EFFECTIVE TAX RATES FROM FINANCIAL STATEMENTS**

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"BANKS pay an effective tax rate of 6.4 percent." "Wholesalers pay an effective tax rate of 34.8 percent." What are these often-quoted tax rates? And, more important, do they matter?

To answer the second question first, yes, effective tax rates do matter. One of the driving forces behind tax reform was the concern that many large corporations, and indeed industries, were not paying their "fair" share of taxes. Over the past several years, studies showing that many large companies pay little or no tax have been widely reported in the various media and quoted by politicians to illustrate the need to restructure our tax system.

Specific provisions in the current tax reform proposals can be traced directly to this concern. For example, members of the tax-writing committees have repeatedly asserted the need for a strong minimum tax to ensure that all taxpayers pay some tax. As a result, the tax reform package under current consideration has a tough minimum tax proposal. Even more interesting is a provision in the bill passed by the Senate Finance Committee to treat one-half of the excess of book income over the alternative minimum taxable income base as a tax preference.

The roots of this provision lie in the desire to tax economic income, while recognizing that the tax code does not adequately measure it. For the first time ever, a corporation's tax liability could depend on how its financial statement income is measured. Although this would impose pressure on the accounting rules, it is, politically, a very attractive idea. Members of Congress would be better able to answer questions from constituents and watchdog groups about a tax system that permits large profitable companies to pay no tax.

Some critics argue that average effective tax rates based on financial statements are inappropriate for measuring the efficiency in a tax system. Others assert that the methodology is flawed and that the sample of companies within an industry used in the studies is not always representative of that industry. All these concerns have merit. Nonetheless, average effective tax rates have had a major impact on recent tax-policy decisions—and will continue to do so as long as large companies disclose their income and the taxes they pay.

This paper discusses the different methodologies for measuring average effective tax rates from financial statements, the problems with the various methodologies, and some suggestions for improvements.

Types of Average Effective Tax Rates

Effective tax rates can be divided into two broad classifications: "average" effective tax rates and "marginal" effective tax rates. The first are generally defined as the amount of tax paid (or accrued) as a percentage of income. The marginal tax rate is the percentage of the expected return on an additional investment that is expected to be paid in tax.[1] These two measures of effective tax rates do not normally reach similar results, for many reasons. For example, marginal rates depend on expected future income from the investment and anticipated inflation but usually assume all deductions are fully usable and that taxpayers minimize their tax liability (e.g., would not use straight-line rather than accelerated depreciation or FIFO rather than LIFO inventory method). In contrast, average effective tax rates take into account past inflation, actual profits, and actual tax choices.

Marginal rates are generally designed to measure incentives to invest in new assets, whereas average effective tax rates are more useful for measuring the distribution of the tax burden and cash flows resulting from prior investments. Marginal tax rates as calculated are generally not as sensitive to detailed tax law

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provisions as are average rates. For example, they would generally not reflect the effect of the bad debt reserve deduction or how much dividend income is subject to tax. Average rates are not, however, useful for analyzing the incentives to invest in one type of asset rather than another.

Average effective tax rates can be computed either from *Corporation Statistics of Income* (SOI) data or from information disclosed in financial statements. Average rates based on SOI obviously have a much richer data base than rates computed from financial statement figures. They lend themselves, with appropriate adjustments, to a more precise measure of taxes compared with the income on which the taxes are imposed because more data are available for taking into account the effect of carryovers. Despite these advantages, average rates based on SOI data cannot be used as a straight substitute for rates on financial data: the rates are not as current and the data not as readily available to the public (particularly the data needed to adjust for carryovers). Also, separate U.S. and foreign rates cannot be calculated.

Average effective tax rates based on financial statements can be calculated in several different ways. In financial statements, corporations disclose net income before tax, income tax expense, and net income after tax. The income tax expense (or provision for taxes) is divided into current and deferred expense. Current tax expense represents taxes currently payable; deferred tax expense is treated as a current year's expense for financial reporting purposes, but it represents a liability for taxes payable in the future. Deferred taxes generally result from differences in the timing of income recognition or deductions allowed under the rules for computing book income and those for computing taxable income.

Tax rates may be calculated by comparing three different measures of taxes paid with book income: (1) current tax expense, which represents taxes expected to be currently payable; (2) the total provision for taxes (current plus deferred), which represents the taxes payable on that year's book income in the current year or in the future; or (3) current taxes plus some portion of deferred taxes.

