companies)[105]:

	USMNE	USOFMNE	Domestic
Operating Income/Sales			
U.S.(p<.01)	0.909	-322.3	-5.090
Foreign (Non Sign)	0.854	0.045	0.043
Worldwide (p<.01)	-0.817	-322.2	-5.090
Operating Income/Assets			
U.S. (p<.05)	0.117	-0.234	-0.629
Foreign (Non Sign)	0.139	0.143	-0.40
Worldwide (p<.05)	0.080	-0.093	-0.620
Sales/Assets			
U.S. (p<.01)	1.296	0.823	0.7972
Foreign (Non Sign)	1.346	0.961	1.943
Worldwide (p<.01)	1.100	0.667	0.7550

Operating income as a percent of sales was negative for both USOFMNEs and DCs in the United States but was positive for all three groups in foreign countries, suggesting the possibility of income being shifted out of the U.S. by foreign-owned companies. There were no significant differences among the means of the groups in foreign markets, but the differences were significant (p<.01) in the United States.[106]

The average ratio of operating income to assets was positive for USMNEs in both the U.S. and abroad; negative for USOFMNEs in the U.S. but positive abroad; and negative for domestics both in the U.S. and abroad. There were again no significant differences among the means in foreign markets, but differences within the United States were significant (p<.05).

The mean dollars of sales per dollar of assets for the three groups were significantly different in the U.S -- but not abroad. Only 93 companies (84 USMNEs, 8 USOFMNEs, and 1 DCs) reported operating income and asset figures for both U.S. and foreign operations. Of these, five reported negative OI/asset ratios for both U.S. and foreign operations (3 USMNEs, 2 USOFMNEs), eight reported negative U.S. and positive foreign ratios (7 USMNEs, 1 USOFMNEs), five reported negative foreign and positive U.S. OI/asset ratios (all USMNEs), and seventy-five reported positive ratios for both U.S. and foreign operations (69 USMNEs, 5 USOFMNEs, 1 DC). More than half of the companies, 48 of 93, reported lower OI/asset ratios in the U.S. than abroad (41 USMNEs, 6 USOFMNEs, 1 DC). Ten (11.9%) of eighty-four USMNEs and three of eight (37.5%) USOFMNEs reported negative OI/asset ratios in the U.S., and forty-one (48.8%) USMNEs and six (75%) USOFMNEs reported lower ratios in the U.S. than abroad.

These results are in line with Wheeler's (1990) findings. All three groups are generating approximately the same amount of sales per dollar of asset and achieving approximately the same returns on sales and assets in foreign markets. However, within the U.S. this pattern is not repeated. The higher returns of U.S. multinationals seem to indicate that USMNEs are not avoiding their U.S. tax liability; whereas the large negative returns of foreign-owned operations seem to support

the suggestions of the Congress and IRS that members of this group may be avoiding their U.S. liability. However, as with the current income tax expense as a percent of total assets, another possible explanation rests in the ages of the companies in each group and the book values of their assets. If the U.S. assets of FMNEs are significantly younger than the U.S. assets of USMNEs, keeping everything else constant, the U.S. OI/assets ratio would be lower for FMNEs than for USMNEs, because the denominator (book value of assets) would be higher for FMNEs than for USMNEs. To the extent that companies use accelerated depreciation methods, the measures (OI) of that ratio would be lower for FMNEs than for USMNEs, which further decreases the U.S. OI/asset ratio of FMNEs in comparison with USMNEs.

Hypothesis Eight

The eighth hypothesis looks at a possible apportionment of worldwide income through the application of a two-factor formulary method to worldwide income (*See Appendix 10*). Using segment information included in the notes to the financial statements, this hypothesis tests for differences between the results that would be reported using apportionment of income under a two-factor approach and the amount actually reported under the present method of accounting for income earned in different political jurisdiction.

FAS 14 requires that companies report segmental sales, identifiable assets, and operating income for geographic regions in which 10% or more of their operations take place. Operating income is revenue less operating expenses and specifically does not include items such as:

1. Revenue derived from any source other than industry segment operations
2. Revenue earned at the corporate level
3. General corporate expenses
4. Interest expense, except where the principal operation of an industry segment is financial
5. Income taxes - both foreign and domestic
6. Equity in the income or loss derived from an unconsolidated subsidiary or investee
7. Gain or loss on discontinued operations
8. Extraordinary items
9. Minority interests in income
10. Cumulative effect of a change in an accounting principle.

Ninety-seven companies included in this study reported segmental net sales, identifiable assets, and operating income[107].

In testing this null hypothesis, the ratios of U.S. sales to worldwide sales and of U.S. assets to worldwide assets were calculated for these 97 companies. The mean ratio of U.S. sales to worldwide sales was 63.05%, and the mean ratio of U.S. assets to worldwide assets was 62.09%, giving an average mean of these two ratios of 62.57%.

The mean ratio of U.S. to worldwide operating income was 44.0%. Although the means appear to be quite different, a paired t-test (called *TWOSAMPLE* in *Minitab*) found no

statistically significant difference (T=0.27, p>.05) between the operating income that was reported for domestic activities and the operating income that would have been apportioned under a two-factor formula using segment sales and assets *(See Appendix 30)*. Thus, if companies currently were to use the simpler formulary approach to solve the problem of apportioning worldwide income, the amount apportioned to the U.S. would not be significantly different from that apportioned under the more complex system currently in use.

Having found no statistically significant difference when using all companies as a single group, a separate analysis was run to examine the percentage of difference between the amount of operating profit allocated to the U.S. under the formulary methods and the amount of domestic operating income reported by USMNEs and USOFMNEs. No statistically significant difference (p>.05) was found between the mean percentages for the two groups. This finding does not support the suggestion of the IRS and the Congress that foreign-owned multinationals pay less than their "fair share" of U.S. income tax.

Hypothesis Nine

The ninth hypothesis compares the apportionment of worldwide operating income under a three-factor formula consisting of sales, assets, and employees[108] with actual reported apportionment.

Employment data are not required by *FAS 14* to be reported in the geographic segment note to the financial statements, and only seven companies included in this study reported the number of employees by geographic segment.

For this small subset of companies, the mean ratio of U.S. sales to worldwide sales was 49.46%; the mean ratio of U.S. assets to worldwide assets was 51.19%; and the mean ratio of U.S. employees to worldwide employees was 41.28%. Weighting the three factors equally, the average mean of these factors was 47.31%. The mean ratio of U.S. to worldwide operating income was 46.16%.

The small number of reporting companies makes it difficult to detect significant differences that might exist. In a paired t-test *(TWOSAMPLE)*, no statistically significant difference was found (T=2.28, p>.05) between the ratio of U.S. operating income that was reported in the annual reports and the amount that would have been apportioned under a three-factor formula using the ratios of U.S. sales, assets, and employment to worldwide sales, assets, and employment *(See Appendix 30)*. Consequently, the null hypothesis could not be rejected at the .05 level. As with the two-factor formulary approach, there was no significant difference between the three-factor formulary apportionment approach and the more complex method currently being used.

Again, having found no significant difference when all

the companies were treated as a single group, a separate analysis was run to compare the mean percentages of difference between the amount of operating income reported and the amount that would have been apportioned under a formulary approach for USMNEs and USOFMNEs. The results of this analysis fail to lend support to the arguments that foreign-owned multinationals are avoiding U.S. income tax as no statistically significant difference ($p>.05$) was found between the means of the two groups.

Schmidt (1986) and Hreha and Silhan (1986) have suggested that a two-factor formula works as well, if not better, than a three-factor formula for allocative accuracy. This study adds support to their findings. While not suggesting that one method is superior to the other in allocative accuracy, the lack of a significant difference between the current allocation method and the formulary allocation method supports the suggestion that either the two-factor or three-factor method would simplify the tax system without a loss in allocative accuracy.

However, the formulary apportionment approach is not without critics. Milton (1989) questions in particular the constitutionality of a tax law that would subject foreign operations of foreign-owned corporations to domestic tax laws.[109] He also points out that, in addition to invoking the ire of tax partners, especially those in Europe, a worldwide

unitary tax system would interfere with the government's ability and independence to conduct foreign affairs.

In addition to concerns regarding constitutionality, the response of other countries, and the government's ability to conduct foreign affairs, the formulary apportionment method is subject to manipulation. For example, under a three-factor formula with all factors receiving equal weight, a MNE, having operations in both a high- and a low-tax rate political jurisdiction, would try to funnel most or all of their sales through the operation in the low-tax area, thereby weighting the sales factor of the formulary apportionment in favor of the low-tax country. Likewise, if the formula were based on the number of employees rather than wages paid, the company might find it expedient to hire additional workers at a low wage to weight this factor in favor of low-rate countries. The savings in worldwide taxes could outweigh the additional expenditure for otherwise unnecessary or marginally necessary labor. Because of the taxpayers' ability to influence the formulary apportionment, the findings of this study should not be interpreted to imply that the implementation of a worldwide unitary tax policy would result in similar allocations in the future.

Analysis Without the Covariate for Age

The ages used as covariates were the ages reported by the companies in their annual report or in the **Directories**. For USMNEs, this age is not a reflection of the length of time that the company has been operating internationally. For example, a USMNE might be fifty years old and have been operating overseas for only a few years. Likewise, for USOFMNEs, the age of the U.S. operation does not reflect the age of the foreign parent company. That parent company may have many years of operations that provide a base of capital and expertise for the new U.S. operation that would not be available to a domestic corporation of the same age. Therefore, to strengthen the findings of this study, the statistical analyses were reperformed without using age as a covariate. The results of those GLM tests with only net sales and average total assets as covariates are presented in *Appendix 31*. The absence or level of significance, if present, did not change for:

Hypotheses 2-A and 2-B, Operating Income, worldwide and domestic,

Hypothesis 3, Net Profit Ratio,

Hypotheses 5-A and 5-B, Effective Operating Income Tax Rate, worldwide and domestic, and

Hypothesis 6, Return on Average Total Assets.

The changes in the absence or level of significance, if

present, for Hypothesis 1, Hypothesis 4, and Hypotheses 7-A and 7-B suggest the importance of age as a covariate in these cases. In four GLM tests for Hypothesis One, COGS ratio, (three groups without DSE, three groups without DSE or FP, two groups without FP, and two groups without FP or DSEs), the results were no longer significantly different. In three tests for Hypothesis Four, worldwide effective income tax rate, (two groups for all companies, two groups without DSEs, and two groups without FPs), a significant difference at the .05 level was found when the covariate of age was omitted. In five tests for Hypothesis Seven-A, worldwide operating return on assets, (three groups for all companies and two groups for all companies, without DSEs, without FP, and without DSEs or FPs), significant differences at the .05 level were found. In two tests for Hypothesis Seven-B, U.S. operating return on assets, (two groups for all companies and two groups without FPs), significant differences at the .05 level were found.

Summary of Conclusions

Focusing upon a relatively large number of companies in a single industry, the results of this study, in general, support the findings of earlier works. Interestingly, for these companies, this support is more applicable to the operating expenses than to the cost of goods sold.

The results, however, are somewhat mixed. Both

significant differences and no significant differences were discovered. One striking finding is the significantly lower COGS ratio for multinationals than for domestic corporations, although it did not find a significant difference among the ratios of foreign-owned multinationals, U.S.-owned multinationals, and domestics. This lack of difference is particularly important when looking at USOFMNEs and DCs. For these two groups, the reported sales and cost of goods sold are predominantly U.S. results, while for USMNEs the ratio represents worldwide results which could mask differences that might exist in the U.S. The finding of a lower COGS ratio for multinationals is in direct contrast to the Congressional view that foreign-owned corporations use an artificially high (or low, depending upon the direction of transfer) transfer price between their U.S. and foreign operations in order to decrease U.S. gross profits and thus U.S. income taxes. Based upon the methodology used and results of this study, it cannot be said that, as a group, the multinationals in this study are using transfer pricing of goods to avoid U.S. income tax liability in the manner suggested by the IRS and Congress.

However, transfer-pricing of goods between affiliated parties is not the only concern of the IRS and Congress. Marketing, management, and other services also are provided by one affiliated company for another. While these costs are not reflected in the COGS ratio, they do appear as operating

expenses and, therefore directly affect income. This study found that domestic companies reported a mean operating-income ratio that is more negative than that of U.S.-owned multinationals but less negative than that of USOFMNEs. This finding, combined with the Berry ratio and operating expenses as a percent of sales results, suggests that domestic companies, in addition to exhibiting a higher cost to produce the goods they sold, also are faced with relatively higher costs to operate their businesses than their U.S.-owned multinational counterparts. To this point, the findings on OI ratio would be consistent with the view that U.S. multinationals enjoy an advantage because of their ability to select sites for locations that reduce operating expenses.

Supporting an opposing view and even more dramatic, however, than the differences between U.S. multinationals and domestics were the negative results reported for U.S. operations of foreign-owned corporations. While USOFMNEs enjoyed the advantage of a lower mean COGS ratio, the mean operating expense was so large that this group reported the largest mean negative OI ratio. Additionally, for those companies reporting both domestic and foreign results, the negative OI ratio reported by foreign-owned operations in the U.S. compared unfavorably to the positive OI ratios they reported abroad. The positive operations of U.S.-owned multinationals at home and abroad add support to the

possibility that foreign-based MNEs may overallocate operating expenses to their U.S. affiliates. Much like other researchers who have investigated this area, one can hardly look at the reported magnitude and pattern of the negative OI ratio[110] for foreign-owned companies in this study and not question whether something is amiss.

Continuing down the income statement to net profit, similar results were found. It is difficult to see 46.1% of all companies reporting a negative or zero net profit (*See Appendix 20*) and not have questions raised. Although the U.S. economy began 1991 in a moderate recession with a decline in the real gross national product (GNP) during the first quarter, the economy stabilized during the second quarter and began to rebound during the third and fourth quarters of the year (*U.S. Industrial Outlook 1992*, p. 1). In the chemical industry, while the constant-dollar value of shipments increased by only 0.6%, and capacity utilization actually decreased by 1% of plant capacity (from 78% in 1990 to 77% in 1991), both chemical exports and imports increased (by 12% and 4.1%, respectively, from 1990 figures). Even though not all indicators were extremely positive for this industry during 1991, clearly some were positive, reflecting the close tie between the health of this industry and the U.S. economy in general (*U.S. Industrial Outlook 1992*, p. 11-1 and 11-2). Thus, if companies are organized with a profit motive, it is

difficult to find all three groups of companies reporting a mean zero or negative income during this period of time and not be suspect. The less negative results of U.S. multinationals compared to domestics might reflect the ability of these multinationals to operate in a more profitable manner at home and abroad through selective location -- an opportunity that would not be available to the domestics. However, the more negative mean net-profit ratio reported by USOFMNEs raises the question of why foreign parent companies do not achieve results similar to domestic (U.S.) companies. USOFMNEs are more nearly the age of domestics than U.S. multinationals and may be facing both larger start-up costs and additional "culture-barrier" costs. However, with an average age of over twenty years, the questions arise: How long will companies choose to operate at a loss? Does "going global" really provide the competitive advantages that have been suggested? What other incentives might exist to encourage continued operations in such "infertile fields?"

Another striking result of this study is the lack of significant differences among the groups on the tax-related ratios -- effective income tax rate, effective worldwide operating-income tax rate, and effective domestic operating-income tax rate. If companies are manipulating their income to avoid taxes, particularly if they are doing so on a global

basis, significant differences would be expected on these ratios. Since tax planning is neither illegal nor unethical, it seems unusual to see no significant differences on these ratios after covariates have been taken into account.

Finally, this study found no significant differences between the income reported in the U.S. and the amount that would have been apportioned to the U.S. under a formulary apportionment method using sales and assets or sales, assets, and employment figures. The simpler formulary methods yielded amounts not significantly different from the amounts currently reported. However, as discussed earlier, the fact that these amounts are currently similar does not mean that the implementation of formulary methods of apportionment would continue to yield similar results. Such an implementation might produce very dissimilar results in the future as corporations make managerial decisions regarding the location of assets, sales, and labor in an effort to maximize total future organizational returns.

In summary, although research into the alleged misuse of transfer prices cannot provide a definitive answer without access to actual tax returns and company files, this study has shed additional light and empirical evidence regarding the lingering problem of how to handle transfer pricing, cost allocation, and taxation on a global scale.

Chapter 5. Limitations and Extensions

This chapter explicates the limitations of this study regarding its design, the year under study, the availability of data, and the generalizability of the results. It concludes with a discussion of future directions for research.

Design of the Study

For purposes of practicality, this study used an empirical rather than an experimental design. While it benefitted from the strengths associated with that methodology, it also suffered from the method's inherent limitations. For example, the finding of significant differences among the groups on many of the measures chosen does not prove that MNEs are using transfer-pricing and cost-allocation policies to avoid taxes. The decision to "go global" is certainly not based upon one factor alone. Studies and theory cited earlier clearly indicate that management looks at many factors in making such a decision, and once the decision is made, management has greater flexibility in deciding how and where to locate operations in order to best utilize available resources. Likewise, the absence of significant differences on other measures, does not prove that

MNEs are not using transfer-pricing and cost-allocation policies to reduce U.S. income taxes. Rather, the absence of significant differences in the ratios may indicate that the measures used for this study were not sensitive enough to capture the differences.

In spite of these design limitations, the study does provide some statistical support for presence and absences of differences among foreign owned multinationals, U.S. owned multinationals, and U.S. domestic corporations on certain measures of financial position and results of operations. Perhaps more importantly, on many measures where a difference appears to exist in a cursory examination of the financial statements, it also provides statistical support for the lack of statistically significant differences in many cases when the company's reported numbers are adjusted to take into account the size and age of the operation.

Year Selection

The year 1991 was a year of change in the world. Europe was looking to the commencement of Europe 1992; changes were taking place in the communist sectors of Europe; the economy in the United States was coming out of a moderate recession; new trade agreements were being discussed. These and many other national and international events could have had an effect on the financial outcomes of the companies included in

this study. The use of a different year may or may not have produced different results. However, while this study focuses on the results of only one year, by reporting information on operations of these particular companies during that time period, it makes a contribution in opening the area for further investigation.

Availability of Data

Lack of "Raw" Data. The availability of data was another limitation. "Raw" data, i.e., the tax returns and accounting records of the companies involved, were not accessible. Annual reports prepared by the corporations for public distribution, information presented by the companies in their required SEC filings, and summary information from tax returns as provided by the IRS had to suffice as surrogates for actual tax returns and accounting records. This use seems to be justified since many tax return data are based on accounting records which also serve as the bases for the preparation of the companies' annual reports. Moreover, the use of such reports in lieu of underlying accounting records is quite prevalent in empirical research.

Age. The measurement of company age constituted another limitation, particularly for multinationals. The age used in this study was the age of the company from its incorporation

as self-reported in the annual reports or in the **Directories**. In the case of MNEs the age from incorporation would not be indicative of the length of time the company had been operating globally. In an attempt to ameliorate this limitation, the GLM analyses were run without using age as a covariate.

Lack of Privately-Owned Chemical Companies. Another limitation encountered was the exclusion of privately-owned companies. Since such companies are not required to prepare annual reports for distribution to the public and are not required to file reports with the SEC, data necessary for this study are hardly ever available about privately-owned companies. Therefore, such companies were excluded from the study. However, the limitation of this study to publicly-held companies is likely to be of minor importance since privately-held companies tend to be small and typically have no or only limited opportunities to use international transfer prices to reduce worldwide income taxes.

Company Classification. Still another limitation was the lack of more refined measures for classifying the companies. Segmental reporting is required only for 10% segments and the Directories used to classify the companies also generally use a 10% threshold. Therefore, companies with segmental

operations of slightly less than 10% typically would not report segmental results while companies that had exactly a 10% segment would include segmental information in annual reports and SEC filings. Likewise, a company that had foreign ownership of slightly less than the 10% threshold would be listed as a domestic (U.S.) company while another company slightly above that arbitrary cutoff point would be reported as the U.S. affiliate a foreign multinational.

To compensate for these limitations, the statistical tests were reperformed using only U.S. parent companies with 50% or more of their operations abroad. As was discussed earlier, the presence or absence of USMNEs with less than 50% of their operation abroad did not result in a change in the presence or absence of significance. In only three cases when DSEs were removed -- worldwide operating-income ratio, domestic operating-income ratio, and worldwide net-profit ratio -- did the level of significance even change.

Development Stage Enterprises. Promulgated GAAP does not set strict guidelines for determining when a company ceases to be a development stage enterprise. This decision is made by the management of each company with only minimal guidance from the FASB. Therefore, the inclusion or exclusion of these development stage enterprises may be somewhat arbitrary based upon the managerial decision-making process. Nevertheless,

reperforming the tests excluding self-reported DSEs is believed to have strengthened the rigor of this study.

Summary Data and Incomplete Data. IRS summary data, annual reports, and SEC filings which were used in lieu of the desired "raw" data have additional limitations. The IRS is slow in analyzing tax data, and the data it selects to examine, analyze, summarize, and present are not necessarily what might be most desirable for a study of this type. Similarly, the annual reports and the 10-Ks filed with the SEC are not always as detailed or as complete as they should be (according to promulgated GAAP or SEC rules) or as would be desirable for this study.

Notwithstanding these data limitations, it is believed that the data sources selected were the best ones available and were sufficient to provide meaningful results.

Generalizability of Results

Another limitation concerns the generalizability of the results to a wide spectrum of industries. Because the chemical industry was not selected randomly and because it constitutes only a single industry, the results found are specific to that industry and may or may not be applicable to other industries.

Future Directions for Research

Much has been written on both sides about the advantages and disadvantages, the equity or inequity, that exist between domestic companies and multinationals as well as between U.S.- and foreign-owned corporations. The arguments on both sides have been logical -- and frequently loud and passionate. Research, however, has been scanty, and what research has been done has often been self-serving. While the goal of this study was to be able to provide some empirical data regarding similarities and differences among the publicly-reported results of chemical corporations operating within the U.S., the on-going debate regarding how to tax international enterprises is likely to continue. The importance of this tax policy issue, and the restrictions of this and earlier research studies to one or a few industries during single years suggest that this policy issue still needs further exploration. Examination of other industries is in order. What is or is not happening in one industrial classification may or may not be indicative of what is or is not taking place in other industries or across the spectrum of industries.

Congress has been particularly critical of the operations of Japanese corporations operating within U.S. borders. Another line of possible future research is an examination of foreign-owned operations in the U.S. and U.S. multinational operations based on other specific countries involved. If tax

evasion on the international scene truly exists, it may be more severe with respect to certain countries.

Finally, another possible line of future research may involve time-series analyses. Looking at the operating results of a company, or groups of companies -- multinationals, domestics, as well as companies that are "going global," -- over several years might provide additional information about the existence and extent of alleged tax evasion.

ENDNOTES

[1] A transfer price is the price charged by one party for goods and/or services transferred to a related party.

[2] More specific in enumerating objectives to be met by international transfer-pricing polices, Abdallah (1989) listed nine objectives:

> (1) reduction of income taxes, (2) reduction of tariffs, (3) minimization of foreign exchange risks, (4) avoidance of a conflict with host countries' governments, (5) management of cash flows, (6) competitiveness, (7) performance evaluation, (8) motivation, and (9) goal congruence (p. 48).

[3] The subcommittee, meeting again on April 9, 1992 to receive an update on what had been done in this area since the 1990 session, concluded that the situation had not improved greatly during the previous two years.

[4] If a single company were the sole producer of a particular product or the sole supplier of a service, then its actions in the U.S. and abroad could easily be compared. However, the existence of monopolies (single sellers) is extremely uncommon in today's marketplaces. Even duopolies (two sellers) are rarely found. In order to be able to compare operations within the United States with those outside

the U.S., an attempt was made, therefore, to find companies that operate within an oligopoly (few sellers). Economists have suggested that most large-scale industries are oligopolies. Consider for example, the Big Three automotive manufacturers in the U.S. and the few firms producing cigarettes or breakfast foods (Samuelson, 1976, p. 116).

Oligopolies are of two types: those in which there is little or no product differentiation and those in which there is some product differentiation. In the first case, where products have little or no differentiation, sellers are "mutually interdependent" in that each seller firm is aware that if the price of its essentially undifferentiated product is raised, its competitor firms will not follow suit and raise their prices. Instead, competitor firms will leave their prices at their original level with the expectation of gaining some customers who are willing to switch to their product in the face of higher prices. In a similar manner, because of "mutual interdependence," if one seller firm cuts the price of its essentially undifferentiated product, its competitor firms will follow suit and any advantage of such a price cut will soon be lost for the initial price cutter. Therefore, the firms tend, without collusion which would be in violation of antitrust laws, to set similar prices for their products. These prices will be higher than prices that would exist in

the situation of perfect competition but lower than would exist in the situation of a monopoly. The oligopolistic firms will enjoy a profit greater than they would in perfect competition but low enough to discourage the entrance of new competitors into the marketplace (Samuelson, pp. 512-517).

An industry with a limited number of sellers in the global marketplace would be expected to behave in an oligopolistic manner. Each firm, anticipating the response of its competitors to price changes, would tend to set prices in a similar manner. This behavior should apply across geographic boundaries because of the existence of both domestic and foreign competitors in each marketplace. Because "mutual interdependency" affects and influences the pricing behaviors of these firms, they are expected to behave similarly in both their foreign and domestic markets.

[5] The Survey of Current Business (Footnote #1, page 20, August 1984) defines U.S. direct investment position as follows:

> The position is the book value of United States direct investors' equity in, and net out loans to their foreign affiliates. Thus, the position measures the net claims of U.S. parents on their affiliates, and is not a measure of the assets of the affiliates, which are the sum of owners' equity held by, and liabilities owed to both U.S. parents and all other persons. (A foreign affiliate is a foreign business enterprise in which a single U.S. investor owns at least 10% of the voting securities, or the equivalent.)

[6] The Survey of Current Business (Footnote #1, page 26, August 1984) defines direct foreign investment position as follows:

> The position is the book value of foreign direct investors' equity in, and outstanding loans to, their United States affiliates. Thus, the position measures the net claims of foreign direct investors on their U.S. affiliates and is not a measure of the assets of the affiliates, which are the sum of owners' equity held by, and liabilities owed to, both foreign direct investors and all other persons. (A U.S. affiliate is a U.S. business enterprise in which a single foreign investor owns at least 10% of the voting securities, or the equivalent.)

[7] As will be discussed in Chapter 2, several methods of apportioning income among jurisdictions for tax purposes are currently being discussed. Among these are specific allocation, separate accounting, and formulary apportionment based upon certain financial measures.

[8] Patrick G. Heck, Assistant Counsel to the Committee on Oversight stated before the Ways and Means Committee in 1990 that

> For years, allegations have been made that a significant number of foreign multinationals were charging their U.S. subsidiaries inflated prices for manufactured goods and various fees to reduce their taxable income in the United States. It is well established that, through intercompany pricing, multinational corporations can significantly affect the amount of taxes they pay or don't pay. Analyses of IRS statistics of income (SOI) data have typically been used to confirm or deny the existence of a compliance problem in this area. *No one, however, has thoroughly looked behind the aggregate SOI numbers to determine if, in fact, foreign-owned companies were underpaying U.S. taxes*

and, if so, the extent of the problem and how it is being done (Tax Underpayments By U.S. Subsidiaries of Foreign Companies, p. 39). [Italics added by author.]

[9] It should be noted that the Bureau of Economic Analysis (publisher of Survey of Current Business which serves as a source for most of the financial information presented in this section) annually revises the past four years of United States' international transaction figures that have been reported in the Survey of Current Business. In this paper, an attempt has been made to use the most recent figures available.

[10] The rate of growth slowed somewhat during the early 1990s with increases of only 7.0%, 4.9%, and 1.2% for the years 1990-93.

[11] The investment outlays in terms of dollars slowed somewhat in the late 1980s and early 1990s, reaching a low point in 1992 before rising again in 1993. Interestingly, however, the number of U.S. businesses acquired or established through foreign direct investment rose until 1990, then declined until 1992, and rose again in 1993. Foreign investment outlays in terms of dollars and number of acquisitions and establishments for the years 1989 through 1993 are: 1989 - $71.2 billion, 1580; 1990 - $65.9 billion, 1617; 1991 - $25.5 billion, 1091; 1992 - $15.3 billion, 941; and, 1993 - $26.2 billion, 1009.

[12] While the statistics presented in the text represent the foreign direct investment position in U.S. affiliates, the total assets of non-bank U.S. affiliates increased from $214.2 billion in 1980 to over $1.4 trillion in 1989 (Survey of Current Business, 1981, 1985, 1991, 1993). If only 10% of taxes were being avoided by these affiliates, using the "Professor Wheeler Theorem" mentioned by Duncan (1992), the total tax revenues lost would be approximately $4.28 billion annually. ($1,400,000,000,000 * 9% expected return on assets * 34% tax rate * .10 lost = $4,284,000,000 lost tax revenues.)

[13] Income fell from $2.9 billion in 1990 to a loss of $1.8 billion in 1991 before rising again in 1992 to $2.5 billion.

[14] The up and down pattern of income continued into the 1990s with income reported as $57.7 billion in 1990; $51.2 billion in 1991; and, $50.7 billion in 1992.

[15] Ross (1990) went on to state that

> [t]he highly nationalistic approaches taken by the United States with respect to international tax matters is changing the climate for the taxation of international transactions on a worldwide basis. As the United States repeatedly makes clear its willingness to jettison unilaterally traditional international norms and to ignore obligations under tax treaties, other countries have strengthened their taxing rules and undoubtedly will continue to do so. While no other country has gone as far as the United State, there have been a number of recent developments suggesting change is in the wind.
>
> For example, the Japanese have passed Section 482-type legislation and are beginning to consider

> the issue of whether any of their multinationals are allocating too much income abroad. Germany and the United Kingdom have also begun to take a more aggressive position on the income tax subject of their tax systems. Even smaller countries that have traditionally been centers for international business such as the Netherlands and Switzerland have become more restrictive in their treatment of multinational enterprises in response to U.S. concerns. Competent authority proceedings between the United States and other governments pursuant to bilateral tax treaty provisions are only marginally effective in mitigating double taxation problems. These developments will undoubtedly lead to higher tax costs on international business activities, which can only mean a curtailing of economically beneficial transactions that might otherwise take place (p. 336).

Taylor, *et.al.* (1991) argue that the more stringent reporting requirements and tougher IRS actions in response to failure to comply with those requirements are aimed primarily at Japan and that these changes in the law have the potential to be used as a trade weapon with fines and penalties forcing offending companies out of the U.S. marketplace.

[16] Article 1, Section 9 of the Constitution states:

> No Capitation, or other direct, Tax shall be laid, unless in Proportion to the Census or Enumeration herein before directed to be taken.

[17] To illustrate the difficulty of such a plan, imagine that the Congress wanted to raise $100,000 in income tax. Also imagine that the United States at that time was composed of only three states -- Virginia, Pennsylvania, and South Carolina -- with populations of 20,000, 30,000, and 50,000

citizens respectively. Under the direct apportionment plan required by the Constitution, because the 20,000 citizens of Virginia represented 20% of the total United States population of 100,000 citizens, 20% of the $100,000, or $20,000, of the taxes the Congress wanted to raise would have had to come from Virginia.

In a similar manner, 30% or $30,000, of the desired income tax collection would have had to be paid by the 30,000 citizens of Pennsylvania and the 50,000 citizens of South Carolina would have paid the remaining 50%, or $50,000.

Imagine also that the total taxable income was $500,000 in Virginia, $300,000 in Pennsylvania, and $200,000 in South Carolina. Because the citizens in Virginia had a combined taxable income of $500,000, the average tax rate in Virginia would be 4% (20,000/500,000). Citizens in Pennsylvania would pay income taxes at an average rate of 10% (30,000/300,000) and citizens in South Carolina would pay at an average rate of 25% (50,000/200,000) *(See Appendix Figure 5)*.

[18] The income tax rate in 1861 was 3% on incomes over $800. The following year, the rate changed to 3% on incomes between $600 and $10,000 and 5% on incomes over $10,000.

[19] These three alternatives correspond roughly with the economist's terms of capital export neutrality -- allowing a credit for foreign taxes paid; capital import neutrality --

exempting foreign income from tax; and national neutrality -- allowing a deduction for foreign taxes paid (*See Appendix 6*).

Under the view of capital export neutrality (CEN), a company would not be concerned about taxes in making a decision whether to locate its assets and operations in the United States or abroad because the company would pay the same amount of United States income tax regardless of where its assets were located and where its income was earned. Companies would not be unduly encouraged to locate their assets in low-tax countries because the amount of tax credit available to apply against their United States taxes would be the small amount of taxes paid. Nor would they be discouraged from locating in a high-tax country because the tax credit allowed in this case would be large.

Capital import neutrality (CIN), by exempting foreign income from taxes, is seen as giving U.S. multinationals a fairer chance of competing with local companies in countries with low-tax rates and with multinational companies of countries which can locate their assets and earn income without being taxed at home on their worldwide income. Consider, for example, a U.S.-based affiliate and a Canadian-based affiliate located in such a low-tax country. The U.S. company sees itself as being at a competitive disadvantage even if it faces the same wage, material, overhead, and

foreign tax rate as its Canadian competitor because it also faces the burden of U.S. tax on its *worldwide* income while its competitor does not have to bear this additional burden since Canada follows the "territorial" rule of exempting foreign income from taxation.

National neutrality (NN) would encourage U.S. companies to invest in the United States because the income taxes paid abroad would be viewed as a cost of using that capital abroad. Thus, such taxes would be mere deductions to arrive at taxable income; not credits against U.S. income taxes payable. Combined with a removal of the current deferral provisions and the replacement of the current foreign tax credit with a simple deduction, U.S. tax revenues collected on foreign income should rise.

[20] Heck (1990) testified that

> [i]n cases reviewed by the Subcommittee, for instance, a foreign parent sold television sets to an unrelated distributor for $150, while its [U.S.] subsidiary paid $250 for the same model.... One foreign automobile manufacturer sold cars to its U.S. distributor at prices averaging $800 more than identical cars shipped to its Canadian distributor.... In one case, the IRS witnessed hundreds of trucks being unloaded at the dock for both a controlled and an unrelated domestic distributor. The trucks were identical except that the vehicles being delivered to the domestic distributor had some cosmetic differences. Through the use of Customs import invoices, the IRS learned that the foreign-owned subsidiary was being charged almost $200 more per truck for shipping than the amount charged to the domestic company (p.6).

To the extent that companies are able to use one value for customs and another for inventory, their overall tax liability would be reduced. By declaring a low value as goods enter the U.S., the customs duty collected would be kept to a minimum. By increasing the value of those goods as they entered inventory, in addition to possibly improving the appearance of the balance sheet, the company would report a higher cost of goods sold, resulting in a lower net income, and potentially a lower income subject to U.S. tax. By requiring that the value declared for inventory purposes be no greater than that used for customs, the company using a low customs value and paying a low duty would face having a lower inventory value, a lower cost of goods sold, a higher net income, and a potentially higher income subject to U.S. income tax. In a similar manner, the company that used a higher value for customs in order to report a higher inventory value would report a higher cost of goods sold, a lower net income, and face a potentially lower U.S. income tax. However, that company would be forced to pay a larger customs duty as the goods entered the U.S.

[21] This provision was soon dubbed the "super-royalty" and many taxpayers and U.S. treaty partners questioned whether this provision violated the arm's length standard of establishing transfer prices *(See Langbein, September 18, 1989; Wright and*

Clowrey, July 27, 1987).

[22] The White Paper (p. 22) shows the results of several studies conducted between 1973 and 1987 on the choice of pricing methods. The percentages of cases in which each method was used ranged as follows: CUP method, 15-41%; Resale method, 7%-14%; Cost Plus, 7-30%, and Other methods, 32-47%.

[23] On the subject of the priority of the three methods as presented in Section 482, Berry (1989, p. 742) stated,

> [o]ne concern expressed by the White Paper is the basis for these assigned priorities of the regulations. It is the priorities among the first three that are particularly interesting. Because of these priorities, the three methods have come to be regarded as *different* methods or approaches for the determination of a correct allocation.
>
> In economic terms, however, these methods are more correctly viewed as fully consistent procedures for doing exactly the same thing -- estimating the prices that would have prevailed had the controlled parties been independent and dealing at arm's length. The 'best' method will depend upon the particular circumstances which surround these transactions, and the White Paper is correct in questioning the priority which the regulations, in their current form, outline.

[24] Stoffregen, Higinbotham, Asper, and Wexler (1989) in discussing the provisions of the BALRM approach dubbed it with the description, "one step forward, two steps back" -- a description that seems to express the opinions of many who have written on the White Paper.

[25] A 25% foreign-owned corporation is any corporation for

which at least 25% of

> "(A) the total voting power of all classes of stock of such corporation entitled to vote, or (B) the total value of all classes of stock of such corporation is owned at any time during the taxable year by 1 foreign person..." (Section 6038(A)(c)(1)). This ownership may be direct or indirect.

[26] Section 6503(k)(2)(A) states that

> The term "designated summons" means any summons issued for purposes of determining the amount of any tax imposed by this title if (i) such summons is issued at least 60 days before the day on which the period prescribed in section 6501 [Limitations on Assessment and Collection] for the assessment of such tax expires (determined with regard to extensions), and (ii) if such summons clearly states that it is a designated summons for purposes of this subsection.

[27] The Federal short-term rate is defined for purposes of determination of rate of interest calculations in Section 6612(b):

> The Secretary shall determine the Federal short-term rate for the first month in each calendar quarter (Section 6612(b)(1)).
> The Federal short-term rate for any month shall be the Federal short-term rate determined during such month by the Secretary in accordance with section 1274(d). Any such rate shall be rounded to the nearest full percentage (or, if a multiple of 1/2 of 1 percent, such rate shall be increased to the next highest full percent) (Section 6612(b)(3)).

[28] The term "taxable period" is "(i)in the case of any tax imposed by subtitle A, the taxable year, or (ii) in the case of any other tax, the period to which the underpayment relates" (Section 6612(c)(3)(b)(i-ii)).

[29] From the question and answer period following Mr. Wilensky's prepared remarks.

[30] Among the many cases in which proper allocation has been the major issue, a few of the cases with differing circumstances include: *Foglesong v. Comr.* (35 T.C.M. 1309 (1976), rev'd and rem'd, 621 F.2d (7th Cir. 1980); on remand, 77 T.C. 1102 (1981), rev'd 691 F.2d 848 (7th Cir. 1982) in which an individual taxpayer established a corporation with himself as an employee and carried on through that corporation sales activities that had previously been conducted by him as an individual; *Keller v. Comr.* (77 T.C. 1014 (1981) aff'd subsequent to the opinion, 723 F.2d 58 (1983)) in which an individual taxpayer set up corporation with himself as an employee and made the corporation a partner in his place in a medical partnership; *T.R. Vardeman, Sr.* ((DC) 62-2 USTC, paragraph 1971) in which partnership members were owners of a corporation; *Asiatic Petroleum Co. v. Comr.* (31 B.T.A. 1152 (1934), aff'd, 79 F.2d 234 (2d Cir. 1935) cert. denied, 296 U.S. 645 (1935)) in which a U.S. corporation sold at cost appreciated stock to a related foreign corporation which immediately resold the stock with a resultant gain; *Palo Alto Town & Country Village, Inc.* (565 F.2d 1388 (9th Cir. 1952), aff'g, rev'g, and rem'g 32 T.C.M. 1048 (1973)) in which taxpayer with net operating loss carryover sold timber below

cost to related entity and then immediately bought it back at fair market value.

[31] As discussed elsewhere in this study, this formula is usually based upon factors such as payroll, property, and sales within a given state as a proportion of total payroll, property, and sales for the related corporations.

[32] See *Container Corp. of America v. Franchise Tax Board*, 77 L. Ed. 2d 545 (1983).

[33] This transfer was made under Section 112 which is the predecessor to today's Section 351.

[34] The parent would not have derived any tax benefit if it had sold the stock at a loss because its net capital loss for the year had already exceeded the amount deductible.

[35] See also *Foster v. Commissioner* (756 F.2d 1430 (9th Cir. 1985) and *Ruddick v. Commissioner* (643 F.2d 747 (Cl. Ct. 1981).

[36] This was the first case in which the Berry ratio -- the ratio of gross margin to operating expenses -- was used by the IRS. (Granfield and Weston, 1990, p. 1193)

[37] In the contract manufacturer approach, the problem is to establish an arm's length price for the transfer of either an intangible or of a product. This approach is most frequently used when manufacturing intangibles have been transferred to an overseas affiliate and the U.S. parent purchases most of

the affiliate's output for resale to its unrelated customers. After allowing a reasonable markup on manufacturing costs to the affiliate, the remaining income is allocated to the U.S. parent. BNA notes in footnote number 339.14 that

> [t]his 'contract manufacturer' approach was the basis for the Section 482 adjustment in *Lilly*..., and ... is often employed by IRS international examiners despite the mandate of Regs. Section 1.482-2(d) that comparable uncontrolled transaction data be used whenever feasible. Under these regulations, any allocation must be based on the hypothetical charge that would have been made in an uncontrolled transaction. The 'cost plus' method, a variation of this, allocates to the user a mark-up on costs incurred to the exclusion of any of the profit attributable to the use of the intangible (BNA, p. 164).

[38] The IRS modified the upper end of the suggested range downward to $5.80 when it discovered that the upper end of its proposed range would result in an operating loss for B&L Ireland.

[39] The products transferred were: (1) Aldactone and Aldactazide in 1969, (2) Banthine, Probanthine, and Dartal in 1969, (3) Flagyl in 1970, (4) Lomotil in 1970, (5) Serenace in 1971, and (6) Ovulen and Demulen in 1971.

[40] Arpan (1972) suggests the existence of a cultural bias in the selection of the method of pricing. He found America, British, French and Japanese firms tended to select cost-based methods while Canadian, Italian, and Scandinavian firms selected market-based methods. Choi and Mueller (1984)

suggest the decision on method appears to be affected by the enterprise's "organizational philosophy, its size, its degree of international involvement, and its cultural milieu (p. 443)."

[41] The problem also exists when the divisions are located in different states and the results of operations are subject to taxes within those states.

[42] Some countries have become known as tax havens due to their low tax rates or liberal taxing policies. However, mitigating factors indicate a lessening of the importance of these havens. First, beginning in the early 1960s, U.S. tax legislation has been enacted to address the problem of tax havens. Second, transactions through such tax havens have been shown to be less than might be expected. Vernon (1977, p. 243) reported that, in 1968, 12% of U.S. foreign profits were from tax havens and Kopits (1976, p. 795) reported that less than 10% of royalties remitted to the U.S. flowed through tax-haven subsidiaries.

[43] Some of these idioms might be easily decipherable, although unfamiliar -- such as to hop on something like "a chicken on a Juney bug," "the early bird gets the worm," or to be "in a pinch." Others are more elusive -- such as to not know someone from "Adam's left ox" or to appreciate something like "white on rice."

[44] Because of the relatively high rate of return and relatively low risk associated with portfolio investment in the United States, O'Connor (1989) dubbed the U.S., "Fortress America."

[45] Supporting this view are statistics from Survey of Current Business (Bargas and Lowe, 1994) showing that in 1993, U.S. direct investment abroad was greatest in the United Kingdom, Canada, Germany, Switzerland, and Japan. Japan, the United Kingdom, the Netherlands, Canada, and Germany were the countries accounting for the largest percentages of foreign direct investment in the U.S.

[46] Ragazzi stated in 1973 that audits were less thorough in European countries and information generated was, therefore, less reliable than that produced in audits in the United States. This would lead to more direct investment by U.S. firms in Europe (because they can control the flow and accuracy of information provided) and more portfolio investment by Europeans in the U.S. market where short-term risk to portfolio investors is lessened by more efficient audits.