Most studies of average effective tax rates derived from the financial statements and, indeed, the disclosure of effective tax rates in the financial statements are broadly based on one of these three approaches. (Each study makes some adjustments—both in the measurement of taxes paid and to book income—but the major difference between the studies lies in the definition of what "taxes paid" means.)

Financial statements disclose both U.S. taxes and foreign taxes, and book income is allocated between U.S. and foreign sources. This means that it is possible to calculate an effective tax rate for worldwide tax on worldwide income, domestic tax on domestic income, and foreign tax on foreign income. For making tax-policy decisions, it is the effective tax rate based on U.S. tax paid on U.S. income that is perhaps most widely used.

Tax Information in Financial Statements

Corporations must disclose certain details about their income tax expense in their annual reports to shareholders.[2] They must disclose the current and deferred portion of the income tax expense. The Securities and Exchange Commission (SEC) also requires that publicly owned corporations include in their annual reports a reconciliation between their actual effective tax rate and the maximum statutory corporate tax rate (currently 46 percent). The effective tax rate as shown in the financial statements compares the total provision for income taxes (current and deferred) with net income before tax.

The differences between tax and financial accounting rules, and tax credits, account for the difference between effective tax rates and the statutory rate. Some of these differences are referred to as timing differences, which will reverse in a future period, and others are permanent differences, which will not. The difference between effective tax rates disclosed in the financial statements and the statutory rate

arise from permanent differences and tax credits. Differences between effective tax rates that use only the current tax expense as the measure of taxes paid arise from both timing and permanent differences.

Permanent differences arise from statutory provisions that exempt some types of income from taxation, allow for tax purposes deductions for items that are not treated as expenses in any year for book accounting purposes, and do not permit other expenses allowed as expenses in computing book income as deductions in determining taxable income. Other permanent differences arise from items involved in the calculation of taxable income that are never involved in the calculation of pretax accounting income. An example would be the deduction for intercorporate dividends received. Another type of permanent difference is a tax credit, such as the investment tax credit.

Timing differences stem from transactions that affect taxable income in a period different from that when they affect pretax accounting income. Each timing difference originates in one period and reverses in one or more later period; for example, depreciation may be reported on an accelerated basis for tax purposes but on a straight-line basis for accounting purposes.

The accounting recognition of the tax effects of timing differences is based on a concept called "interperiod tax allocation." Under this concept, the provision for income taxes in the financial statements includes all taxes expected to be paid on the current year's pretax income. This includes both the taxes expected to be paid in the current year and taxes to be paid in the future attributable to the current year's book income.

The accounting profession is currently re-evaluating the concept of comprehensive interperiod tax allocation.[3] The build-up of huge deferred taxes in some companies' balance sheets is a source of concern, particularly about whether these deferred taxes represent a true liability. Although it is unlikely that the accounting rules would be changed to include as a tax expense only the current liability for taxes, it is possible that the treatment of deferred taxes may be modified. This would be particularly true if tax-law changes cause in a sharp drop in the rates, as is expected with the current tax reform proposals. Any modification in the treatment of deferred taxes could generate corresponding changes in the effective tax rate computation in financial statements.

Recent Effective Tax Rate Studies

To illustrate the different methodologies used in published studies for computing average effective tax rates from financial statements, highlights from the Pease-Dorgan, Citizens for Tax Justice, and *Tax Notes* studies are examined below. A comparison of the overall average worldwide and U.S. rates are shown in Tables 1 and 2.

Pease-Dorgan Corporate Tax Rate Study

For several years, from 1972 until 1979, the Joint Committee on Taxation prepared studies of effective tax rates for Congressman Vanik. These studies showed

Table 1 - Comparison of Average Worldwide Effective Tax Rates 1980-84
[In percent]

	1980	1981	1982	1983	1984
Pease-Dorgan	34.3	29.6	29.6	29.2	N/A
Tax Notes	32.5	28.9	25.6	29.4	31.0

Table 2 - Comparison of Average U.S. Effective Tax Rates 1980-84 [In percent]

	1980	1981	1982	1983	1984
Pease-Dorgan	21.8	17.2	16.1	16.7	N/A
Tax Notes	24.9	21.8	16.7	21.1	23.2
Citizens for Tax Justice	N/A	16.0	11.5	14.7	16.6

Sources: Pease-Dorgan (1983); Tax Notes (1986), and Citizens for Tax Justice (1985).

effective tax rates on a company-by-company basis for selected large corporations. Worldwide and foreign rates were shown and a highly criticized U.S. rate on worldwide income. (Critics consider this rate meaningless because it does not take foreign taxes into account in the numerator although the corresponding foreign income is included in the denominator.)