[47] This also occurs as previously closed markets become open to new products. The recent opening of new markets in Eastern Europe is but one example.

[48] Consider, for example, the smaller automobiles, the

miniaturization of computer components, and concentrated laundry detergents that have so greatly affected U.S. markets.

[49] This case was heard by the Supreme Court over the advice of the Solicitor General of the United States as stated in an *amicus curiae* brief. The Solicitor General pointed out that California had adopted legislation in October of 1993 under which foreign corporations may elect to use a "water's-edge method" rather than be required to use a worldwide combined reporting method. With the change in legislation, California had "'essentially an arm's-length separate-accounting method, and thus, generally conforms to federal and international practice'" ("International Journal," p. 685).

[50] This worldwide viewpoint can be contrasted with the territorial viewpoint of countries such as Switzerland and Venezuela where taxes are collected only on income earned within national borders (Choi and Mueller, 1984).

[51] Overseas branches and divisions of multinationals are treated as simple extensions of the U.S. parent. Income (or loss) from the branches and divisions is combined with that from the domestic operations and is taxed currently by the U.S. government. Parent companies with subsidiaries, however, are generally permitted under Sections 901 and 902 of the Code (U.S. Tax Code) to defer taxation of income from their overseas subsidiaries until those earnings have been remitted

to the parent in the form of dividends.

[52] Haas (1988), comparing certain characteristics of tax policies of the Netherlands, Germany, Japan, and the U.S., found that the MNE of the Netherlands have a "strong advantage" because of the use of a "territorial" tax system with foreign-source income exempt from tax if that income is subject to foreign income tax. He found Japan and Germany "following closely behind", with the U.S. "...handicap[ping] its own multinationals by imposing severe constraints and heavier burdens on foreign-source income, due to a sweeping policy of global taxation (p. 73)."

[53] Hunter's graphs are taken directly from the published House Report. It is easy to see why this type of information, presented less than a month after U.S. corporate income tax were due and less than a week before individual income tax returns were due, could be somewhat inflammatory.

[54] Granfield and Weston recognized that factors extraneous to the cost of the automobile -- factors such as transportation, insurance, duties, etc. -- would be different for automobiles sold in the two different areas. They, therefore, created a "net base" by removing the distribution costs and taxes from the price to Japanese dealers and then added relevant export and specification costs to that net base to arrive at a derived F.O.B. price for U.S. dealers. For purposes of their

study, Granfield and Weston compared this derived F.O.B. price to the actual F.O.B. price.

[55] In discussing this with Japanese managers, fundamental beliefs about management style and profit-taking came to light. As a group, the Japanese managers

> ...felt that the firm should be structured with significantly lower gross margins than is normally found in the U.S. They perceive that distribution should be a low margin, competitively priced, high volume business. They were quite critical of U.S. distributions that had high gross margins, large expenses, and relatively high prices.
>
> By keeping margins deliberately low, they were convinced that the distribution firm is compelled to realize that the only way to enhance profitablilty is to increase size or volume and market share. To do so, one must be chiefly concerned with attracting and preserving one's customer base through lower prices and effective service to the final customer....
>
> With regard to a reasonable profit split between the parent and the distribution subsidiary, here, too, their views were quite straightforward. They see the parent, at least in this industry [automotive], as having two substantial risks. These are essentially the risks involved with the fixed or sunk costs associated with R&D and manufacturing facilities broadly defined. The subsidiary is seen as having a much smaller level of inventory risk....
>
> Accordingly, they [Japanese managers] argued that a one-third/two-thirds profit split favoring the parent corporation was reasonable. To the extent that any section 482 adjustment substantially altered this distribution, they sincerely believed that this allocation was an inappropriate interference with their managerial discretion (p. 1197).

[56] The IRS defined a foreign-controlled corporation (FCC) as a "U.S. company 50% or more owned by foreign shareholders" and

a U.S.-controlled corporation (USC or USCC) as a "U.S. company other than FCC".

[57] It might be of interest to examine whether the decrease in tax rate resulted in an overall increase in compliance with the tax regulations.

[58] As Professor Wheeler points out,

> " (t)o appreciate the magnitude of a 565.5 percent annual rate of return, if an individual deposited $2,000 in an IRA each year for 10 years at this rate of return, he would have over $80 billion and be the wealthiest person in the U.S."

Compare this to the IRA earning an annual rate of return equal to the highest rate earned by the parent during these five years (6.7%) which would be worth only slightly more than $29,000 including the $20,000 invested by the owner during that time period.

[59] In Barclay Bank PLC (*Slip Opinion, June 20, 1994*), *amicus curiae* briefs filed by the Confederation of British Industry and Reuter Limited indicate the attitude of, at least, some possible trading partners in stating, respectively, that "'[i]f allowed to stand, California's aberrant system will continue to act as an irritant until other nations retaliate, not just against California but against the United States as a whole," and "if the states are free to erect a substantial administrative obstacle to foreign firms that wish to do business within their borders, that should be made clear

promptly so that multinational corporations can plan their operations accordingly" (*"International Journal," 1994, p. 685*).

[60] Bucks and Mazerov (1993) point out that staff of the Multistate Tax Commission have estimated that states lose 22 cents for every tax dollar lost at the federal level. If the federal tax loss from MNEs is as low as $10 billion, then the state loss would total $2.2 billion. If the federal loss is $24.85 billion as estimated by Hunter *(See Appendix 2)*, the state loss would be $5.467 billion.

[61] The term "net profit" is used for the net income, net loss, or zero results reported on the income statement for the time period under examination.

[62] *FASB 14*, "Financial Reporting for Segments of a Business Enterprise" requires information to be reported about the foreign operations of an entity when either of the following conditions exist:

> a. Revenue generated by the enterprise's foreign operations from sales to unaffiliated customers is 10% or more of consolidated revenue as reported in the enterprise's income statement.
>
> b. Identifiable assets of the enterprise's foreign operations are 10% or more of consolidated total assets as reported in the enterprise's balance sheet (*FASB 14*, paragraph 32).

Additionally, the Directories used for classification purposes also generally use a 10% level of discrimination.

Therefore, an enterprise may have international operations that do not meet the 10% level and still be considered a DC.

63. The DCs may have an interest in a multinational that does not exceed the 10% limits of FASB 14 (See previous footnote).

64. A survey included in the White Paper shows the importance of annual reports to the identification and development of Section 482 cases. Of those reporting, 19% considered the income tax note, 31% considered the product line segment information note, 36% considered the geographic area segment note, and 14% considered other portions of the annual reports in either identifying or developing cases.

65. In looking at businesses acquired and established by foreign investors between 1983 and 1989, the dollar outlays presented by Bezirganian (1990) show that the percentage of total dollar outlays represented by acquisitions ranged from a low of 59.9% in 1983 to a high of 89.2% in 1988. Thus, acquisitions accounted for between 38.6% and 61% of the total number of acquisitions and establishments.

66. Age will be defined in this study as the age of the entity dating from incorporation or ownership as self-reported or as reported in the directories used. (Also see Chapter 4 for results without the covariate factor of age and Chapter 5 for limitations on the study based on the factor of age.)

[67.] Average total assets is calculated:

(Prior Year-End Total Assets + Current Year-End Total Assets)/2.

The 1990 fiscal year financial statements were not available for six companies. For these companies, the total assets as reported on the 1991 balance sheet was used as a surrogate for average total assets.

[68.] While it would have been more desirable to have the results of U.S. operations of USMNEs for all measures, the results are publicly available for only three measures - sales, identifiable assets, and operating profit. Therefore, many measures were available only for worldwide operations of USMNEs. In order to maintain consistency among the hypotheses being tested, for hypotheses involving these three measures, two hypotheses were tested - **Hypothesis A** tested for differences among the means of worldwide operations of USMNEs, U.S. operations of USOFMNEs, and U.S. operations of DCs. **Hypothesis B** tested for differences among the means of U.S. operations of USMNEs, USOFMNEs, and DCs.

[69.] As will be discussed later, there were nine companies in the USOFMNE group which were foreign-parent corporations. The annual reports of these nine companies contained the combined results of operations and financial positions of both the foreign parent and all its overseas operations. Like the

USMNEs, while it would have been desirable to have U.S. operations separated for all measures, only sales, identifiable assets, and operating profits in geographic segments constituting 10% or more are reported. Therefore, the hypotheses were tested both with these nine companies included and excluded.

70. As pointed out earlier, ideally, the comparison would be among the U.S. operations of the groups. However, a breakdown of such data is not available. Therefore, this comparison uses the worldwide operations of USMNEs.

71. As discussed earlier, for the analyses including the nine foreign parent companies, the ratios will include the worldwide results of those nine companies.

72. Current worldwide income tax will include either current U.S. federal, U.S. state and local income taxes, and foreign income taxes or current U.S federal, state, and local income taxes depending upon the operations of the corporation.

73. Total assets are used for Hypothesis 7a; identifiable assets are used for Hypothesis 7b. The footnote on geographic segments details the identifiable assets of each segment and then gives a single elimination figure to arrive at the total assets as reported in the financial statements. In addition to the fact that the proportion of total assets that are employed by USMNEs and FMNEs in their U.S. operations is not

available from the information supplied, the identifiable assets is a more appropriate figure because it represents the assets identified as employed in the U.S. and compares those assets to those identified as employed worldwide.

74. For DCs, because they have no identified overseas operations, total assets and identifiable assets are the same.

75. Although most USOFMNEs were domestic operations, eight contained footnotes identifying geographic segments of operations.

76. *Minitab* encourages the use of GLM or regression (*REGRESS*) rather than analysis of covariance (*ANCOVA*) for non-orthogonal designs; i.e., designs with missing data (*Minitab*, pp. 8-22 to 8-40). Because many companies in this study did not supply all data, GLM was used.

77. For example, only seven of the companies supplied foreign and domestic employment figures.

78. The SIC codes included the following:

Industry 2800. Chemicals & Allied Products
Industry 2810. Industrial Inorganic Chemicals
Industry 2820. Plastic Mail, Synthetic Resin/Rubber, Celluloids (No Glass)
Industry 2821. Plastics, Materials, Synthetic Resins & Nonvulcan Elastomers
Industry 2833. Medicinal Chemicals & Botanical Products
Industry 2834. Pharmaceutical Preparations
Industry 2835. In Vitro & Vivo Diagnostic Substances
Industry 2836. Biological Products (No Diagnostic Substances)
Industry 2840. Soap, Detergent, Cleaning Preparations, Perfumes, Cosmetics
Industry 2842. Specialty Cleaning, Polishing and Sanitation Preparations

Industry 2844. Perfumes, Cosmetics & Other Toilet Preparations
Industry 2851. Paints, Varnishes, Lacquers, Enamels & Allied Products
Industry 2860. Industrial Organic Chemicals
Industry 2860. Industrial Organic Chemicals
Industry 2870. Agriculture Chemicals
Industry 2890. Miscellaneous Chemical Products
Industry 2891. Adhesives & Sealants

79. One of the companies omitting financial data from its report may be indicative of the condition of some of the other non-reporting companies. Exovir stated:

> The Company's Annual Report on Form 10-K is being filed without financial statements. Because of the company's deteriorating financial condition, the Company is unable to defray the cost of an audited financial statement and has, therefore, omitted financial statements from this report. If sufficient funds become available to the Company in the future, the Company intends to prepare audited financial statements (p.3).

80. The remaining 50 (14.9%) companies reported having zero sales in 1991.

81. The USOFMNE group included nine companies that were foreign parent companies (FP), rather than USOFMNE. Because of their size and potential impact, analyses were performed both including and excluding these nine companies.

82. As mentioned in the previous footnote, nine of the companies included were foreign parent corporations that were required to file with the SEC. Total sales, both in the U.S. and abroad, for these foreign corporations are included in this figure.

83. This figure includes companies that reported no income tax expense and companies that reported negative income tax expense (credit balance).

84. Most companies included a footnote to the financial statements for income taxes detailing current and deferred portions. For those companies that did not include such a note but whose income statements showed a net loss and no income tax expense, the current portion was deemed to be zero. Those companies that did not include a footnote and whose financial statements showed either income or income tax expense were not included in the consideration of current income tax.

85. There are a few accounting procedures that differ from the reporting of other companies. For example:

- On the balance sheet, accumulated losses are presented as a "deficit accumulated during the development stage" rather than as deficit retained earnings.

- For the income statement, revenues and expenses for the period are presented together with the cumulative totals for these items since the inception of the company.

- For the statement of cash flows, current period cash flows are presented together with cash

flows from inception.

- The financial statements must be identified as being those of a development stage company.

86. Because many companies reported zero sales figures and a few did not report cost of goods sold, only 279 companies were included in the analysis of all companies. After development stage companies were eliminated, 259 companies remained; after foreign parents were eliminated, 267 companies remained; and after both DSEs and FPs were eliminated, 251 companies were remaining which had reported both sales and cost-of-goods-sold.

87. *FAS 14* requires segment reporting in three situations:

1. When the revenues of a segment (to outsiders and other segments of the enterprise) are at least 10% of the revenues of all the enterprise's segments;

2. When the operating income of a segment is at least 10% of the total operating income reported by all profitable segments or when the operating loss of a segment is at least 10% of the total operating losses reported by all segments reporting losses; or

3. When the identifiable assets of a segment (the tangible and intangible assets either used exclusively by the segment or the portion of jointly used assets allocated to it) are at least 10% of the identifiable assets of all the

enterprise's segments.

[88.] Even though the actual percentage of foreign ownership was not determinable, only three of the companies classified as domestic and two classified as USOFMNEs (with the exception of the foreign parent companies) reported geographic data.

[89.] Of the USMNEs included in this study, 92 reported both domestic and foreign sales in the geographical segment note. Domestic sales as a percent of the sum of domestic and foreign sales (before eliminations) ranged from 5.9% to 98.6% with an average of 66.2%. Eighty-seven USMNEs reported both domestic and foreign assets. Domestic assets as a percent of the sum of domestic and foreign assets (before eliminations) ranged from 13.1% to 95.2% with an average of 65.0%. When USMNEs that did not exceed 50% abroad for both sales and assets were eliminated, nine USMNEs remained.

The nine foreign parent companies included in the USOFMNEs reported domestic sales ranging from 9.8% to 81.6% of the sum of domestic and foreign sales (before eliminations) and domestic assets ranging from 5.6% to 83.2% of the sum of domestic and foreign sales and assets (before eliminations). One other USOFMNE other than FPs included a geographical segment note; this company reported domestic (U.S.) sales of 0% and domestic assets of 18.3%. None of these companies were excluded for this part of the study, but rather were included

or excluded depending upon the level of inclusion being tested.

90. Even when the company that reported zero COGS for its sales was removed, the mean for USOFMNEs remained the lowest of the three (ratios of .5048, .5267, .5147, .5490 for USOFMNEs) for the four levels of inclusion.

91. Mean operating income (expressed in dollars) is positive because the large positive operating incomes of some companies outweigh the operating losses of other companies resulting in a positive mean for the group as a whole. However, the calculation of the mean operating-income ratio gives equal weight to the ratio (operating income to sales) without regard to the size of the positive or negative dollar amounts that entered into the calculation. An individual company's positive or negative result is less likely to swamp the results of other companies.

92. The same company that reported a zero COGS also was an extreme outlier on this measure, reporting a negative OI ratio of over 7000%. However, even with the removal of this extreme value, the GLM with covariates continued to yield statistically significant results for all companies ($F=4.65$; $p<.01$) and when FPs were removed ($F=7.66$; $p<.01$). With the removal of DSEs and with the removal of both DSEs and FPs no significance was found. Removing the single company increased

the mean from -322.2 to -42.75 for all companies and from -492.8 to -66.88 with foreign parents removed (the differences remained significant at the .05 and .01 level, respectively). No significant differences were found at any level of inclusion for either GLM or ANOVA when two groups were used.

93. The difference was not statistically significant for the three-group analysis but was statistically significant for the two-group analysis.

94. With the removal of the one large outlier, the Berry ratio changed to 1.205 for USOFMNEs and 1.826 for MNEs; the ratio of operating expenses to sales changed to 45.03 for USOFMNEs and 8.28 for MNEs.

95. Lowry (1990) gives four specific examples of how importers avoid U.S. tax:

> (1) overpricing of [good] to the controlled U.S. importers ; (2) overcharging for ocean freight...; (3) overcharging for financing shipments...; [and] (4) overcharging on currency exchange (pp.4-5).

Although Lowry was specifically addressing Japanese manufacturers of automobiles and their operations for importing and distributing those automobiles in the U.S., the examples are not restricted to this particular group of enterprises.

96. When the single company with an extremely negative ratio was removed, the means continued to be negative and the

differences among the means of the three groups after adjusting for the covariates were significant for all companies ($p<.05$) and with the FPs removed ($p<.01$). However, the means were considerably less negative, increasing from -335.0 to -44.47 for all companies and from -523.5 to -71.24 without FPs. Differences were not significant for three groups without DSEs or without DSEs or FPs. Differences were not significant between MNEs and DCs at any level of inclusion.

97. A small number of the DCs had limited operations abroad. However, all fell below the 10% level of ownership in their own reports and/or in the **Directories**.

98. For companies that have only domestic operations, their "worldwide operations and assets" would be their domestic operations and assets.

99. "Over 50% USMNEs" have been defined as USMNEs with more than 50% of their assets and more than 50% of their sales in foreign operations as reported in the note on geographic segments.

100. The term, "net profit", is used for net income (credit balance), net loss (debit balance), and zero results on the income statement.

101. The IRS and the Congressional hearings have focused primarily on transfer pricing irregularities and

irregularities in cost allocation policies which would show up in COGS and operating expenses, respectively. The effect of both would already be reflected in income before income tax.

[102.] As shown in (*Appendix 28*), for all companies, the mean ratios of worldwide income tax expense to net sales were -0.0069 for USMNEs, 0.0090 for USOFMNEs, -0.0050 for MNEs, and 0.0089 for DCs. The negative ratios for USMNEs and MNEs are the result of companies reporting current income tax refunds due; in particular, one company with a relatively large refund and a very small sales figure for 1991. Six USMNEs and ten DCs reported a negative current worldwide income tax expense (credit balance). With the removal of these sixteen companies' results, the means for all remaining companies were 0.03519 for USMNEs, 0.00897 for USOFMNEs, 0.03189 for MNEs, and 0.01779 for DCs. The results were significantly different at the .05 level for all levels of inclusion for three groups but were not significantly different for two groups without these sixteen companies.

[103.] In many cases where a net loss and no income tax expense were reported, the companies had operating loss carryforwards. Frequently these companies did not report the amount of carryforward that arose during the current year. In these cases, zero current tax was reported.

[104.] For companies with only domestic operations, worldwide and domestic figures will be the same.

[105.] Worldwide assets (financial statement total assets) include corporate assets that are not identifiable with either foreign or domestic operations; worldwide sales (financial statement sales) exclude sales among affiliates; and worldwide operating profit (financial statement operating profit) excludes profits from transactions with affiliates.

[106.] Not all USMNEs and USOFMNEs reported all data needed for these calculations. Each calculation was done for all companies that reported the two required data for that particular calculation. Therefore, the means for U.S. and foreign here may differ from those reported in the Appendix. Only three DCs reported geographic segment data. With so small an *n* for this group, finding a significant difference on any "Foreign" measure was difficult. Because of the small number of DCs, attention will focus primarily on the results of multinationals.

[107.] In addition to segmental operating income, FASB 14 also permits companies to report other measures of profitability such as income before income tax, as long as the method of determining that profitability measure is disclosed. One company in the study reported segmental after-tax earnings.

[108] The number of employees -- instead of total wages and salaries -- was used for formulary apportionment for two reasons. First, it eliminates the effect of international differences in labor rates. Second, none of the companies included in this study reported labor costs by segment whereas at least seven companies disclosed the number of employees by geographic segments.

[109] Although Milton was discussing California's worldwide unitary tax system, by implication, he also addressed a possible U.S. worldwide unitary system.

[110] An OP ratio of -42.75 was found even when the largest outlier for both COGS ratio and OP ratio were removed.

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Appendix 1 A.
Effect of Taxes
When Different Political Jurisdictions Have Similar Tax Rates

Situation One.
Assume that Company A and Company B, which are related parties, have total sales to outside customers of $100,000; the goods are sold to unrelated parties at cost plus 66.67%. The cost to produce the goods amounts to $60,000. Company A manufactures the goods and has the choice of selling to Company B or to outside customers. Both Company A and Company B are located in political jurisdictions where the marginal tax rate is 40%. In this situation, where both related Companies are subject to the same tax rate, looking at only the income tax effect, the Companies are indifferent as to which of them makes the sale because the total tax will be $16,000 regardless of which company sells to outside customers and the transfer price effect will be zero.

*Condition 1 All outside sales made by Company A [60,000 + (60,000 * 66.67%)]; no sales by Company B.*

*Condition 2 Company A sells (transfers) all goods to Company B at cost plus 66.67% (same price charged to outside customers); [60,000 + (60,000 * 66.67%)].*

*Condition 3 Half of outside sales made by Company A [30,000 + (30,000 * 66.67%)]; Company A transfers half of the goods to Company B at cost (30,000).*

*Condition 4 Half of outside sales made by Company A [30,000 + (30,000 * 66.67%)]; Company A transfers half of goods to Company B at cost plus 50% [30,000 + (30,000 * 50%)] and Company B makes the remaining outside sales.*

*Condition 5 Half of outside sales made by Company A [30,000 + (30,000 * 66.67%)]; Company A transfers half of goods to Company B at cost plus 10% [30,000 + (30,000 * 10%)]*

Appendix 1 B.
Effect of Similar Tax Rates
Situation One - Conditions 1-5

	Condition 1	*Condition 2*	*Condition 3*	*Condition 4*	*Condition 5*
Company A					
Sales (outside)	*$100,000*	*$ 0*	*$ 50,000*	*$ 50,000*	*$ 50,000*
Sales (inside)	*0*	*100,000*	*30,000*	*45,000*	*33,000*
Total Sales	*$100,000*	*$100,000*	*$ 80,000*	*$ 95,000*	*$ 83,000*
COGS	*60,000*	*60,000*	*60,000*	*60,000*	*60,000*
Gross Margin	*$ 40,000*	*$ 40,000*	*$ 20,000*	*$ 35,000*	*$ 23,000*
Tax Rate	*40%*	*40%*	*40%*	*40%*	*40%*
Tax Effect	*$ 16,000*	*$ 16,000*	*$ 8,000*	*$ 14,000*	*$ 9,200*
Company B					
Sales (outside)	*$ 0*	*$100,000*	*$ 50,000*	*$ 50,000*	*$ 50,000*
Sales (transfer)	*0*	*0*	*0*	*0*	*0*
Total Sales	*$ 0*	*$100,000*	*$ 50,000*	*$ 50,000*	*$ 50,000*
COGS	*0*	*100,000*	*30,000*	*45,000*	*33,000*
Gross Margin	*$ 0*	*$ 0*	*$ 20,000*	*$ 5,000*	*$ 17,000*
Tax Rate	*40%*	*40%*	*40%*	*40%*	*40%*
Tax Effect	*$ 0*	*$ 0*	*$ 8,000*	*$ 2,000*	*$ 6,800*
Total Company					
Sales (outside)	*$100,000*	*$100,000*	*$100,000*	*$100,000*	*$100,000*
Tax Effect	*$ 16,000*	*$ 16,000*	*$ 16,000*	*$ 16,000*	*$ 16,000*

Appendix 1 C.
Effect of Differential Tax Rates

Situation Two.
Assume that Company A and Company B, which are related parties, have total sales to outside customers of $100,000; the goods are sold to unrelated parties at cost plus 66.67%. The cost to produce the goods amounts to $60,000. Company A manufactures the goods and has the choice of selling to Company B or to outside customers. Company A is located in a political jurisdiction where the marginal tax rate is 40%; Company B is located in a political jurisdiction where the marginal tax rate is 25%. In this case, because the related Companies are located in areas with different tax rates, looking at only the income tax effect, the Companies are no longer indifferent as to which of them makes the sale or as to the transfer price established between Company A and B because the total tax will be different depending upon which political jurisdiction taxes the income from the sales.

*Condition 1 All outside sales made by Company A [60,000 + (60,000 * 66.67%)]; no sales by Company B.*

*Condition 2 Company A sells (transfers) all goods to Company B at cost plus 66.67% (same price charged to outside customers); [60,000 + (60,000 * 66.67%)].*

*Condition 3 Half of outside sales made by Company A [30,000 + (30,000 * 66.67%)]; Company A transfers half of the goods to Company B at cost (30,000).*

*Condition 4 Half of outside sales made by Company A [30,000 + (30,000 * 66.67%)]; Company A transfers half of goods to Company B at cost plus 50% [30,000 + (30,000 * 50%)] and Company B makes the remaining outside sales.*

*Condition 5 Half of outside sales made by Company A [30,000 + (30,000 * 66.67%)]; Company A transfers half of goods to Company B at cost plus 10% [30,000 + (30,000 * 10%)]*

Appendix 1 D.
Effect of Differential Tax Rates
Situation Two - Conditions 1-5

	Condition 1	*Condition 2*	*Condition 3*	*Condition 4*	*Condition 5*
Company A					
Sales (outside)	*$100,000*	*$ 0*	*$ 50,000*	*$ 50,000*	*$ 50,000*
Sales (inside)	*0*	*100,000*	*30,000*	*45,000*	*33,000*
Total Sales	*$100,000*	*$100,000*	*$ 80,000*	*$ 95,000*	*$ 83,000*
COGS	*60,000*	*60,000*	*60,000*	*60,000*	*60,000*
Gross Margin	*$ 40,000*	*$ 40,000*	*$ 20,000*	*$ 35,000*	*$ 23,000*
Tax Rate	*40%*	*40%*	*40%*	*40%*	*40%*
Tax Effect	*$ 16,000*	*$ 16,000*	*$ 8,000*	*$ 14,000*	*$ 9,200*
Company B					
Sales (outside)	*$ 0*	*$100,000*	*$ 50,000*	*$ 50,000*	*$ 50,000*
Sales (transfer)	*0*	*0*	*0*	*0*	*0*
Total Sales	*$ 0*	*$100,000*	*$ 50,000*	*$ 50,000*	*$ 50,000*
COGS	*0*	*100,000*	*30,000*	*45,000*	*33,000*
Gross Margin	*$ 0*	*$ 0*	*$ 20,000*	*$ 5,000*	*$ 17,000*
Tax Rate	*25%*	*25%*	*25%*	*25%*	*25%*
Tax Effect	*$ 0*	*$ 0*	*$ 5,000*	*$ 1,250*	*$ 4,250*
Total Company					
Sales (outside)	*$100,000*	*$100,000*	*$100,000*	*$100,000*	*$100,000*
Tax Effect	*$ 16,000*	*$ 16,000*	*$ 13,000*	*$ 15,250*	*$ 13,250*

Appendix 2.
Tax Shortfall for Foreign-Controlled U.S. Corporations for the Three-Year Period (1987-1989)

Tax Shortfall for 1987	*$ 24.8 Billion*
Tax Shortfall for 1988	*30.8 Billion*
Tax Shortfall for 1989	*37.6 Billion*
Total Shortfall for Three Years	*$ 93.2 Billion*

Method Used for Calculation of Tax Shortfall (1987)

Foreign Company Assets Invested in the U.S.	*$ 959.0 Billion*
Expected Rate of Return on Assets	*9%*
Expected Income on Foreign Company Assets	*$ 86.31 Billion*
Corporate Tax Rate	*34%*
Anticipated Tax	*$ 29.35 Billion*
Actual Taxes Paid	*$ 4.50 Billion*
Tax Shortfall for 1987	*$ 24.85 Billion*

Figure 2. Shortfall between anticipated tax based on expected rate of return on foreign assets invested in the U.S. over a three-year period. These calculations, based upon "Professor Wheeler's Theorem", were presented by Representative Duncan Hunter (R-California) to the Oversight Subcommittee of the House Ways and Means Committee on April 9, 1992. Figure adapted from presentation made by Representative Hunter.

Appendix 3.
U.S. Direct Investment Position Abroad on an Historical Cost Basis (000,000s) and Percent of Change: All Companies and Chemical Companies

Year	*$000,000s All Companies*	*% Change All Companies*	*$000,000s Chemical Companies*	*% Change Chemical Companies*
1979	*$ 187,858*	*11.5%*	*$ 16,878*	*9.0%*
1980	*$ 215,375*	*14.6%*	*$ 18,888*	*11.9%*
1981	*$ 228,348*	*6.0%*	*$ 20,176*	*6.8%*
1982	*$ 207,752*	*-9.0%*	*$ 18,274*	*-9.4%*
1983	*$ 207,203*	*-0.3%*	*$ 18,788*	*2.8%*
1984	*$ 212,994*	*2.8%*	*$ 19,032*	*1.3%*
1985	*$ 230,250*	*8.1%*	*$ 20,273*	*6.5%*
1986	*$ 259,800*	*12.8%*	*$ 22,653*	*11.7%*
1987	*$ 314,307*	*21.0%*	*$ 27,789*	*22.7%*
1988	*$ 335,893*	*6.9%*	*$ 31,367*	*12.9%*
1989	*$ 381,781*	*13.7%*	*$ 33,563*	*7.0%*
1990	*$ 426,958*	*11.8%*	*$ 37,348*	*11.3%*
1991	*$ 460,955*	*8.0%*	*$ 40,712*	*9.0%*
1992	*$ 486,670*	*5.6%*	*$ 43,821*	*7.6%*

Source: U.S. Dept. of Commerce. Department of Economic Analysis. Survey of Current Business. Statistics were taken from the annual reports on "U.S. Direct Investment Position Abroad" for the years 1985, 1986, 1988, 1989, 1990, 1991, 1992, and 1993.

Appendix 4.
Foreign Direct Investment Position in the United States on an Historical Cost Basis (000,000s) and Percent of Change: All Companies and Chemical Companies

Year	*$000,000s All Companies*	*% Change All Companies*	*$000,000s Chemical Companies*	*% Change Chemical Companies*
1980	*$ 83,046*		*$ 8,017*	
1981	*$ 108,714*	*30.9%*	*$ 13,701*	*70.9%*
1982	*$ 124,667*	*14.7%*	*$ 14,377*	*4.9%*
1983	*$ 137,061*	*9.9%*	*$ 15,766*	*9.7%*
1984	*$ 164,583*	*20.1%*	*$ 16,631*	*5.5%*
1985	*$ 184,615*	*12.2%*	*$ 19,502*	*17.3%*
1986	*$ 220,414*	*19.4%*	*$ 22,954*	*17.7%*
1987	*$ 263,394*	*19.5%*	*$ 26,291*	*14.5%*
1988	*$ 314,754*	*19.5%*	*$ 30,926*	*17.6%*
1989	*$ 368,924*	*17.2%*	*$ 38,408*	*24.1%*
1990	*$ 394,919*	*7.0%*	*$ 45,746*	*19.1%*
1991	*$ 414,358*	*4.9%*	*$ 48,414*	*5.8%*
1992	*$ 419,526*	*1.2%*	*$ 50,255*	*3.8%*

Source: U.S. Department of Commerce. Bureau of Economic Analysis. These statistics come from the annual reports on Foreign Direct Investment Position in the United States for the years 1991, 1992, and 1993.

Appendix 5.
Illustration of Direct Apportionment of Taxes

State	Population	% of Total U.S. Population	Total Income of State Population	Tax to Be Levied Based on Population	Tax Rate Based on Income of State Population
VA	20,000	20%	$500,000	20,000/100,000 x $100,000 = $20,000	$20,000/$500,000 = 4%
PA	30,000	30%	$300,000	30,000/100,000 x $100,000 = $30,000	$30,000/$300,000 = 10%
SC	50,000	50%	$200,000	50,000/100,000 x $100,000 = $50,000	$50,000/$200,000 = 25%
Total	100,000	100%	$1,000,000	$100,000	

Appendix 6. Illustration of Total Tax and Net Income Under CEN, CIN, and NN

The following is a comparison of total tax and net income under Capital Export Neutrality, Capital Import Neutrality, and National Neutrality with a portion of income earned abroad (one example with a low income tax rate, another with a high income tax rate).

Assumptions:

Worldwide income before taxes	*$ 100,000*	
U.S. Income	*$ 60,000*	
U.S. Tax Rate	*40%*	
Foreign Income	*$ 40,000*	
Foreign Tax Rate (LOW)	*10%*	*(Taxes = $4,000)*
Foreign Tax Rate (HIGH)	*50%*	*(Taxes = $20,000)*

No deferred items causing differences between income tax expense and current income tax payable.

Capital Export Neutrality

U.S. taxes worldwide income with a credit granted for foreign taxes paid.

	LOW RATE	*HIGH RATE*
Worldwide income before income taxes	*$ 100,000*	*$ 100,000*
U.S. Tax Rate	*40%*	*40%*
U.S. Income Taxes	*$ 40,000*	*$ 40,000*
Credit for Foreign Taxes Paid	*$ <4,000>*	*$<20,000>*
U.S. Taxes Payable	*$ 36,000*	*$ 20,000*
Foreign Taxes Paid	*$ 4,000*	*$ 20,000*
Total Taxes Paid	*$ 40,000*	*$ 40,000*
Worldwide Net Income	*$ 60,000*	*$ 60,000*

Appendix 6. Illustration of Total Tax and Net Income (Continued)

Capital Import Neutrality

U.S. taxes only U.S. income.

	LOW RATE	*HIGH RATE*
U.S. income before income taxes	*$ 60,000*	*$ 60,000*
U.S. Tax Rate	*40%*	*40%*
U.S. Income Taxes	*$ 24,000*	*$ 24,000*
Foreign Taxes Paid	*$ 4,000*	*$ 20,000*
Total Taxes Paid	*$ 28,000*	*$ 44,000*
Worldwide Net Income	*$ 72,000*	*$ 56,000*

National Neutrality

U.S. taxes worldwide income and allows deduction for foreign taxes paid.

	LOW RATE	*HIGH RATE*
Worldwide income before income taxes	*$ 100,000*	*$ 100,000*
Less foreign taxes paid	*$ 4,000*	*$ 20,000*
U.S. Taxable Income	*$ 96,000*	*$ 80,000*
U.S. Tax Rate	*$ 40%*	*40%*
U.S. Income Taxes	*$ 38,400*	*$ 32,000*
Foreign Taxes Paid	*$ 4,000*	*$ 20,000*
Total Taxes Paid	*$ 42,400*	*$ 52,000*
Worldwide Net Income	*$ 57,600*	*$ 48,000*

Appendix 7. Provisions of Tax Law

Code	*Provision*
Section 482	*Gave Commissioner power to allocate income, deductions, credits, and allowances* *Income from transfer of intangible must be commensurate with income attributable to it*
Regulations 1.482	*Set up priority of transfer-pricing methods:* *(1) comparable uncontrolled price method (CUP)* *(2) resale price method* *(3) cost plus method*
Section 982	*Prevents taxpayer who fails to produce documentation upon request from later introducing it in a civil court proceeding*
Section 1059A	*Value of imported goods for inventory purposes is not to be greater than value declared for custom's purposes*
"A Study of Intercompany Pricing" (White Paper)	*Did away with priority of transfer-pricing methods* *Introduced Basic Arm's Length Return Method (BALRM) and Profit Split Addition method* *Required contemporaneous documentation of transfer prices* *Required document production w/in reasonable time after requested* *Provided penalties and summons for unjustifiable delays of documentation submission*
Section 6038A and Regulations 1.6038A	*Required 25-percent foreign-owned corporations operating in the U.S. to maintain records re: transactions with related parties* *Made domestic corporation act as agent for IRS summons* *Set penalties:* *$10,000 for failure to maintain records* *$10,000 for failure to supply requested documents w/in 90 days* *$10,000 for each additional 30 days of noncompliance*
Section 6038C	*Applied requirements similar to those of Section 6038A to less than 25-percent foreign-owned corporations*
Section 6662	*Set penalties:* *20% on tax underpayment for transfer-pricing adjustment > $10M* *20% for transfer price 200% more or 50% less than correct price* *40% on tax underpayment for transfer-pricing adjustment > $20M* *40% for transfer price 400% more or 100% less than correct price*
Section 6503(k)	*Suspension of statute of limitations following a "designated summons"*
Section 6612(a)(2)	*Increased interest rate from Federal short-term interest rate plus 3% to short-term interest rate plus 5%*
Rev. Proc. 91-22	*Outlined procedures for advanced pricing agreements*

Appendix 8.
Comparison of Consolidated Parent and Puerto Rican Subsidiary Results in the Eli Lilly and G.D. Searle Cases and Percent of Change

Eli Lilly

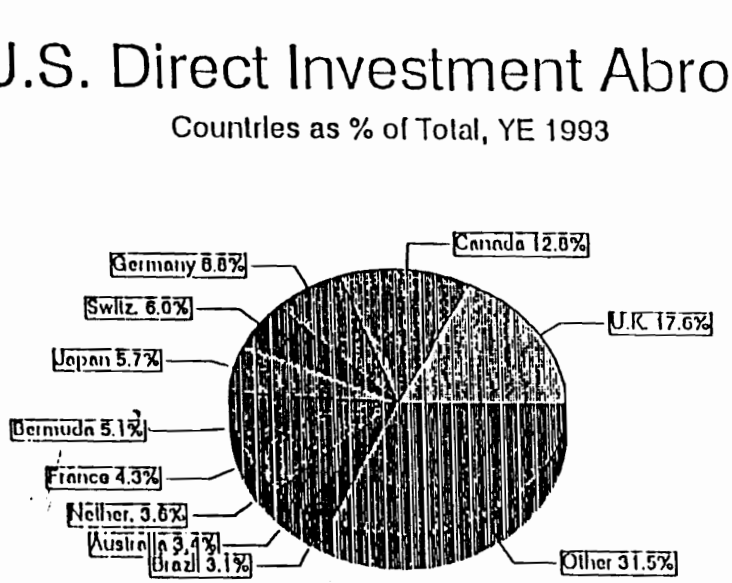
Year	Return on Average Assets		Adj. Taxable Income to Sales		Operating Expenses to Sales	
	Parent - Consolidated	Puerto Rican Sub	Parent Consolidated	Puerto Rican Sub	Parent - Consolidated	Puerto Rican Sub
1971	19.9%	138.4%	16.9%	69.6%	41.5%	9.8%
1972	23.8%	142.6%	20.4%	68.9%	39.8%	11.6%
1973	30.4%	100.7%	24.7%	58.8%	38.9%	16.2%

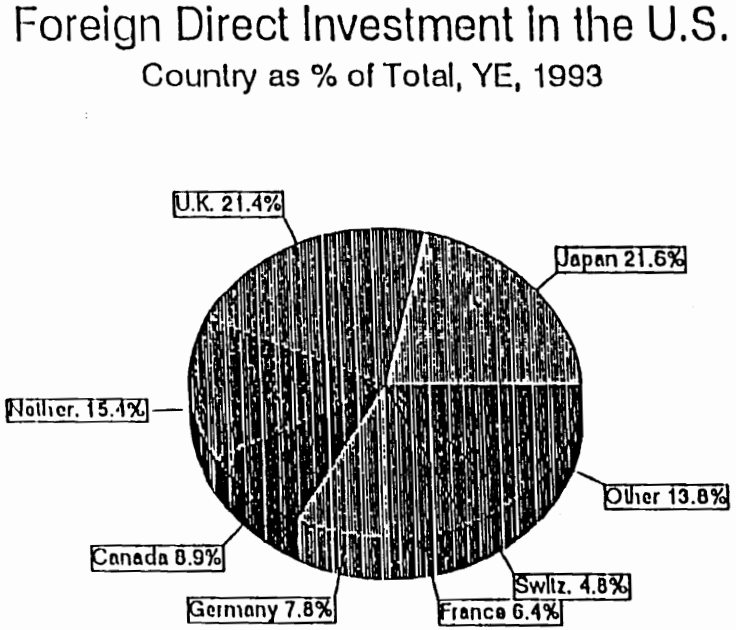
G. D. Searle

Year	Return on Average Assets		Adj. Taxable Income to Sales		Operating Expenses to Sales	
	Parent - Consolidated	Puerto Rican Sub	Parent Consolidated	Puerto Rican Sub	Parent - Consolidated	Puerto Rican Sub
1974	-31.2%	109.2%	13.3%	54.0%	98.7%	35.4%
1975	-42.3%	119.0%	13.6%	56.2%	106.5%	35.6%

Source: Wheeler (1988), p. 91.

Appendix 9. U.S. Direct Investment Abroad and Foreign Direct Investment in the U.S. (by Country)





Source: Bargas and Lowe, 1994, Charts 3 and 4, pp. 73 and 76.

Appendix 10. Two-Factor and Three-Factor Formulary Apportionment Methods

Typical Approach Used For Multi-state Formulary Apportionment.

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$$\frac{\dfrac{\textit{In-state property}}{\textit{Total property}} + \dfrac{\textit{In-state sales}}{\textit{Total sales}} + \dfrac{\textit{In-state payroll}}{\textit{Total payroll}}}{3} \times \textit{Total Unitary Income}$$

Typical Approach Used For Multi-state Formulary Apportionment. Equal weighting of proportional property, payroll, and sales.

****

Proposed Formulary Approach For MNE Income Apportionment.

****

$$\frac{\dfrac{\textit{U.S. assets}}{\textit{Total assets}} + \dfrac{\textit{U.S. sales}}{\textit{Total sales}}}{2} \times \textit{Total Unitary (World-wide) Income}$$

Proposed Formulary Approach For MNE Income Apportionment. Equal weighting of proportional assets and sales.