After Congressman Vanik left office, Congressmen Pease and Dorgan requested the Joint Committee on Taxation in 1981 to continue preparing the study. Several changes were made to the methodology including elimination of the controversial U.S. rate on worldwide income. These studies were prepared for the years 1980 through 1983 (and the 1984 study is expected to be published shortly).[4] They were published at a time when interest in tax reform was becoming more widespread and, because of their timeliness and improved methodology, attracted more public attention than the earlier studies.

The most recent Pease-Dorgan corporate tax rate study presents 1983 effective corporate income tax rates, by industry, based on data from approximately 220 large corporations. The study shows worldwide, U.S., and foreign effective tax rates. It also compares effective tax rates for the period 1980–1983 and computes a four-year average rate.

The Pease-Dorgan study calculates tax rates by comparing current tax expense with net income before tax. The reason given for not including deferred taxes in the tax-rate calculation is that deferred taxes often roll over from one year to the next: in an inflationary or growth period, deferred taxes are paid, if ever, in the distant future. This method assumes, in effect, that the present value of deferred taxes is zero. These effective tax rates may be understated as a result of this assumption, the study observes. One could argue that the notion of deferred taxes rolling from one year to the next is incorrect. In fact, it is only "net" deferred taxes that can be considered to remain unchanged and thus roll over from one year to the next; some timing differences reverse in the period and others arise, resulting in the amount offset only appearing to remain unchanged.

Some adjustments are made to reported book income because the accounting rules for grouping companies in a consolidated financial statement differ from the income tax rules for filing consolidated tax returns. Book income is adjusted in an attempt to eliminate the effect of the different consolidation rules. Book income is also adjusted to take into account the current portion of state income taxes as a deduction.

Citizens for Tax Justice Study

The Citizens for Tax Justice study,[5] which was first published for 1981, follows the same basic methodology as Pease-Dorgan. Different treatment of safe-harbor leasing and investment tax credit car-

ryovers produce differences for some companies, but, the results are similar for many. Industry rates do differ, however, mostly because of differences in the sample chosen.

This study only calculates the U.S. tax rate on U.S. income—not worldwide tax on worldwide income or foreign tax on foreign income. The other major distinction between Pease-Dorgan and Citizens for Tax Justice is that the Citizens for Tax Justice study gives rates on a company-by-company basis for each year, while Pease-Dorgan gives only industry rates. Disclosing company-by-company rates has been a powerful political tool that should not be underestimated.

Tax Notes Study

For several years *Tax Notes* prepared a study of effective corporate tax rates. After a three-year hiatus, *Tax Notes* has just published (May 19, 1986) an extensive new study.[6] Its measure of the effective tax rate is the ratio of taxes payable for the current year plus a portion of deferred taxes to book income. That portion of deferred taxes included in the numerator is the portion attributable to timing differences that *Tax Notes* deems short term, i.e., those items that *Tax Notes* judge to be quasi-permanent are excluded from the rate calculation. *Tax Notes* treats items of deferred taxes as quasi-permanent if, in their judgment, the items will not be recaptured through taxation in future years. *Tax Notes* argues that these items reduce current tax payments but are unlikely to increase future tax payments. Hence, most of the tax reductions to which they give rise are in effect permanent. *Tax Notes* does not specify the criteria by which it determines which items of deferred tax are quasi-permanent. Mechanically, the rate is calculated as follows: for each company, *Tax Notes* reduces the statutory rate by permanent differences and items deemed quasi-permanent (such as accelerated depreciation or long-term contracts). Thus only current tax plus short-term deferred remain.

One could expect that by using current plus a portion of deferred taxes that the *Tax Notes* rates would always be higher than the Pease-Dorgan or Citizens for Tax Justice rates. But this is not always true. In some cases, the deferred taxes included in the rate calculation by *Tax Notes* are negative, which produces a lower rate than using current expense only.[7]

One problem in the *Tax Notes* approach is that financial statements do not generally disclose how specific timing differences are allocated between foreign and domestic income, making it difficult to compute the U.S. or foreign rates. Thus, *Tax Notes* relies on subjective judgment for how many of the timing differences are expected to be paid within a short period of time and their allocation between domestic and foreign income. However, this approach avoids the understatement of rates inherent in the Pease-Dorgan and Citizens for Tax Justice studies.