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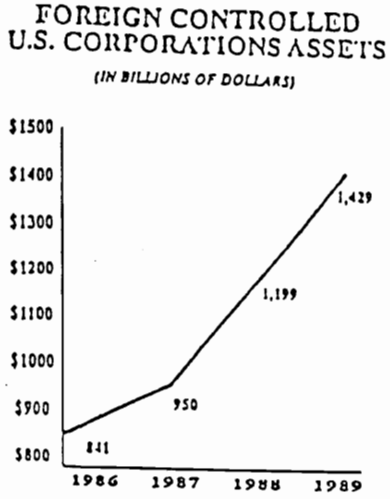
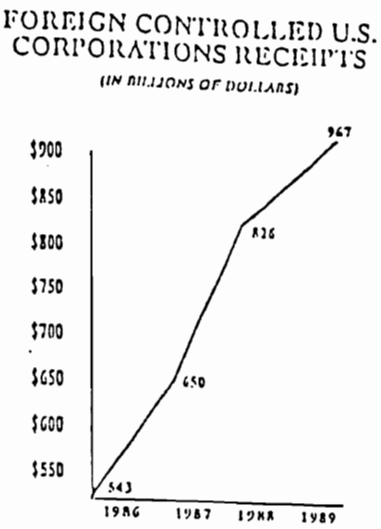
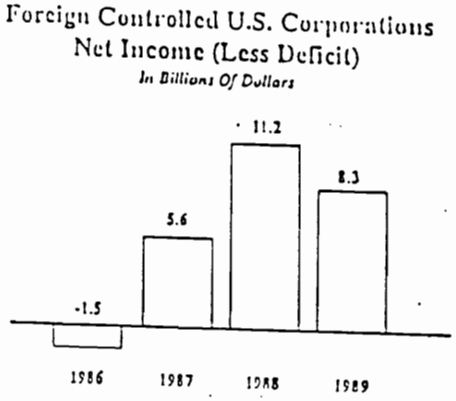
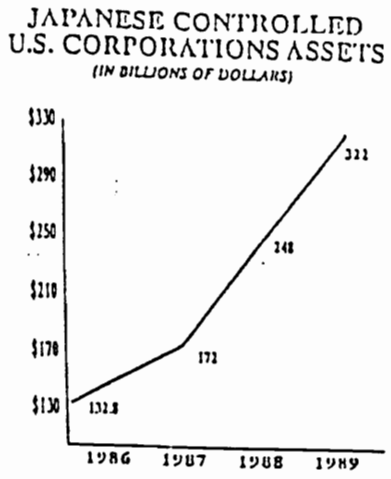
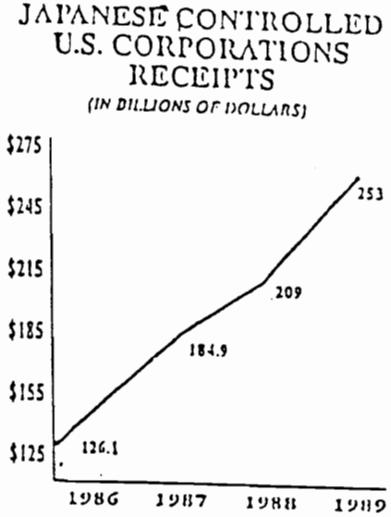
Appendix 11. Graphs from the Testimony of Representative Duncan Hunter

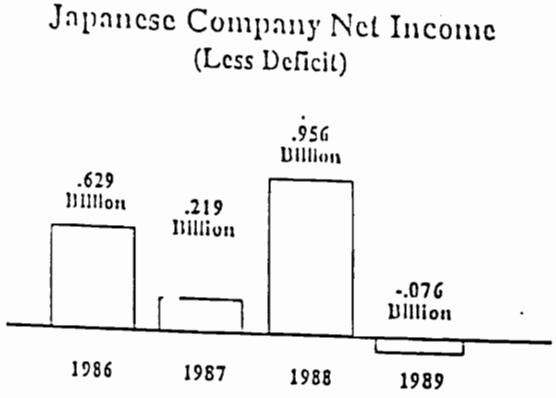












Source: Hunter, Hearing, April 9, 1992, pp. 37-42

Appendix 12. Storage Technology

	1979	1980	1981	1982	1983
Return on Working Assets:					
Parent	4.9%	0.7%	-1.5%	6.7%	2.3%
Puerto Rican Subsidiary	262.5%	302.9%	385.1%	565.5% /	289.5%
Combined Return	8.2%	8.2%	8.2%	15.6%	7.5%
Taxable Income Per Employee					
Parent		$ 175		$ 2,764	
Puerto Rican Subsidiary		$ 62,013		$ 137,855	
Tax. Inc. Per Sq.Ft. Plant					
Parent	$ 8	$ 1	$ (3)	$ 12	$ 4
Puerto Rican Subsidiary	$ 159	$ 415	$ 686	$ 756	$ 439

Source: Wheeler, Tax Notes, July 4, 1988, p. 92.

Appendix 13. Coca Cola

(All Amounts in Millions of Dollars)	*1984*	*1985*	*1986*	*3-Yr %age*
From the Income Tax Note				
Income Before Tax				
United States	*$ 433*	*$ 519*	*$ 694*	*45%*
Foreign	*$ 611*	*$ 617*	*$ 817*	*55%*
Total	*$ 1,044*	*$ 1,136*	*$ 1,511*	*100%*
Current Portion of Tax Provision				
United States	*$ 28*	*$ 25*	*$ 24*	*7%*
Foreign	*$ 286*	*$ 288*	*$ 436*	*93%*
Total	*$ 314*	*$ 313*	*$ 460*	*100%*
From the Segmental Information Note				
Sales and Operating Revenue				
United States	*$ 3,795*	*$ 4,217*	*$ 4,650*	*56%*
Foreign	*$ 2,798*	*$ 2,995*	*$ 4,019*	*44%*
Total	*$ 6,593*	*$ 7,212*	*$ 8,669*	*100%*
Operating Income				
United States	*$ 489*	*$ 496*	*$ 514*	*48%*
Foreign	*$ 501*	*$ 489*	*$ 631*	*52%*
Total	*$ 990*	*$ 985*	*$ 1,145*	*100%*
Identified Assets				
United States	*$ 3,131*	*$ 3,738*	*$ 4,139*	*52%*
Foreign	*$ 2,709*	*$ 3,034*	*$ 4,234*	*48%*
Total	*$ 5,840*	*$ 6,772*	*$ 8,373*	*100%*

Table Source: Wheeler, Tax Notes, July 4, 1988, p.94

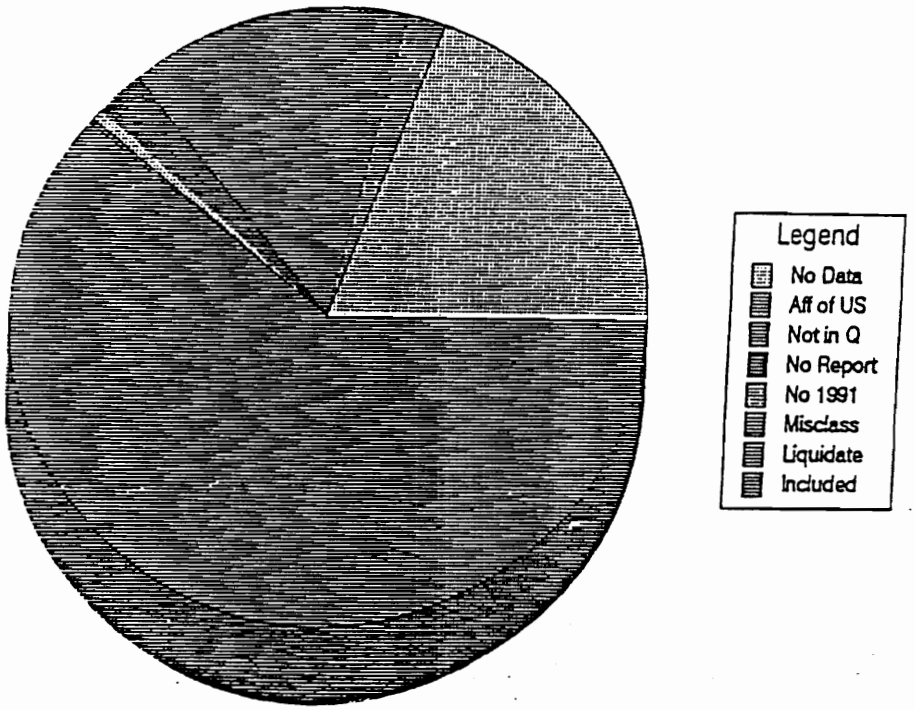
Appendix 14. Westinghouse Electric Corporation

(All Amounts in Millions of Dollars)	*1984*	*1985*	*1986*	*3-Yr %age*
From the Income Tax Note				
Income Before Tax				
United States	*$ 633*	*$ 756*	*$ 787*	*96%*
Foreign	*$ 29*	*$ 40*	*$ 14*	*4%*
Total	*$ 662*	*$ 796*	*$ 801*	*100%*
Current Portion of Tax Provision				
United States	*$ (16)*	*$ 54*	*$ 101*	*51%*
Foreign	*$ 43*	*$ 45*	*$ 47*	*49%*
Total	*$ 27*	*$ 99*	*$ 147*	*100%*
From the Segmental Information Note				
Sales and Operating Revenue				
United States	*$ 9,416*	*$ 9,796*	*$ 9,799*	*92%*
Foreign	*$ 849*	*$ 904*	*$ 932*	*8%*
Total	*$ 10,265*	*$ 10,700*	*$ 10,731*	*100%*
Operating Income				
United States	*$ 556*	*$ 675*	*$ 816*	*92%*
Foreign	*$ 54*	*$ 67*	*$ 55*	*8%*
Total	*$ 610*	*$ 742*	*$ 871*	*100%*
Identified Assets				
United States	*$ 6,544*	*$ 6,973*	*$ 5,649*	*91%*
Foreign	*$ 622*	*$ 684*	*$ 615*	*9%*
Total	*$ 7,166*	*$ 7,657*	*$ 6,264*	*100%*

Table Source: Wheeler, Tax Notes, July 4, 1988, p.94

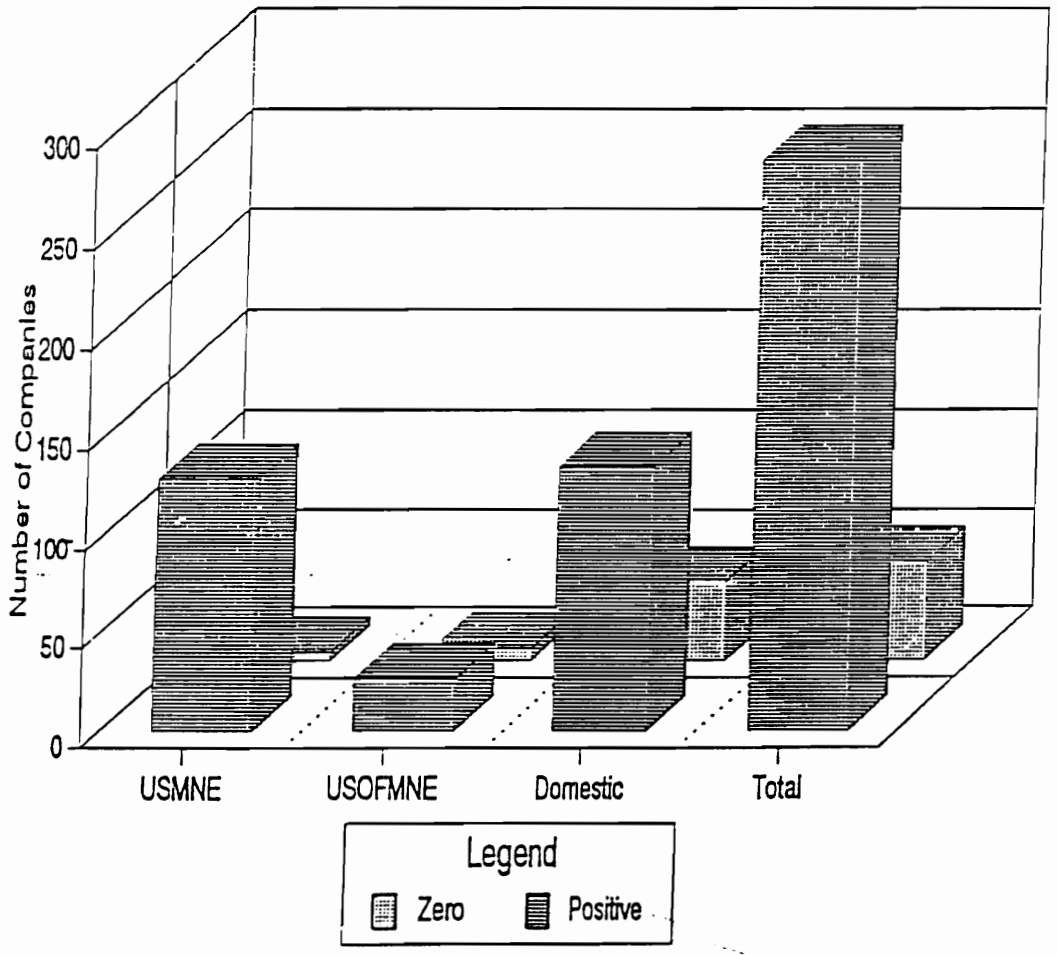
Appendix 15.
Determination of the Number of Chemical Companies Included in This Study

	Number	*%*
Number of Companies Required to File With the SEC	*446*	*100.0*
Companies Excluded From This Study		
Affiliates of U.S. parents included in study	*12*	*2.7*
Annual reports neither in Files nor supplied	*79*	*17.7*
No 1991 report in Files	*15*	*3.4*
Report in Files contained no financial information	*2*	*0.4*
Misclassified	*1*	*0.2*
In liquidation process	*1*	*0.2*
Total Companies Excluded	*110*	*24.7*
Total Companies Included in This Study	*336*	*75.3 (rounded)*



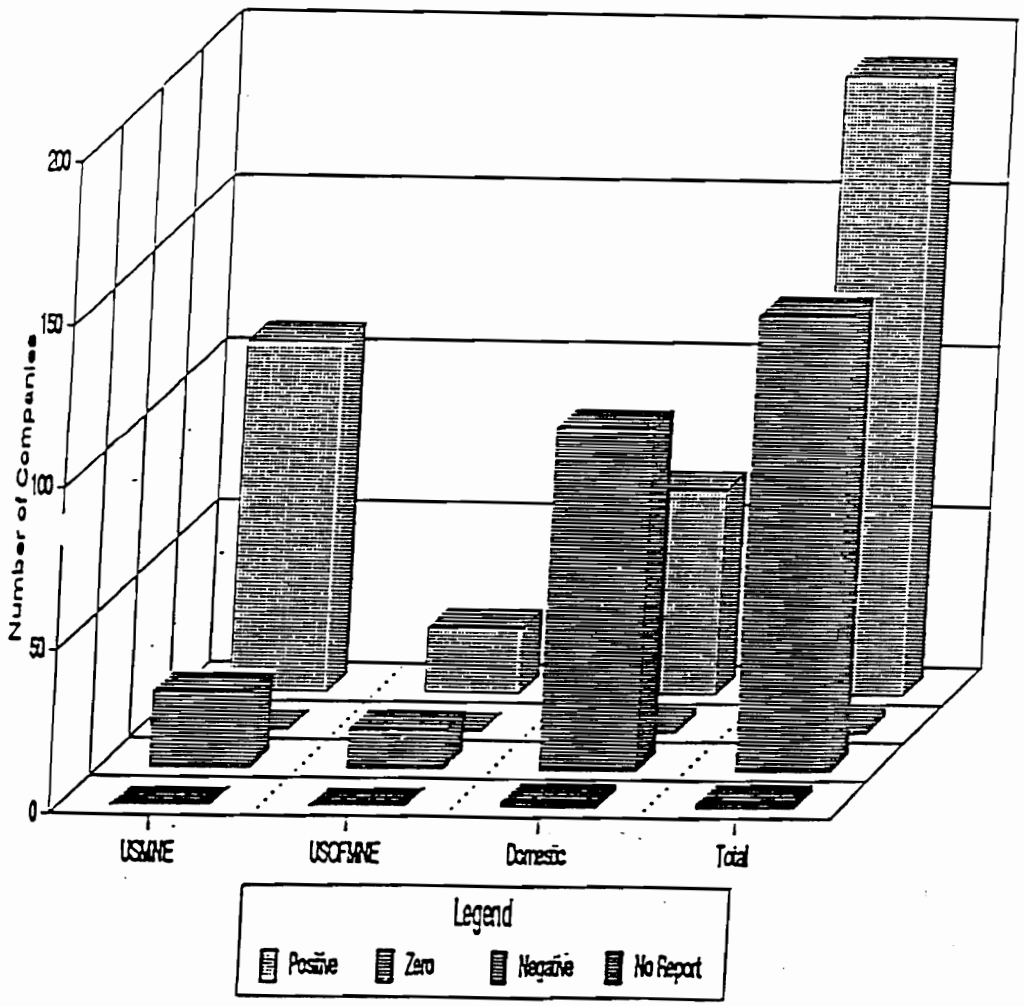
Appendix 16. Sales Reported by Companies Included in This Study

Reported Sales	*USMNE*		*USOFMNE*		*DC*		*TOTAL*	
	No.	*%*	*No.*	*%*	*No.*	*%*	*No.*	*%*
Zero	*4*	*3.1*	*6*	*18.8*	*40*	*23.1*	*50*	*14.9*
Positive	*127*	*96.9*	*26*	*81.2*	*133*	*76.9*	*286*	*85.1*
TOTAL	*131*	*100*	*32*	*100*	*173*	*100*	*336*	*100*



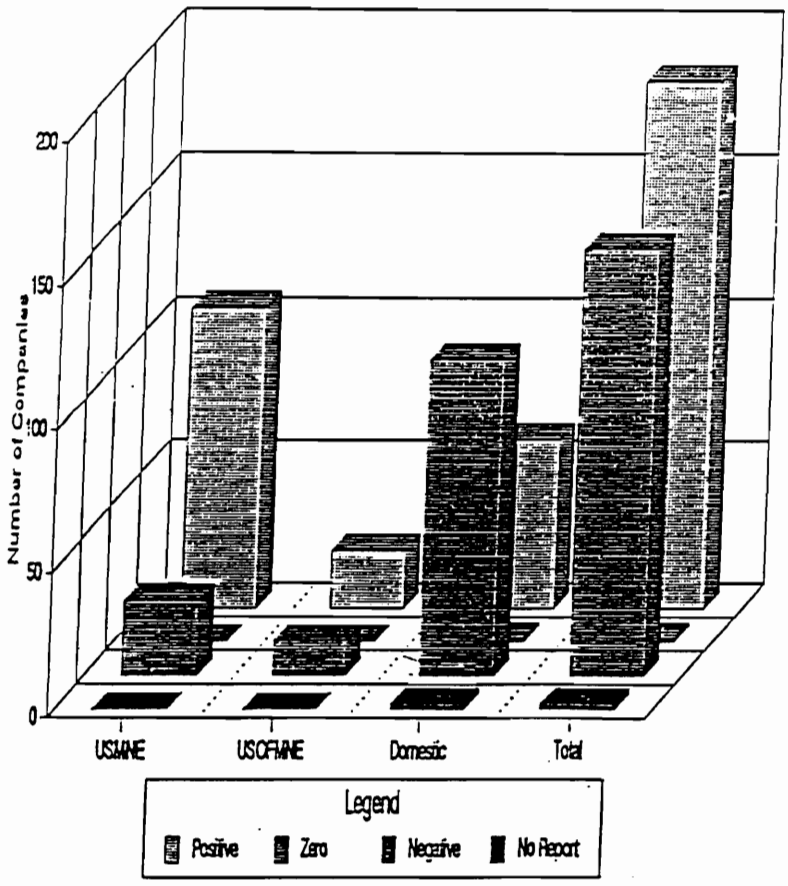
Appendix 17.
Operating Income Reported by Companies Included in This Study

Reported	USMNE		USOFMNE		DC		TOTAL	
Oper. Inc.	No.	%	No.	%	No.	%	No.	%
Positive	108	82.4	20	62.5	63	36.4	191	56.8
Zero	0	0.0	0	0.0	2	1.15	2	0.6
Negative	23	17.6	12	37.5	106	61.3	141	42.0
No Report	0	0.0	0	0.0	2	1.15	2	0.6
TOTAL	131	100	32	100	173	100	336	100



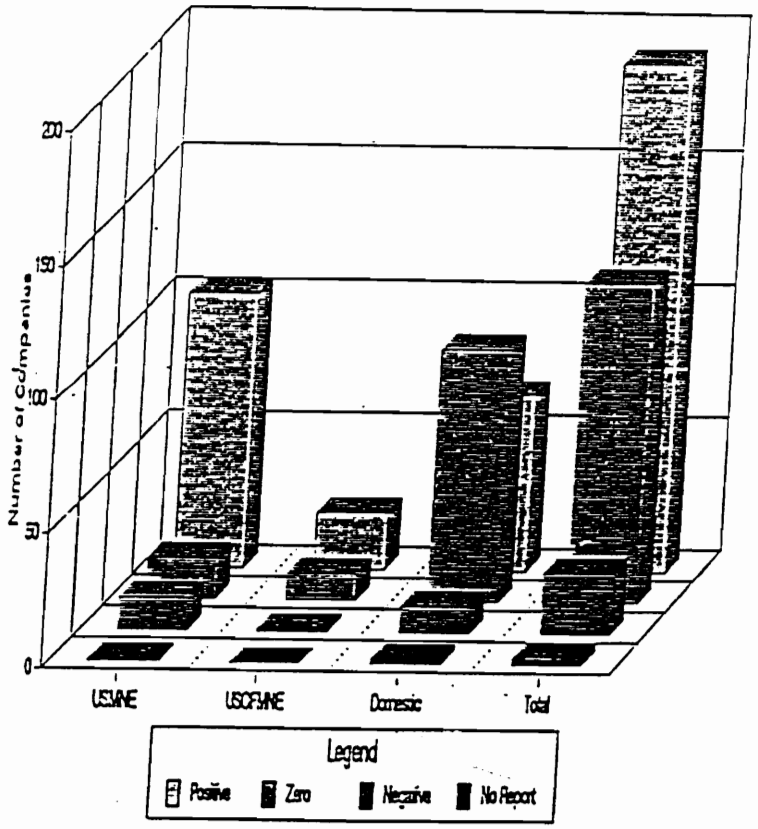
Appendix 18. Income Before Income Tax Reported by Companies Included in This Study

Reported Income Before	*USMNE*		*USOFMNE*		*DC*		*TOTAL*	
Income Tax	*No.*	*%*	*No.*	*%*	*No.*	*%*	*No.*	*%*
Positive	*105*	*80.2*	*20*	*62.5*	*59*	*34.1*	*184*	*54.8*
Zero	*0*	*0.0*	*0*	*0.0*	*1*	*0.6*	*1*	*0.3*
Negative	*26*	*19.8*	*12*	*37.5*	*111*	*64.1*	*149*	*44.3*
No Report	*0*	*0.0*	*0*	*0.0*	*2*	*1.2*	*2*	*0.6*
TOTAL	*131*	*100*	*32*	*100*	*173*	*100*	*336*	*100*



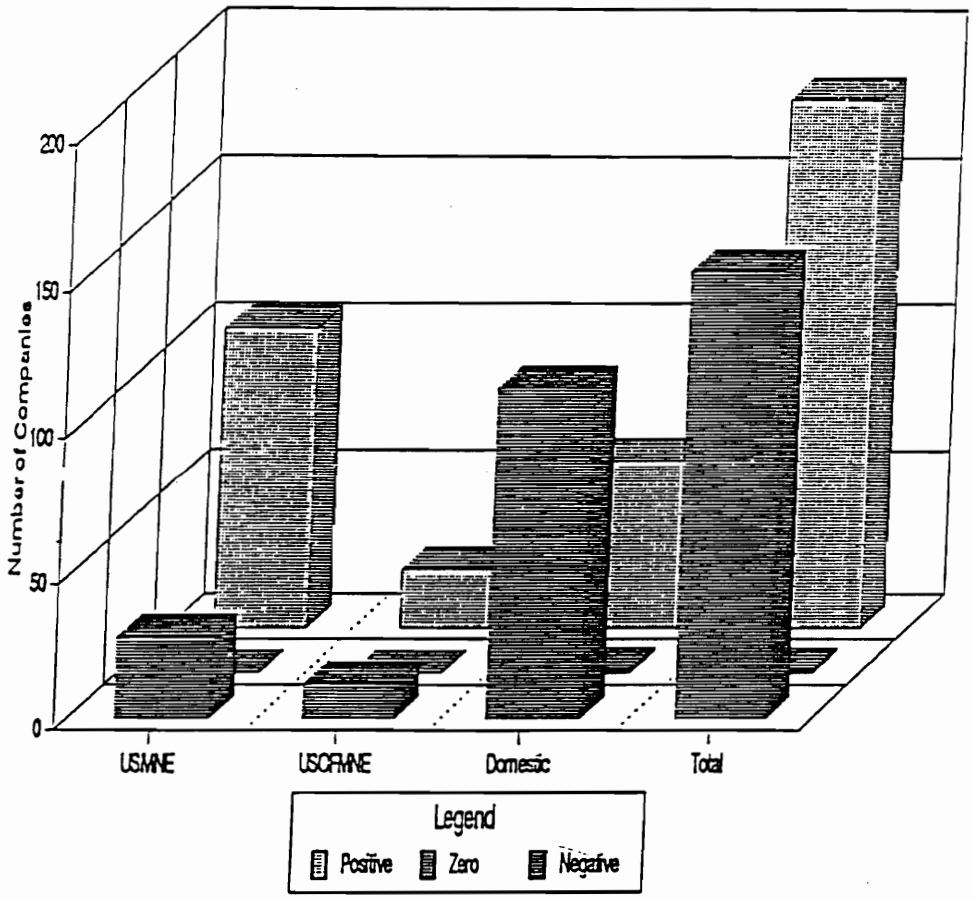
Appendix 19. Financial Statement Income Tax Expense Reported by Companies Included in This Study

REported Income Tax	*USMNE*		*USOFMNE*		*DC*		*TOTAL*	
Expense	*No.*	*%*	*No.*	*%*	*No.*	*%*	*No.*	*%*
Positive	*103*	*78.6*	*21*	*65.6*	*66*	*38.1*	*190*	*56.5*
Zero	*15*	*11.4*	*10*	*31.3*	*95*	*54.9*	*120*	*35.7*
Negative	*12*	*9.2*	*1*	*3.1*	*10*	*5.8*	*23*	*6.9*
No Report	*1*	*0.8*	*0*	*0.0*	*2*	*1.2*	*3*	*0.9*
TOTAL	*131*	*100*	*32*	*100*	*173*	*100*	*336*	*100*



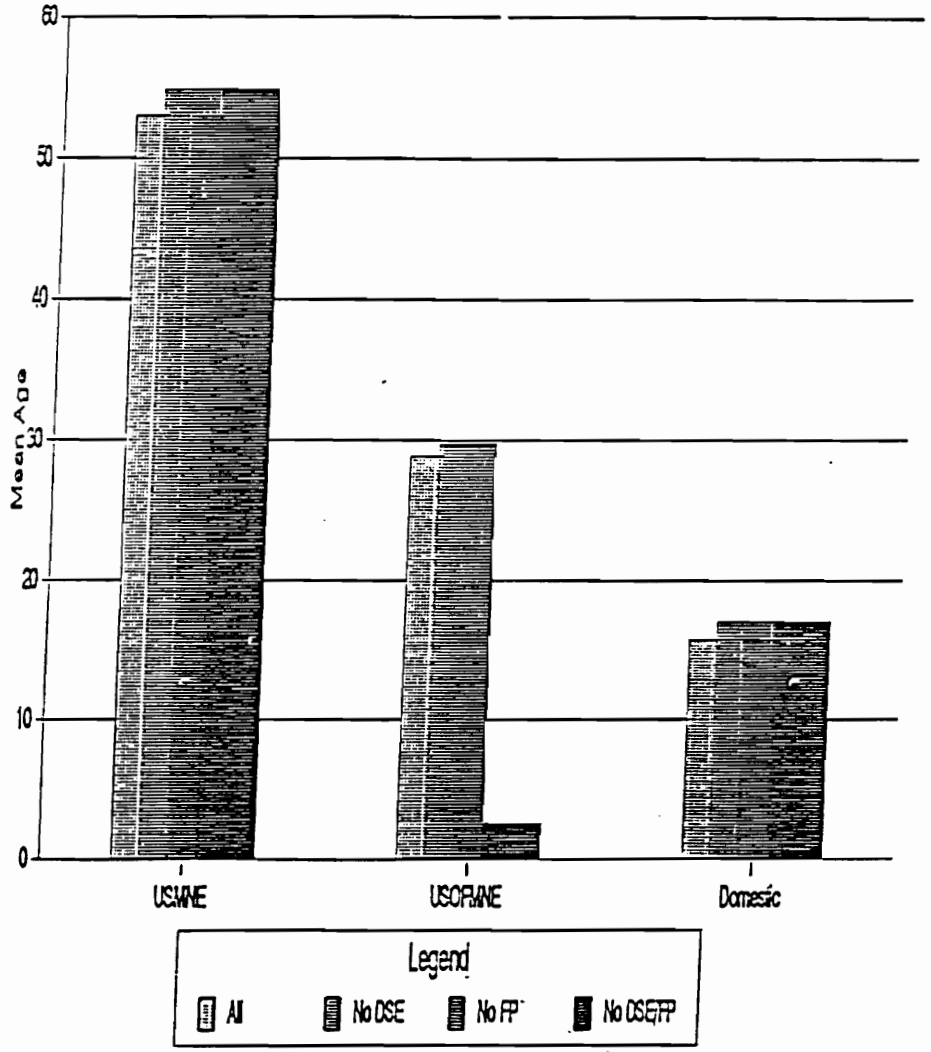
Appendix 20.
Net Income Reported by Companies Included in This Study

Reported	*USMNE*		*USOFMNE*		*DC*		*TOTAL*	
Net Income	*No.*	*%*	*No.*	*%*	*No.*	*%*	*No.*	*%*
Positive	*103*	*78.6*	*20*	*62.5*	*58*	*33.5*	*181*	*53.9*
Zero	*0*	*0.0*	*0*	*0.0*	*1*	*0.6*	*1*	*0.3*
Negative	*28*	*21.4*	*12*	*37.5*	*114*	*65.9*	*154*	*45.8*
TOTAL	*131*	*100*	*32*	*100*	*173*	*100*	*336*	*100*



Appendix 21. Mean Age of Companies Included in This Study

	USMNE	*USOFMNE*	*DC*	*MNE*	*ALL*
Mean	*52.99 years*	*28.86 years*	*15.87 years*	*48.66 years*	*31.71 years*



Appendix 22. Selected Descriptive Group Means

Inclusions	Reporting Companies					Three Groups				Two Groups			Three Groups - Only USMNEs > 50% Abroad				
	No	Min	Max	Med	Mean	Mean USMNE	Mean USOFMNE	Mean DC	p	Mean MNE	Mean DC	p	No	Mean USMNE	Mean USOFMNE	Mean DC	p
Panel 1: Age in Years																	
All	323	1	225	13.0	31.71	52.99	28.86	15.87	<.01	48.57	15.87	<.01	204	49.33	28.86	15.87	<.01
No DSE	289	1	225	16.0	34.34	54.90	29.73	17.13	<.01	50.51	17.13	<.01	175	49.33	29.73	17.13	<.01
No FP	315	1	225	13.0	31.24	52.99	20.30	15.87	<.01	48.57	15.87	<.01	196	49.33	20.30	15.87	<.01
No DSE/FP	281	1	225	15.0	33.89	54.90	20.61	17.13	<.01	50.51	17.13	<.01	167	49.33	20.61	17.13	<.01
Panel 2: Net Sales (Worldwide)																	
All	336	0	38.7B	22.0M	1.05B	2.08B	2.27B	42.9M	<.01	2.11B	42.9M	<.01	214	874M	2.27B	42.9M	<.01
No DSE	300	0	38.7B	38.7M	1.17B	2.15B	2.42B	51.2M	<.01	2.21B	51.2M	<.01	183	874M	2.42B	51.2M	<.01
No FP	327	0	38.7B	20.6M	896M	2.08B	595M	42.9M	<.01	1.86B	42.9M	<.01	205	874M	595M	42.9M	<.01
No DSE/FP	291	0	38.7B	34.0M	1.01B	2.15B	652M	51.2M	<.01	1.94B	51.2M	<.01	174	874M	652M	51.2M	<.01
Panel 3: Average Total Assets (Worldwide)																	
All	336	385	37.3B	34.5M	1.09B	2.09B	2.48B	53.5M	<.01	2.17B	53.5M	<.01	214	614M	2.48B	53.5M	<.01
No DSE	300	385	37.3B	44.9M	1.20B	2.16B	2.64B	60.7M	<.01	2.25B	60.7M	<.01	183	614M	2.64B	60.7M	<.01
No FP	327	385	37.3B	33.1M	928M	2.09B	880M	53.5M	<.01	1.91B	53.5M	<.01	174	614M	880M	53.5M	<.01
No DSE/FP	291	385	37.3B	41.5M	1.04B	2.16B	963M	60.7M	<.01	1.99B	60.7M	<.01	174	614M	963M	60.7M	<.01
Panel 4: Income Before Income Tax (Worldwide)																	
All	334	-710M	3.17B	0.46M	117M	242.8M	229.6M	-1.0M	<.01	240.2M	-1.0M	<.01	212	1.01M	229.6M	-1.0M	<.01
No DSE	298	-710M	3.17B	1.19M	131M	252.1M	245.0M	-0.2M	<.01	250.7M	-0.2M	<.01	181	1.01M	245.0M	-0.2M	<.01
No FP	325	-710M	3.17B	0.24M	101M	242.8M	55.3M	-1.0M	<.01	214.8M	-1.0M	<.01	203	1.01M	55.3M	-1.0M	<.01
No DSE/FP	289	-710M	3.17B	0.73M	141M	252.1M	60.7M	-0.2M	<.01	224.8M	-0.2M	<.01	172	1.01M	60.7M	-0.2M	<.01

NS = Non-significant results at the .05 level. Note: Variations in number of companies is due to lack of data for related computation.

Appendix 22. Selected Descriptive Group Means (Continued)

Inclusions	Reporting Companies					Three Groups				Two Groups			Three Groups - Only USMNE > 50% Abroad				
	No	Min	Max	Med	Mean	Mean USMNE	Mean USFORMNE	Mean DC	p	Mean MNE	Mean DC	p	No	Mean USMNE	Mean USFORMNE	Mean DC	p
Panel 5: Financial Statement Income Tax Expense (Worldwide)																	
All	333	-78M	1.4B	0.12M	39.0M	80.3M	75.0M	0.9257M	<.01	79.2M	0.9257M	<.01	212	139.5M	75.0M	0.9257M	<.01
No DSE	297	-78M	1.42B	0.29M	43.7M	83.4M	79.9M	1.1M	<.01	82.7M	1.1M	<.01	176	139.5M	79.9M	1.1M	<.01
No FP	324	-78M	1.42B	0.09M	34.4M	80.3M	23.4M	0.9257M	<.01	71.8M	0.9257M	<.01	203	139.5M	23.4M	0.9257M	<.01
No DSE/FP	288	-78M	1.42B	0.27M	38.6M	83.4M	25.7M	1.1M	<.01	75.1M	1.1M	<.01	167	139.5M	25.7M	1.1M	<.01
Panel 6: Net Profit (Worldwide)																	
All	336	-630M	2.12B	0.23M	74.0M	155.9M	148.5M	-1.7M	<.01	154.0M	-1.7M	<.01	214	53.5M	148.5M	-1.7M	<.01
No DSE	300	-630M	2.12B	0.66M	83.2M	161.6M	158.5M	-1.1M	<.01	161.0M	-1.1M	<.01	193	53.5M	158.5M	-1.1M	<.01
No FP	327	-630M	2.12B	0.16M	63.5M	155.9M	27.2M	-1.7M	<.01	136.7M	-1.7M	<.01	205	53.5M	27.2M	-1.7M	<.05
No DSE/FP	291	-630M	2.12B	0.44M	71.6M	161.6M	30.0M	-1.1M	<.01	142.8M	-1.1M	<.01	174	53.5M	30.0M	-1.1M	<.05
Panel 7: Current Domestic (U.S. - Federal and State) Income Tax Expense																	
All	299	-56M	707M	0.00M	22.3M	52.9M	8.4M	0.564M	<.01	48.0M	0.564M	<.01	187	9.6M	8.4M	0.564M	<.01
No DSE	265	-56M	707M	0.05M	25.1M	55.1M	9.2M	0.682M	<.01	48.3M	0.682M	<.01	158	9.6M	9.2M	0.682M	<.01
No FP	296	-56M	707M	0.00M	22.5M	52.9M	9.7M	0.564M	<.01	47.0M	0.564M	<.01	184	9.6M	9.7M	0.564M	<.01
No DSE/FP	262	-56M	707M	0.06M	25.4M	55.1M	10.8M	0.682M	<.01	49.4M	0.682M	<.01	155	9.6M	10.9M	0.682M	<.01
Panel 8: Current Worldwide Tax (U.S. Federal, U.S. State and Local, and Foreign) Income Tax Expense																	
All	299	-23M	1.72B	0.00M	37.7M	90.3M	11.4M	0.5704M	<.01	78.2M	0.5704M	<.01	187	39.3M	11.4M	0.5704M	<.01
No DSE	265	-23M	1.72B	0.12M	42.5M	94.1M	12.6M	0.6898M	<.01	82.1M	0.6898M	<.01	158	39.3M	12.6M	0.6898M	<.01
No FP	296	-23M	1.72B	0.004M	38.1M	90.3M	13.2M	0.5704M	<.01	79.8M	0.5704M	<.01	184	39.3M	13.2M	0.5704M	<.01
No DSE/FP	262	-23M	1.72B	0.13M	43.0M	94.1M	14.8M	0.6898M	<.01	84.0M	0.6898M	<.01	155	39.3M	14.8M	0.6898M	<.01

NS = Non-significant results at the .05 level. Note: Variations in number of companies is due to lack of data for related computation.

Appendix 22. Selected Descriptive Group Means (Continued)

Inclusions	Reporting Companies					Three Groups				Two Groups			Three Groups - Only USMNE > 50% Abroad				
	No	Min	Max	Med	Mean	Mean USMNE	Mean USOFMNE	Mean DC	p	Mean MNE	Mean DC	p	No	Mean USMNE	Mean USOFMNE	Mean DC	p
Panel 9: Cost of Goods Sold (Worldwide)																	
All	329	0.0	2.25B	11.3M	574M	1.11B	1.27B	30.4M	<.01	1.14B	30.4M	<.01	203	418M	1.27B	30.4M	<.01
No DSE	295	0.0	2.25B	20.4M	638M	1.15B	1.36B	36.1M	<.01	1.19B	36.1M	<.01	178	418M	1.36B	36.1M	<.01
No FP	321	0.0	2.25B	10.6M	488M	1.11B	322M	30.4M	<.01	991M	30.4M	<.01	200	418M	322M	30.4M	<.01
No DSE/FP	287	0.0	2.25B	17.2M	545M	1.15B	353M	36.1M	<.01	1.04B	36.1M	<.01	171	418M	353M	36.1M	<.01
Panel 10: Domestic (U.S.) Sales																	
All	336	0	31.5B	20.3M	728M	1.38B	1.78B	40.7M	<.01	1.46B	40.7M	<.01	214	329M	1.78B	40.7M	<.01
No DSE	300	0	31.5B	33.4M	813M	1.43B	1.90B	48.5M	<.01	1.52B	48.5M	<.01	183	329M	1.90B	48.5M	<.01
No FP	327	0	24.1B	17.9M	604M	1.38B	428M	40.7M	<.01	1.24B	40.7M	<.01	205	329M	428M	40.7M	<.01
No DSE/FP	291	0	24.1B	30.5M	676M	1.43B	469M	48.5M	<.01	1.29B	48.5M	<.01	174	329M	469M	48.5M	<.01
Panel 11: Domestic (U.S.) Average Total Assets																	
All	336	385	25.5B	33.7M	653M	1.21B	1.64B	51.7M	<.01	1.29B	51.7M	<.01	214	188M	1.64B	51.7M	<.01
No DSE	300	385	25.5B	41.4M	725M	1.24B	1.75B	58.7M	<.01	1.34B	58.7M	<.01	183	188M	1.75B	58.7M	<.01
No FP	327	385	21.1B	32.5M	538M	1.21B	392M	51.7M	<.01	1.03B	51.7M	<.01	205	188M	392M	51.7M	<.01
No DSE/FP	291	385	21.1B	32.3M	597M	1.24B	428M	58.7M	<.01	1.13B	58.7M	<.01	174	188M	428M	58.7M	<.01
Panel 12: Domestic (U.S.) Operating Income																	
All	319	-190M	2.25B	0.582M	88.7M	180M	221M	2.1M	<.01	189M	2.1M	<.01	207	15.5M	221M	2.1M	<.01
No DSE	284	-190M	2.25B	1.590M	100.0M	187M	237M	3.4M	<.01	197M	3.4M	<.01	176	15.5M	237M	3.4M	<.01
No FP	310	-190M	2.25B		73.4M	180M	59.9M	2.1M	<.01	161M	2.1M	<.01	198	15.5M	59.9M	2.1M	<.01
No DSE/FP	275	-190M	2.25B	1.356M	83.2M	187M	66.0M	3.4M	<.01	168M	3.4M	<.01	167	15.5M	66.0M	3.4M	<.01

NS = Non-significant results at the .05 level. Note: Variations in number of companies is due to lack of data for related computation.

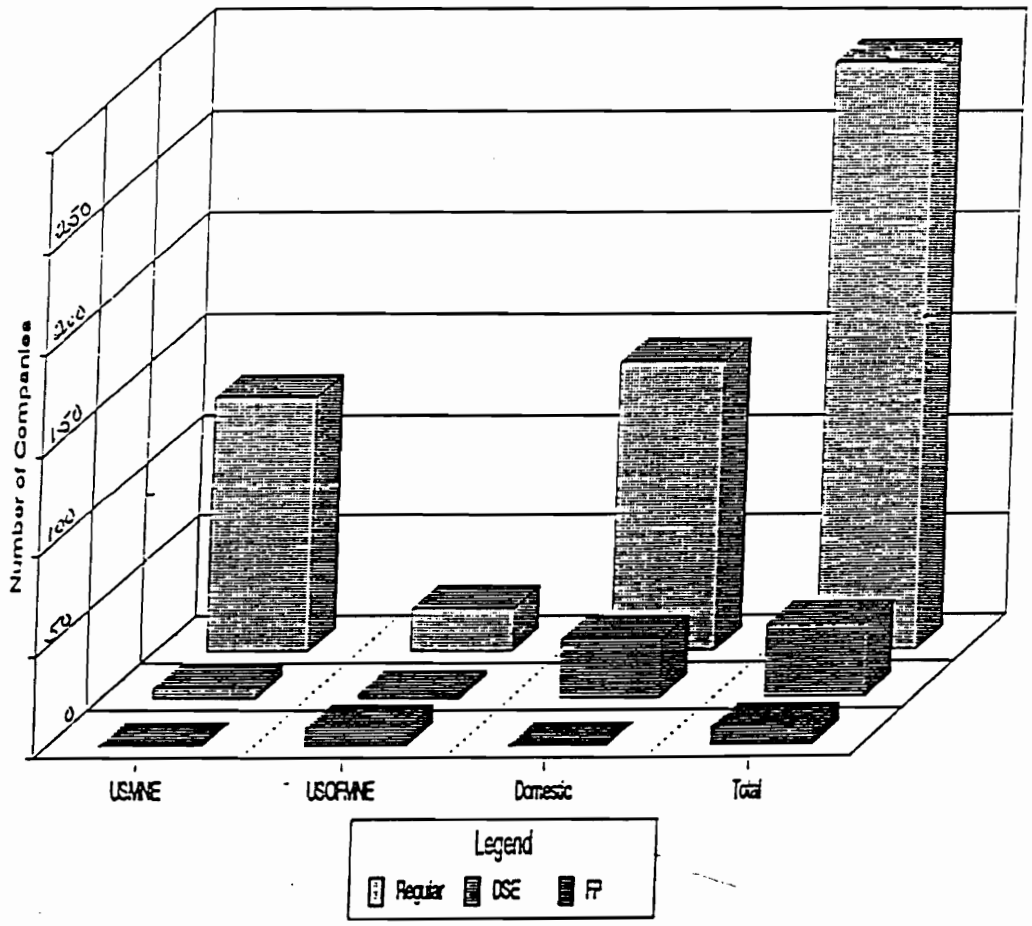
Appendix 22. Selected Descriptive Group Means (Continued)

Inclusions	Reporting Companies					Three Groups				Two Groups			Three Groups - With Only > 50% USMNEs				
	No	Min	Max	Med	Mean	Mean USMNE	Mean USOFMNE	Mean DC	p	Mean MNE	Mean DC	p	No	Mean USMNE	Mean USOFMNE	Mean DC	p
Panel 13: Operating Income (Worldwide)																	
All	334	-710M	8.88B	0.95M	158M	340M	249M	2.1M	<.01	322M	2.1M	<.01	212	109M	249M	2.1M	<.01
No DSE	298	-710M	8.88B	2.3M	178M	353.1M	265.1M	3.3M	<.01	336M	3.3M	<.01	181	109M	265M	3.3M	<.01
No FP	325	-710M	8.88B	0.66M	142M	340M	56.3M	2.1M	< 01	298M	2.1M	<.01	203	109M	56.3M	2.1M	<.01
No DSE or FP	289	-710M	8.88B	1.87M	160M	353M	61.8M	3.3M	<.01	311M	3.3M	NS	172	109M	61.8M	3.3M	<.01

NS = Non-significant results at the .05 level. Note: Variations in number of companies is due to lack of data for related computation.