Flaws in Methodology

All the methodologies for computing average effective tax rates, either from financial statements or from aggregate statistics of income data, are flawed in varying degrees. An understanding of the fundamental problems with these types of studies is crucial to the proper interpretation of their results. The types of problems encountered are sample selection, point estimates versus trends, classification of companies within an industry, other taxes, the matching of tax and the income on which it is imposed and the difficulty of computing separate U.S. and foreign rates. These and other problems are discussed in more detail below.

1. Sample Selection

Any study of effective tax rates based on financial statements is necessarily limited to companies whose financial statements are available to the public. Most large publicly-held companies are required to file financial data with the SEC. The vast majority of companies, however, are closely held and are therefore not required to disclose any financial information. Even some very large companies are closely held and do not publish

their financial data. That between 6,000 and 7,000 companies must file financial data with the SEC places an outer limit on the number of companies that can be included in any study based on financial statements.

Most studies, however, do not include a sample of anywhere near that size. Computing effective tax rates from financial statements is a time-consuming task, and, so far, no published study has been prepared using data from all SEC companies. Some information from the SEC statements is available from computerized services. Unfortunately, the information from the footnotes to the financial statements, which is needed to compute the effective tax rates, is not in a readily usable form in the computerized data base for computing effective tax rates. Nor do these data take into account the various types of financial statements—such as those for regulated industries—and could thus lead to misleading results.

SEC data could perhaps be used more effectively by using a more scientifically designed sampling method with appropriate weighting. Until more reliable data is available from computerized services, this may be the only practical way to improve the quality of the results.

From informal discussions with the Joint Committee on Taxation, which intended to base the Pease-Dorgan study of effective corporate tax rates for 1984 on computerized SEC data, we found out that the project was being abandoned because the data were not yet reliable enough for this use. This was especially true in computing U.S. and foreign effective tax rates. If the computerized data is refined sufficiently to provide a suitable base for computing effective tax rates, it would produce a much more representative sample of large companies than is now available.

The Pease-Dorgan study is based on a sample size of about 220 large companies in 30 industries; the Citizens for Tax Justice study is based on about 250 companies; and the *Tax Notes* study, published in May 1986, includes almost 600 companies. The overall size of these studies is relatively small, and some industries are represented by very few companies. Pease-Dorgan points out that the results for a given industry are often skewed by just one company—a result to be expected when an industry is represented, in some cases, by as few as four companies. Some of the more extreme results for an industry, for example, in chemicals or timber, would perhaps be closer to the average for all companies if a larger sample were included in the study.[8]

To test whether the effective tax rates in the Pease-Dorgan study approximate the actual rate paid by industries, the study calculates an effective tax rate for a few industries from the SOI data for 1981. This rate was calculated by comparing U.S. tax liability plus foreign taxes paid (a measure of worldwide tax expense) with net book income plus the provision for federal income taxes (worldwide income). These rates could be expected to differ from effective tax rates computed from annual reports, for several reasons. Probably the biggest difference, would be that the tax return measure of "taxes paid" does not reflect any refunds.

Also, the consolidation rules for tax purposes are different from the accounting rules, so that the taxable entities may not be the same as the financial statement entities. The Pease-Dorgan study notes that another important difference is that net book income is often not reported on the tax return (although it is required to be reported on Schedule M of Form 1120), and, even if reported, is often incorrect. Another difference is that rates from income tax returns are computed only for companies with positive after-tax income and positive tax liability.

Some of the rates computed under the two different methods are remarkably similar. Others differ by larger margins. Even though this comparison of rates computed from tax return data with rates computed from annual reports is somewhat inexact, one industry's tax rate relative to other industries' rates is generally the same under both methods. Thus it can be argued that the rate computed from tax return data does support the relative industry rates computed from annual reports in that study.