Appendix 23. Development Stage Enterprises (DSE) and Foreign Parent (FP) Companies in This Study

	USMNE	USOFMNE	DC	TOTAL
DSE	5	2	29	36
FP	NA	9	NA	9
NEITHER DSE NOR FP	126	21	144	281
TOTAL	131 (39%)	32 (9.5%)	173 (51.5%)	336 (100%)



Appendix 24. Cost-of-Goods Sold Ratio Means (Worldwide)

Inclusions	Reporting Companies					Three Groups				Two Groups			Three Groups - With Only >50% USMNEs				
	No	Min	Max	Med	Mean	Mean USMNE	Mean USOFMNE	Mean DC	p	Mean MNE	Mean DC	p	No.	Mean USMNE	Mean USOFMNE	Mean DC	p
Cost of Goods Sold Ratio (COGS/Sales)																	
All	279	0.0006	8.2853	0.5924	0.6099	0.5513	0.4846	0.6730	NS	0.5403	0.6730	<.05	162	0.5555	0.4846	0.6730	NS
No DSE	259	0.0006	2.5146	0.5924	0.5792	0.5539	0.5048	0.6110	NS	0.5458	0.6110	<.05	149	0.5555	0.5048	0.6110	NS
No FP	267	0.0006	8.2853	0.5924	0.6137	0.5513	0.4844	0.6730	NS	0.5433	0.6730	<.05	154	0.5555	0.4844	0.6730	NS
No DSE or FP	251	0.0006	2.5146	0.5924	0.5822	0.5539	0.5147	0.6110	NS	0.5494	0.6110	<.05	141	0.5555	0.5147	0.6110	NS

NS = Non-significant results at the .05 level. Note: Variations in number of companies is due to lack of data for related computation.

Appendix 25. Hypotheses Testing Results - GLM With Covariates

Results From GLM with Covariates for Age and Size																				
	Hypothesis 1		Hypotheses 2 A and B				Hypothesis 3		Hypothesis 4		Hypotheses 5 A and B				Hypothesis 6		Hypotheses 7 A and B			
	COSG Ratio (WW)		Operating Income Ratio (WW)		Operating Income Ratio (US)		Net Profit Ratio (WW)		Effective Income Tax Rate (WW)		Eff Oper. Income Tax Rate (WW)		Eff Oper. Income Tax Rate (US)		Return on Assets (WW)		Operating Return on Assets (WW)		Operating Return on Assets(US)	
Grouping	F	p	F	p	F	p	F	p	F	p	F	p	F	p	F	p	F	p	F	p
3 Group - USMNE, USOFMNE, DC																				
All Companies	2.28	NS	7.74	<.01	7.61	<.01	8.00	<.01	2.29	NS	0.03	NS	0.05	NS	0.75	NS	1.77	NS	1.38	NS
No DSE	3.44	<.05	5.78	<.01	5.65	<.01	5.82	<.01	1.99	NS	0.03	NS	0.05	NS	0.89	NS	1.26	NS	0.97	NS
No FP	2.21	NS	12.03	<.01	12.00	<.01	12.45	<.01	2.22	NS	0.02	NS	0.04	NS	0.74	NS	1.66	NS	1.30	NS
No DSE or FP	3.35	<.05	9.19	<.01	9.17	<.01	9.26	<.01	1.93	NS	0.02	NS	0.04	NS	0.88	NS	1.15	NS	0.88	NS
2 Group - MNE, DC																				
All Companies	4.28	<.05	2.18	NS	1.91	NS	2.26	NS	3.14	NS	0.04	NS	0.01	NS	0.85	NS	3.51	NS	2.68	NS
No DSE	6.37	<.05	1.62	NS	1.33	NS	1.63	NS	2.71	NS	0.06	NS	0.03	NS	1.07	NS	2.54	NS	1.93	NS
No FP	4.18	<.05	2.27	NS	2.04	NS	2.63	NS	3.22	NS	0.03	NS	0.01	NS	0.94	NS	3.20	NS	2.37	NS
No DSE or FP	6.41	<.05	1.70	NS	1.42	NS	1.71	NS	2.79	NS	0.05	NS	0.02	NS	1.16	NS	2.30	NS	1.69	NS
3 Group - >50%																				
All Companies	0.76	NS	5.21	<.01	5.44	<.01	5.42	<.01	1.19	NS	0.24	NS	3.42	NS	0.20	NS	0.19	NS	0.10	NS
No DSE	1.78	NS	3.82	<.05	3.95	<.05	3.87	<.05	1.00	NS	0.23	NS	2.83	NS	0.20	NS	0.20	NS	0.11	NS
No FP	0.67	NS	7.63	<.01	8.43	<.01	7.96	<.01	1.10	NS	0.21	NS	3.45	NS	0.15	NS	0.14	NS	0.05	NS
No DSE or FP	1.36	NS	5.72	<.01	6.33	<.01	5.80	<.01	0.93	NS	0.21	NS	2.86	NS	0.17	NS	0.17	NS	0.07	NS
U.S. vs Foreign	1.22	NS	15.41	<.01	15.17	<.01	15.93	<.01	0.27	NS	0.03	NS	0.10	NS	0.18	NS	0.20	NS	0.08	NS
USMNE vs DC	3.06	NS	0.45	NS	0.71	NS	0.44	NS	4.31	<.05	0.03	NS	0.00	NS	1.34	NS	3.01	NS	2.40	NS

NS = Non-significant results at the .05 level.

Appendix 26. Selected Operating-Income Ratio Means (Worldwide and Domestic)

Inclusions	*Three Groups*				*Two Groups*			*Three Groups - With Only >50% USMNEs*				
	Mean USMNE	*Mean USOFMNE*	*Mean DC*	*p*	*Mean MNE*	*Mean DC*	*p*	*Number*	*Mean USMNE*	*Mean USOFMNE*	*Mean DC*	*p*
Panel 1: Operating-Income Ratio (Worldwide) (Worldwide Operating Profit/Worldwide Net Sales)												
All	-0.8	-322.2	-5.2	<.01	-55.4	-5.2	NS	166	0.1	-322.2	-5.2	<.05
No DSE	0.0	-292.4	-4.7	<.01	-49.7	-4.7	NS	151	0.1	-292.4	-4.7	NS
No FP	-0.8	-492.8	-5.2	<.01	-58.9	-5.2	NS	157	0.1	-492.8	-5.2	<.01
No DSE or FP	0.0	-456.9	-4.7	<.01	-53.0	-4.7	NS	142	0.1	-456.9	-4.7	<.05
Panel 2: Domestic Operating-Income Ratio (U.S. Operating Income/U.S. Sales Before Elimination as Reported in the Segmental Note)												
All	-0.3	-335.0	-17.2	<.01	-60.9	-17.2	NS	163	-0.1	-335.0	-17.2	<.05
No DSE	0.7	-304.5	-18.2	<.01	-54.4	-18.2	NS	147	-0.1	-304.5	-18.2	NS
No FP	-0.3	-523.5	-17.2	<.01	-65.2	-17.2	NS	154	-0.1	-523.5	-17.2	<.01
No DSE or FP	0.7	-487.3	-18.2	<.01	-58.4	-18.2	NS	138	-0.1	-487.3	-18.2	<.05

NS = Non-significant results at the .05 level. Note: Variations in number of companies is due to lack of data for related computation.

Appendix 27. Selected Net-Profit and Return-on-Total-Assets Ratio Means

Inclusions	Three Groups				Two Groups			Three Groups - With Only >50% USMINEs				
	Mean USMNE	Mean USOFMNE	Mean DC	p	Mean MNE	Mean DC	p	Number	Mean USMNE	Mean USOFMNE	Mean DC	p
Panel 1: Net-Profit Ratio (Worldwide Net Profit/Worldwide Net Sales)												
All	-0.9	-289.7	-5.0	<.01	-49.9	-5.0	NS	168	0.0	-289.7	-5.0	<.05
No DSE	0.0	-258.8	-4.5	<.01	-44.0	-4.5	NS	153	0.0	-258.8	-4.5	NS
No FP	-0.9	-443.1	-5.0	<.01	-53.1	-5.0	NS	159	0.0	-443.1	-5.0	<.01
No DSE or FP	0.0	-404.5	-4.5	<.01	-46.9	-4.5	NS	144	0.0	-404.5	-4.5	<.05
Panel 2: Ratio of Net Profit to Average Total Assets (Worldwide Net Profit/Worldwide Average Total Assets)												
All	-1.129	-0.138	-0.671	NS	-0.934	-0.671	NS	214	0.043	-0.138	-0.671	NS
No DSE	-1.163	-0.029	-0.477	NS	-0.945	-0.477	NS	183	0.043	-0.029	-0.477	NS
No FP	-1.129	-0.237	-0.671	NS	-0.995	-0.671	NS	205	0.043	-0.237	-0.671	NS
No DSE or FP	-1.163	-0.090	-0.477	NS	-1.010	-0.477	NS	174	0.043	-0.090	-0.477	NS

NS = Non-significant results at the .05 level. Note: Variations in number of companies is due to lack of data for related computation.

Appendix 28. Selected Tax Ratio Means (Worldwide and Domestic)

Inclusions	Three Groups				Two Groups			Three Groups - Only USAINE >50% Abroad				
	Mean USAINE	Mean USOFAINE	Mean DC	p	Mean AINE	Mean DC	p	No	Mean USAINE	Mean USOFAINE	Mean DC	p
Panel 1: Effective Income Tax Rate (Current Worldwide Income Tax Expense/Worldwide Net Profit)												
All	0.509	0.117	0.113	<.05	0.449	0.113	<.05	136	0.864	0.117	0.113	NS
No DSE	0.527	0.129	0.136	NS	0.468	0.136	<.05	158	0.864	0.129	0.136	NS
No FP	0.509	0.136	0.113	<.05	0.458	0.113	<.05	133	0.864	0.136	0.113	NS
No DSE/FP	0.527	0.152	0.136	NS	0.479	0.136	<.05	155	0.864	0.152	0.136	NS
Panel 2: Ratio of Current Worldwide Income Tax Expense to Worldwide Income Before Income Tax												
All	2.65	0.07	0.17	NS	2.25	0.17	NS	185	0.353	0.07	0.1722	NS
No DSE	2.78	0.08	0.21	NS	2.37	0.21	NS	157	0.353	0.08	0.207	NS
No FP	2.65	0.08	0.17	NS	2.30	0.17	NS	182	0.353	0.08	0.1722	NS
No DSE/FP	2.78	0.09	0.21	NS	2.42	0.21	NS	129	0.353	0.09	0.207	NS
Panel 3: Ratio of Current Worldwide Income Tax Expense to Worldwide Net Sales												
All	-0.0069	0.0090	0.0089	NS	-0.0050	0.0089	NS	143	0.03635	0.0090	0.0089	NS
No DSE	-0.0076	0.0096	0.0100	NS	-0.0056	0.0100	NS	129	0.03635	0.0096	0.0100	NS
No FP	-0.0069	0.0110	0.0089	NS	-0.0051	0.0089	NS	140	0.03635	0.0110	0.0089	NS
No DSE/FP	-0.0076	0.0120	0.0100	NS	-0.0057	0.0100	NS	126	0.03635	0.0120	0.0100	NS
Panel 4: Ratio of Current Worldwide Income Tax Expense to Average Total Assets (Worldwide)												
All	0.03753	0.00785	0.00677	<.01	0.03297	0.00677	<.01	187	0.04580	0.00785	0.00667	<.01
No DSE	0.03889	0.00863	0.00818	<.01	0.03444	0.00818	<.01	158	0.04580	0.00863	0.00818	<.01
No FP	0.03753	0.00908	0.00677	<.01	0.03367	0.00677	<.01	184	0.04580	0.00908	0.00677	<.01
No DSE/FP	0.03889	0.01015	0.00818	<.01	0.03522	0.00818	<.01	155	0.04580	0.01015	0.00818	<.01

NS = Non-significant results at the .05 level. Note: Variations in number of companies is due to lack of data for related computation.

Appendix 28. Selected Tax Ratio Means (Worldwide and Domestic) (Continued)

Inclusions	Three Groups				Two Groups			Three Groups - Only USAINE > 50% Abroad				
	Mean USAINE	Mean USOFAINE	Mean DC	p	Mean AINE	Mean DC	p	No	Mean USAINE	Mean USOFAINE	Mean DC	p
Panel 5: Ratio of Current Worldwide Income Tax Expense to Worldwide Operating Income												
All	0.2529	0.0995	0.0973	NS	0.2293	0.0973	NS	134	0.300	0.0995	0.0973	NS
No DSE	0.2645	0.1095	0.1164	NS	0.2417	0.1164	NS	157	0.300	0.1095	0.1164	NS
No FP	0.2529	0.1153	0.0973	NS	0.2342	0.0973	NS	181	0.300	0.1153	0.0973	NS
No DSE/FP	0.2645	0.1288	0.1164	NS	0.2472	0.1164	NS	154	0.300	0.1288	0.1164	NS
Panel 6: Ratio of Current Domestic Income Tax Expense to Domestic Net Sales Before Elimination as Reported in the Segmental Note												
All	0.0661	0.0075	0.0298	NS	0.0591	0.0298	NS	145	0.0335	0.0075	0.0298	NS
No DSE	0.0688	0.0080	0.0337	NS	0.0616	0.0337	NS	130	0.0335	0.0080	0.0337	NS
No FP	0.0661	0.0092	0.0298	NS	0.0604	0.0298	NS	142	0.0335	0.0092	0.0298	NS
No DSE/FP	0.0688	0.0100	0.0337	NS	0.0631	0.0337	NS	127	0.0335	0.0100	0.0337	NS
Panel 7: Ratio of Current Domestic Income Tax Expense to Domestic Assets Before Elimination as Reported in the Segmental Note												
All	0.03975	0.00714	0.00662	<.01	0.03473	0.00662	<.01	187	0.04209	0.00714	0.00662	<.01
No DSE	0.04133	0.00785	0.00800	<.01	0.03641	0.00800	<.01	158	0.04209	0.00785	0.00800	<.01
No FP	0.03975	0.00827	0.00662	<.01	0.03548	0.00662	<.01	184	0.04209	0.00827	0.00662	<.01
No DSE/FP	0.04133	0.00924	0.00800	<.01	0.03723	0.00800	<.01	155	0.04209	0.00924	0.00800	<.01
Panel 8: Ratio of Current Domestic Income Tax Expense to Domestic Operating Income												
All	0.287	0.098	0.148	NS	0.256	0.148	NS	179	2.344	0.098	0.148	<.01
No DSE	0.300	0.108	0.177	NS	0.270	0.177	NS	152	2.344	0.108	0.177	<.01
No FP	0.287	0.114	0.148	NS	0.262	0.148	NS	154	2.344	0.114	0.148	<.01
No DSE/FP	0.300	0.128	0.177	NS	0.277	0.177	NS	149	2.344	0.128	0.177	<.01

NS = Non-significant results at the .05 level. Note: Variations in number of companies is due to lack of data for related computation.

Appendix 29. Selected Means for Returns (Worldwide and Domestic)

Inclusions	Three Groups				Two Groups			Three Groups - Only USMNE > 50% Abroad				
	Mean USMNE	Mean USOFMNE	Mean DC	p	Mean MNE	Mean DC	p	No	Mean USMNE	Mean USOFMNE	Mean DC	p
Panel 1: Return on Average Total Assets (Worldwide Net Profit/Worldwide Average Total Assets)												
All	-1.129	-0.138	-0.671	NS	-0.934	-0.671	NS	215	0.043	-0.138	-0.671	NS
No DSE	-1.163	-0.029	-0.477	NS	-0.945	-0.477	NS	184	0.043	-0.029	-0.477	NS
No FP	-1.129	-0.237	-0.671	NS	-0.995	-0.671	NS	206	0.043	-0.237	-0.671	NS
No DSE/FP	-1.163	-0.090	-0.477	NS	-1.010	-0.477	NS	175	0.043	-0.090	-0.477	NS
Panel 2: Ratio of Net Sales to Average Total Assets (Worldwide)												
All	1.100	0.6843	0.7550	<.01	1.0184	0.7550	<.01	214	1.3186	0.6843	0.7550	NS
No DSE	1.1234	0.7298	0.8891	<.01	1.0477	0.8891	<.01	182	1.3186	0.7298	0.8891	NS
No FP	1.100	0.5339	0.7550	<.01	1.0154	0.7550	<.01	205	1.3186	0.5339	0.7550	<.05
No DSE/FP	1.1234	0.5845	0.8891	<.01	1.0464	0.8891	<.01	174	1.3186	0.5845	0.8891	<.05
Panel 3: Ratio of Operating Income to Average Total Assets (Worldwide)												
All	0.080	-0.093	-0.620	NS	0.046	-0.620	<.01	212	0.126	-0.093	-0.620	NS
No DSE	0.092	0.018	-0.435	NS	0.078	-0.435	<.05	182	0.126	0.018	-0.435	NS
No FP	0.080	-0.200	-0.620	NS	0.038	-0.620	<.01	203	0.126	-0.200	-0.620	NS
No DSE/FP	0.092	-0.051	-0.435	NS	0.072	-0.435	<.05	172	0.126	-.0.051	-0.435	NS
Panel 4: Ratio of Domestic Sales to Domestic Assets (Before Elimination as Reported in the Segmental Note)												
All	1.2249	0.8239	0.7972	<.01	1.1461	0.7972	<.01	214	1.4105	0.8239	0.7972	NS
No DSE	1.2606	0.8787	0.8973	<.01	1.1872	0.8973	<.01	183	1.4105	0.8787	0.8973	NS
No FP	1.2249	0.6595	0.7972	<.01	1.1404	0.7972	<.01	205	1.4105	0.6595	0.7972	NS
No DSE/FP	1.2606	0.7221	0.8973	<.01	1.1837	0.8973	<.01	174	1.4105	0.7221	0.8973	NS

NS = Non-significant results at the .05 level. Note: Variations in number of companies is due to lack of data for related computation.

Appendix 29. Selected Means for Returns (Worldwide and Domestic) (Continued)

Inclusions	*Three Groups*				*Two Groups*			*Three Groups - Only USMNE > 50% Abroad*				
	Mean USMNE	*Mean USOFMNE*	*Mean DC*	*p*	*Mean MNE*	*Mean DC*	*p*	*No*	*Mean USMNE*	*Mean USOFMNE*	*Mean DC*	*p*
Panel 5: Ratio of Domestic Operating Income to Domestic Assets Before Elimination as Reported in the Segmental Note)												
All	*0.089*	*-0.116*	*-0.629*	*<.05*	*0.046*	*-0.629*	*<.01*	*207*	*-0.018*	*-0.116*	*-0.629*	*NS*
No DSE	*0.104*	*-0.002*	*-0.445*	*NS*	*0.082*	*-0.445*	*<.05*	*176*	*-0.018*	*-0.002*	*-0.445*	*NS*
No FP	*0.089*	*-0.242*	*-0.629*	*<.05*	*0.037*	*-0.629*	*<.05*	*198*	*-0.018*	*-0.242*	*-0.629*	*NS*
No DSE/FP	*0.104*	*-0.089*	*-0.445*	*NS*	*0.075*	*-0.445*	*<.05*	*167*	*-0.018*	*-0.089*	*-0.445*	*NS*

NS = Non-significant results at the .05 level. Note: Variations in number of companies is due to lack of data for related computation.

Appendix 30. Hypotheses Testing Results - Paired t-Tests

Paired t-test Results			
	T	*p*	*Significant*
Hypothesis Six - Two-Factor Formulary Apportionment	*0.27*	*>.05*	*NS*
Hypothesis Seven - Three-Factor Formulary Apportionment	*2.28*	*>.05*	*NS*

NS = Non-significant results at the .05 level.

Appendix 31. Hypotheses Testing Results - GLM Without Covariate of Age

Results From GLM without Covariate for Age																				
	Hypothesis 1		*Hypotheses 2 A and B*				*Hypothesis 3*		*Hypothesis 4*		*Hypotheses 5 A and B*				*Hypothesis 6*		*Hypotheses 7 A and B*			
	COSG Ratio (WW)		*Operating Income Ratio (WW)*		*Operating Income Ratio (US)*		*Net Profit Ratio (WW)*		*Effective Income Tax Rate (WW)*		*Eff Oper Income Tax Rate (WW)*		*Eff Oper Income Tax Rate (US)*		*Return on Assets (WW)*		*Operating Return on Assets (WW)*		*Operating Return on Assets(US)*	
Grouping	*F*	*p*	*F*	*p*	*F*	*p*	*F*	*p*	*F*	*p*	*F*	*p*	*F*	*p*	*F*	*p*	*F*	*p*	*F*	*p*
3 Group - USMNE, USOFMNE, DC																				
All Companies	2.16	NS	6.78	<.01	6.53	<.01	7.01	<.01	2.81	NS	0.81	NS	0.61	NS	0.27	NS	3.17	<.05	2.78	NS
No DSE	2.44	NS	5.04	<.01	4.82	<.01	5.07	<.01	2.26	NS	0.62	NS	0.45	NS	0.37	NS	2.16	NS	1.93	NS
No FP	1.90	NS	10.18	<.01	9.85	<.01	10.53	<.01	2.27	NS	0.78	NS	0.57	NS	0.27	NS	2.96	NS	2.47	NS
No DSE or FP	1.88	NS	7.68	<.01	7.41	<.01	7.74	<.01	2.17	NS	0.58	NS	0.41	NS	0.38	NS	1.98	NS	1.69	NS
2 Group - MNE, DC																				
All Companies	4.00	<.05	1.26	NS	1.00	NS	1.30	NS	4.17	<.05	1.21	NS	0.72	NS	0.22	NS	6.19	<.05	5.36	<.05
No DSE	4.09	<.05	0.89	NS	0.63	NS	0.89	NS	3.30	<.05	0.89	NS	0.47	NS	0.39	NS	4.29	<.05	3.80	NS
No FP	3.57	NS	1.33	NS	1.15	NS	1.37	NS	4.32	<.05	1.27	NS	0.77	NS	0.28	NS	5.67	<.05	4.65	<.05
No DSE or FP	3.40	NS	0.95	NS	0.74	NS	0.95	NS	3.43	NS	0.94	NS	0.52	NS	0.45	NS	3.90	<.05	3.27	NS

NS = Non-significant results at the .05 level.

Appendix 32
List of Companies (SIC Code 2800-2899) Required To File with the SEC (1989 or 1991)

ABBOTT LABORATORIES
ACETO CORP
ADM TRONICS UNLIMITED
ADVANCED MAGNETICS INC
ADVANCED VIRAL RESEARCH CORP
AGRIBIOTECH INC
AGRICULTURAL MINERALS CO
AIR PRODUCTS & CHEM
AKZO N V
AL LABORATORIES
ALBERTO CULVER CO
ALCIDE CORP
ALFACELL CORP
ALFIN INC
ALKERMES INC
ALLERCARE INC
ALLERGAN INC
ALLIANCE PHARMACEUTICAL CORP
ALLURE COSMETICS LTD
ALOETTE COSMETICS INC
ALPHA 1 BIOMEDICALS INC
ALTEON INC
ALZA CORP
ALZA TTS RESEARCH PARTNERS LTD
AM DIAGNOSTICS INC
AMERICAN BIOGENETIC SCIENCES INC
AMERICAN BIONETICS INC
AMERICAN CYANAMID
AMERICAN EQUINE PRODUCTS INC
AMERICAN HOME PRODUCTS CORP
AMERICAN PACIFIC CORP
AMERICAN PLASTICS & CHEMICALS
AMERICAN VANGUARD CORP
AMGEN INC
ANERGEN INC
ANGIO MEDICAL CORP
ANGSTROM TECHNOLOGIES INC
ANTIGENICS INC
APHTON CORP
APPLIED DNA SYSTEMS
APPLIED MICROBIOLOGY INC
ARCADIAN CORP
ARCO CHEMICAL CO
ARMOR ALL PRODUCTS CORP
ARMSTRONG PHARMACEUTICALS INC
ARROW MAGNOLIA INTERNATIONAL INC
ATHENA NEUROSCIENCES INC
AVON PRODUCTS INC
BALCHEM CORP
BARR LABORATORIES INC
BARRIE RICHARD FRAGRANCES INC
BARRIER SCIENCE & TECHNOLOGY INC
BAXTER INTERNATIONAL INC
BEAUTICONTROL COSMETICS INC
BELMAC CORP
BENEDICT NUCLEAR PHARMACEUTICALS
BETZ LABORATORIES INC
BIOCRAFT LABORATORIES INC
BIOGEN INC
BIOMATRIX INC
BIOMIRA INC
BIOPOOL INTERNATIONAL INC
BIOSPECIFICS TECHNOLOGIES CORP
BIOTECH RESEARCH LABORATORIES INC
BLOCK DRUG CO INC
BLOCKERS C A
BMC ACQUISITION
BOLAR PHARMACEUTICALS CO
BORDEN CHEMICALS & PLASTICS
BORG WARNER CORP
BRISTOL MYERS SQUIBB
BURST AGRITECH INC
CABOT CORP
CALGON CARBON CORP
CAMBREX CORP
CAMBRIDGE BIOTECH CORP
CAMBRIDGE MEDICAL TECHNOLOGY CORP
CAMBRIDGE NEUROCSIENCE INC
CAMILLE SAINT MORITZ INC
CARRINGTON LABORATORIES INC
CARTER WALLACE INC
CCA INDUSTRIES INC
CCC FRANCHISING CORP
CEL SCI CORP
CELLPRO INC
CELLULAR PRODUCTS INC
CELTRIZ LABORATORIES
CENTOCOR INC
CEPHALON INC
CHANTAL PHARMACEUTICAL CORP
CHATTEM INC
CHEMDESIGN CORP
CHEMED CORP
CHEMEX PHARMACEUTICALS INC

CHESAPEAKE BIOLOGICAL LABORATORIES INC
CHURCH & DWIGHT
CISTRON BIOTECHNOLOGY INC
CLASSICAL SHOPPER
CLEOPATRA KOHLIQUE INC
CLOROX CO
COLGATE PALMOLIVE CO
COLLABORATIVE RESEARCH INC
COLLAGEN CORP
COLUMBIA LABORATORIES
CONKLIN CO
COOPER LABORATORIES INC
COR THERAPEUTICS INC
CORTEX PHARMACEUTICALS
COVASORB BIONIC SURFACES INC
CROMPTON & KNOWLES CORP
CURATIVE TECHNOLOGIES INC
CURTIS HELENE INDUSTRIES INC
CWE INC
CYANOTECH CORP
CYGNUS THERAPEUTICS SYSTEMS
CYTEL CORP
CYTRX CORP
DDI PHARMACEUTICALS
DEL LABORATORIES INC
DEL PAINT CORP
DEP CORP
DEPRENYL RESEARCH LIMITED
DESOTO INC
DETREX CORP
DEXTER CORP
DIAGNOSTIC PRODUCTS CORP
DISEASE DETECTION INTERNATIONAL INC
DOAK PHARMACAL CO INC
DOW CHEMICAL
DOW CORNING
DRUG RESEARCH CORP PLC
DRUG SCREENING SYSTEMS INC
DUPONT E I DE NEMOURS
DURAMED PHARMACEUTICALS INC
DURATEK
ECOGEN INC
ECOLAB INC
EDGECLIFF INC
ELAN CORP PLC
ELECTROCHEMICAL INDUSTRIES FRUTAROM LTD
ENVIRONMENTAL DIAGNOSTICS INC
ENZON INC
ENZYMES OF AMERICA HOLDING CORP
EPITOPE INC
EPOLIN INC
ESSEX CHEMICAL CORP
ETHIGEN CORP
ETHYL CORP
EX EM INC
EXOVIR INC
FAIRMOUNT CHEMICAL CO
FERRO CORP
FIRST MEDICAL INTERNATIONAL INC
FIRST MISSISSIPPI CORP
FLAMEMASTER CORP
FMC CORP
FOREST LABORATORIES INC
FOUNTAIN PHARMACEUTICALS
FREEPORT MCMORAN INC
FREEPORT MCMORAN RESOURCE PARTNERS LTD
FULLER H B CO
G I HOLDINGS
G INDUSTRIES
GAF BROADCASTING CO
GAF BUILDING MATERIALS CORP
GAF CORP
GAF REAL PROPERTIES
GAFTECH CORP
GAMMA 10 PLASTICS
GAMMA BIOLOGICALS INC
GENELABS TECHNOLOGIES INC
GENETECH INC
GENETIC THERAPY INC
GENSIA PHARMACEUTICALS INC
GENZYME CORP
GENZYME DEVELOPMENT PARTNERS
GEORGIA GULF CORP
GLAXO HOLDINGS PLC
GLYCOMED INC
GNI GROUP
GOODRICH B F
GRACE W R & CO
GREAT AMERICAN MANAGEMENT & INVESTMENT
GREAT LAKES CHEMICAL
GREENWICH PHARMACEUTICALS INC
GROW GROUP INC
GRUENE INC
GUARDSMAN PRODUCTS INC
GUEST SUPPLY INC
GYNEX PHARMACEUTICALS INC
HALSEY DRUG CO
HARMONY GROUP LTD
HAUSER CHEMICAL RESEARCH
HEALTH CARE PRODUCTS INC
HEALTHCARE TECHNOLOGIES
HELIX BIOCORE INC
HERCULES
HERVALIFE INTERNATIONAL
HIGH PLAINS CORP
HIMEDICS
HITOX CORP
HOECHST CELANESE CORP
HOUSTON BIOTECH PARTNERS
HYCOR BIOMEDICAL INC
ICN BIOMEDICALS INC
ICN PHARMACEUTICALS INC
ICOS CORP
IDEC PHARMACEUTICALS CORP
IDEXX LABORATORIES INC
IGENE BIOTECHNOLOGY INC
IGI INC
IMC FERTILIZER GROUP INC

IMCERA GROUP INC
IMMUCELL CORP
IMMUCOR INC
IMMULOGIC PHARMACEUTICAL CORP
IMMUNE RESPONSE CORP
IMMUNEX CORP
IMMUNOGEN INC
IMMUNOLOGICAL RESEARCH INSTITUTE OF AMERICA
IMMUNOTHERAPEUTICS INC
IMRE CORP
IMREG INC
IMUTECH INC
INCSTAR CORP
INDSPEC CHEMICAL CORP
INFERGENE CO
INTERFERON PHARMACEUTICALS INC
INTERFERON SCIENCES INC
INTERFERON SCIENCES RESEARCH PARTNERS
INTERNATIONAL FLAVORS & FRAGRANCES INC
INTERNATIONAL MUREX TECHNOLOGIES CORP
INTERNATIONAL SPECIALTY PRODUCTS INC
INTERNEURON PHARM
INTERPHARM LABORATORIES LTD
INVITRON CORP
ISIS PHARMACEUTICALS INC
IVAX CORP
JOHNSON PRODUCTS CO INC
JOHNSON & JOHNSON
JONES MEDICAL INDUSTRIES INC
KAY MARY CORP
KAY MARY COSMETICS INC
KV PHARMACEUTICAL CO
LANNETT CO
LAWTER INTERNATIONAL INC
LEARNONAL
LEE PHARMACEUTICALS
LEECO DIAGNOSTICS INC
LESCO INC
LEV SCIENTIFIC INDUSTRIES LTD
LIDAK PHARMACEUTICALS
LIFE SCIENCES INC
LIFE TECHNOLOGIES INC
LIFECORE BIOMEDICAL INC
LILLY ELI & CO
LILLY INDUSTRIAL COATINGS INC
LOCTITE CORP
LUBRIZOL CORP
LUMINALL PAINTS INC
MACANDREWS & FORBES GROUP INC
MACDERMID INC
MAGNACO ENTERPRISES INTERNATIONAL INC
MARION MERRELL DOW INC
MARITIME TRANSPORT & TECHNOLOGY INC
MARROW TECH INC
MARSAM PHARMACEUTICAL CORP
MEDAREX INC
MEDCHEM PRODUCTS INC
MEDCO RESEARCH INC
MEDENTA CORP
MEDEVA PLC
MEDICIS PHARMACEUTICAL CORP
MEDIMMUNE INC
MEDITECH PHARMACEUTICALS
MELAMINE CHEMICALS
MEM CO INC
MERCK & CO
MERICK
MERIDIAN DIAGNOSTICS INC
MGI PHARMA INC
MICROBIOLOGICAL SCIENCES INC
MINING SERVICES INTERNATIONAL CORP
MISSISSIPPI CHEMICAL CORP
MOLECULAR BIOSYSTEMS INC
MOLECULON INC
MOMENTUM INC
MONSANTO
MONTANA NATURALS INTERNATIONAL INC
MOORE BENJAMIN & CO
MORGRO CHEMICAL CO
MORTON INTERNATIONAL INC
MYLAN LABORATORIES INC
NAC INDUSTRIES CORP
NALCO CHEMICAL CO
NAPIER INTERNATIONAL TECHNOLOGIES
NATIONAL DIVERSIFIED SERVICES INC
NATURAL ALTERNATIVES INTERNATIONAL
NATURES BOUNTY
NATURES SUNSHINE PRODUCTS
NCH CORP
NEOZYME CORP
NEUROGEN CORP
NEUTROGENA CORP
NEW YORK BRONZE POWDER COMPANY INC
NL INDUSTRIES
NORTH AMERICAN BIOLOGICALS
NORTH AMERICAN VACCINE INC
NORTHERN INSTRUMENTS CORP
NOVA CORPORATION OF ALBERTA
NOVA PHARMACEUTICAL CORP
NOVAFERON LABS
NOVEN PHARMACEUTICALS INC
NOVO NORDISK
NU WEST INDUSTRIES INC
NUTRAMAX PRODUCTS INC
NUTRASWEET CO
NUTRI PRODUCTS INC
OCEAN BIO CHEM INC
OLIN CORP
OMNITEC INC
ONCOR INC
P LEINER NUTRITIONAL PRODUCTS CORP
PACER TECHNOLOGY
PAR PHARMACEUTICALS INC
PARLUX FRAGRANCES INC
PDK LABS INC
PENWEST LTD
PERTH INC
PETROLITE CORP

PFIZER INC
PHARMACONTROL CORP
POLAR MOLECULAR CORP
POLYDEX PHARMACEUTICALS LTD
PPG INDUSTRIES INC
PRATT & LAMBERT INC
PROBAC INTERNATIONAL CORP
PROCTER & GAMBLE CO
PROCYTE CORP
QUADRA LOGIC TECHNOLOGIES
QUANTUM CHEMICAL CORP
QUIDEL CORP
RECEPTECH CORP
REGENERON PHARMACEUTICALS INC
REGENEX INC
REPLIGEN CORP
RESCON TECHNOLOGY
REVLON INC
REXENE CORP
RHONE POULENC RORER INC
RHONE POULENC S A
RIBI IMMUNOCHEM RESEARCH INC
RINGER CORP
RLI INC
ROBERTS PHARMACEUTICAL CORP
ROHM & HAAS CO
ROLFITE CO
ROPAK LABORATORIES
ROSS COSMETICS DISTRIBUTION CENTERS INC
ROYCE LABORATORIES INC
ROYSTER CO
RPM INC
RPS CORP
SAFE WASTE SYSTEMS INC
SASCO PRODUCTS INC
SCHERER R P INTERNATIONAL
SCHERING PLOUGH CORP
SCHULMAN A
SCM CORP
SCOTTS COMPANY
SCOTTS LIQUID GOLD INC
SENETEK PLC
SEPRACOR INC
SHERWIN WILLIAMS CO
SINECURE FINANCIAL CORP
SMITH & NEPHEW PLC
SMITHKLINE BEECHAM PLC
SOMATIX THERAPY CORP
SOMATOGEN
SPEARHEAD INDUSTRIES INC
SPECTRA PHARMACEUTICAL SERVICES INC
SPECTRUM PHARMACEUTICALS CORP
SPI PHARMACEUTICALS INC
ST IVES LABORATORIES INC
STANHOME INC
STEPAN CO
STEPHAN CO
STERLING CHEMICALS INC
SUMMA MEDICAL CORP
SUMMA RX LABORATORIES INC
SURE HAIR INC
SYBRON CHEMICALS INC
SYNALLOY
SYNBIOTICS CORP
SYNERGEN INC
SYNTEX CORP
SYNTHETECH INC
SYNTRO CORP
SYSTEMIX INC
T CELL SCIENCES INC
TAGO INC
TECHNE CORP
TECHNICLONE INTERNATIONAL CORP
TECHNOLOGY MANAGEMENT & MARKETING INC
TETRA TECHNOLOGIES
TEVA PHARMACEUTICAL INDUSTRIES LIMITED
THERAGENICS CORP
TOTH ALUMINUM CORP
TOWNE PAULSEN INC
TRANS RESOURCES
UCC INVESTORS HOLDING INC
UNIGENE LABORATORIES
UNIMED INC
UNION CARBIDE CHEMICALS & PLASTICS CO
UNION CARBIDE CORP
UNIROYAL CHEMICAL ACQUISITION CORP
UNITED GUARDIAN INC
UPJOHN COMPANY
URETHANE TECHNOLOGIES
US BIOSCIENCE INC
VALHI INC
VALSPAR CORP
VERITEC INC
VERTEX PHARMACEUTICALS INC
VESTAR INC
VIGORO CORP
VIMRX PHARMACEUTICALS INC
VIPONT ROYALTY INCOME FUND LTD
VIRAGEN INC
VIRATEK INC
VITAFORT INTERNATIONAL CORP
WARNER LAMBERT CO
WATERCHEM MANUFACTURING
WD 40 CO
WELLCOME PLC
WELLMAN INC
WESTBRIDGE RESEARCH GROUP
WILLIAM & CLARISSA INC
WISCONSIN PHARMACAL CO
WITCO CORP
WPI PHARMACEUTICAL INC
XRG INTERNATIONAL INC
XYTRONYX INC
ZENITH LABORATORIES INC
ZILA INC

VITA

SHEILA DALE FOSTER

EDUCATION

Ph.D. in Business Administration, Virginia Polytechnic Institute and State University. Major field: Accounting. Minor fields: Management and Management Information Systems. December 1994.

Post-baccalaureate Certificate in Accounting, Virginia Commonwealth University. Major field: Accounting. May 1979.

Master of Education, Virginia Commonwealth University. Major field: Guidance and Counseling. May 1975.

Bachelor of Science, Radford College (Radford University). Major field: Elementary Education. June 1967.

TEACHING EXPERIENCE

Assistant Professor, The Citadel. 1992 - present.

Assistant and Associate Professor, Lynchburg College in Virginia. 1984-1992.

Graduate Teaching Assistant and Instructor, Virginia Polytechnic Institute and State University. 1988-1992.

Elementary School Teacher (Grades 4-6), Chesterfield County Public Schools, Chesterfield, Virginia. 1970-1976.

Elementary School Teacher (Grade 4), Montgomery County Public Schools, Blacksburg, Virginia. 1968-1970.

Elementary School Teacher (Grade 6), Campbell County Public Schools, Rustburg, Virginia. 1967-1968.

BUSINESS EXPERIENCE

Certified Public Accountant, Sheila Foster-Stinnett, CPA, Lynchburg, Virginia. 1984-1992.

Company Controller, Central Virginia Laboratories and Consultants, Inc., Lynchburg, Virginia. 1986-1990.

Company Accountant, Environmental Machining and Design, Inc., Lynchburg, Virginia. 1987-1992.

Staff Accountant, James E. Pfeiffer, CPA, Emporia, Virginia. 1982-1984.

PROFESSIONAL AND HONORARY MEMBERSHIPS

Dean's List, Radford College, every semester. 1963-67.

Graduated with Honors, Radford College. 1967.

Certified Public Accountant (Virginia, issued in 1984).

Beta Alpha Psi, Virginia Polytechnic Institute and State University.

Virginia Society of Certified Public Accountants, member.

Institute of Management Accountants, member and director.

Central Virginia Chapter of Virginia Society of Certified

Public Accountants, charter member.
Central Virginia Entrepreneurial Network, charter member.
Meherrin River Arts Council, Emporia, Virginia, Vice-President (1982-83), President (1983-84).
Junior Woman's Club, Emporia, Virginia, Vice-President (1983-84).

PRESENTATIONS AND PUBLICATIONS

Mary B. Greenawalt and Sheila D. Foster. **"Internal Control: 'In Concert."** Annual meeting, American Accounting Association-New Zealand, July 1994.

Jim Connell, Robert Darville, and Sheila Foster. **"The Current Status of 150-Hour Rule Legislation: A National Overview."** Mid-Atlantic Regional meeting, American Accounting Association, March 31-April 2, 1994.

Mary B. Greenawalt and Sheila D. Foster. **"Internal Auditing Education: A Comparison Across Countries."** Accepted for publication in Managerial Auditing Journal.

Sheila D. Foster, Nancy Saltz, James Connell, and Robert Darville. **"Survey of U.S. Colleges Re: Preparation for the 150-Hour Rule."** Paper in progress.

Nancy Saltz and Sheila D. Foster. **"Auditing with the Classics."** Regional conference, Writing Across the Curriculum Conference, February 19, 1993.

Nancy Saltz and Sheila D. Foster. **"Viva La Difference! American Business Students Learn About Cultural Differences."** Journal of Management Accounting, Volume 75, Number 11, May 1994.

Mary B. Greenawalt and Sheila D. Foster. **"Experiential Learning for the Internal Auditing Student: An Internal Control Project."** Managerial Auditing Journal, Volume 7, Number 3, 1992.

Mary B. Greenawalt and Sheila F. Stinnett (Sheila D. Foster). **"Experiential Learning for the Internal Auditing Student: An Internal Control Project."** Internal Auditor Education and Training Colloquium, New York, New York, June 16, 1991.

Mary B. Greenawalt and Sheila F. Stinnett (Sheila D. Foster). **"'Real-World' Auditing Experience for the Undergraduate Auditing Student - A Project Approach."** Ohio Regional Meeting, American Accounting Association, May 1991.

Nancy L. Saltz and Sheila D. Foster. **"A Simplified Worksheet for the Statement of Cash Flows."** Submitted for publication consideration.

Gerald Rosson and Sheila F. Stinnett (Sheila D. Foster). **"Accounting Practice Sets: Shane's Delivery Service."** In-house publication, Lynchburg College in Virginia.

Sheila F. Stinnett (Sheila D. Foster). **"Tax Notes"** Monthly column, E-NET, the newsletter of the Central Virginia

Entrepreneurial Network.

Sheila D. Foster and James O. Hicks. **"Survey of Ethics Among Computer Executives."** Working paper.

Sheila F. Stinnett (Sheila D. Foster). **"Employment Taxes for Small Businesses."** Workshop seminar, Central Virginia Entrepreneurial Network, Lynchburg, Virginia, October, 1990.

Sheila F. Stinnett (Sheila D. Foster). Panel Discussion, **"Business Issues in the 90's."** Annual regional meeting, Institute of Management Accountants (formerly the National Association of Accountants), April, 1990.

PERSONAL

Two sons.