2. Point estimates versus trends

Most of the studies show that rates tend to vary dramatically from year to year and between companies even in the same industry. The swings in effective tax rates from one year to another can be explained by changes in investment patterns, profitability, and tax law. They can also be explained by the effect of net operating losses (for tax purposes) in the current year, resulting in refunds of prior years' taxes that are reflected in current tax expense in the financial statements. Because of these year-to-year fluctuations and rates for a specific company that may be absurdly high (e.g., 1250 percent or −662 percent for a refund), the value of an effective tax rate for one company for a particular year may be limited.

Congressman Pease deliberately chose to publish effective tax rates just on an industry-by-industry basis for the Pease-Dorgan study. By doing so, the distortion due to abnormal operations for any one company is smoothed out. Obviously, the larger the number of sample companies in an industry, the less chance there is that unusual conditions in one company will distort the calculations. Even more important, the Pease-Dorgan study shows effective tax rates not only on a year-by-year basis but also in the aggregate over a four-year period. Thus, intertemporal distortions are fewer, and the relative tax burdens borne by different industries can be more accurately measured. Where the sample of companies is larger (e.g., in the commercial banking and petroleum industries), a consistent pattern emerges. The petroleum industry pays higher taxes each year and for the four-year period than do financial institutions. If these types of studies are published every year and effective tax rates are averaged over a longer period, thus making trends more apparent, these studies should become increasingly valuable.

3. Classification of Companies Within an Industry

Most studies that compute average effective tax rates based on financial statements classify companies by the industry from which they receive most of their gross receipts. For companies whose activities all fall within a single industry, classification presents no problems. But most large businesses cross industry lines, making classification a more serious problem. As a result, effective tax rates for some industries are muddied by the effects of the other industry activities the companies engage in.

For example, utility companies remain almost exclusively within their industrial confines. Thus, effective rates for utilities reflect the particular tax preferences available to that industry, and do not, for example, reflect tax preferences available only to retailers. On the other hand, the effective tax rates for retailers are not as clear. Sears, the largest retailer, also has significant insurance operations. In fact, in 1982, if companies had been classified by gross profits rather than gross receipts, Sears would have been classified as an insurance company. The special tax advantages available to insurance companies, therefore, have a marked impact in the studies on the effective tax rate of retailers. Furthermore, Montgomery Ward, another large retailer, is a subsidiary of Mobil and so is classified within the petroleum industry. The blurring of industry lines because companies have multiple lines of business is a serious problem for these studies—particularly as the studies are designed to measure relative tax burdens.

4. Other Taxes

Effective tax-rate studies based on financial statements generally measure only the amount of federal tax paid as a percentage of income. The studies ignore the fact that companies pay many taxes other than federal income tax. The company may pay state and local taxes, payroll taxes, excise taxes and, in some cases, implicit taxes.

What do we mean by implicit taxes? If a bank invests in municipal bonds to receive tax-free income, the bank will receive a lower rate of return on its investment. The bank may well argue that by accepting a lower rate of return, it is, in

fact, subsidizing the state in the form of an implicit tax and that this tax should be included in its overall tax burden. Financial institutions also claim that because their required reserves earn no return, that this is actually an implicit tax. As attention began to focus on the low effective tax rates banks paid, their sensitivity to the charges that they were not paying their fair share resulted in additional disclosure in their financial statements of what they called their equivalent effective tax rate, which included these implicit taxes.[9]

The banks' arguments about these indirect taxes have some merit. No other industry invests quite as heavily in tax-exempt securities (although property and casualty insurance companies also hold significant amounts of tax-exempt securities). And the indirect taxes attributable to reserve requirements are also significant. Although other industries may claim that published rates do not reflect their tax burden (e.g., other taxes such as the windfall profit tax are not included), there is some basis for the argument that none perhaps are as understated as the banks'.

It would be possible to compute effective tax rates from published financial statements that include state and local income taxes. But because other taxes, such as payroll taxes and property taxes, are shown, at best, as a single line item—and frequently under "Other Expense"—the data needed to compute these taxes are unobtainable (unless additional information is released by the company). For certain groups of companies, in particular, small businesses, for which federal income taxes may make up a relatively low portion of taxes, additional studies that include more types of taxes may be appropriate.

5. *Apples and Oranges*

It can be argued that an effective tax rate should measure the taxes imposed on the income against which the taxes are compared. Unfortunately, current tax expense compared with book income does not achieve this end. Current tax expense includes not only the tax payable on the current year's operations but also the effects of certain carrybacks. For example, a net operating loss (NOL) carried back to a prior year could result in a refund of prior years' taxes, which would reduce the current year's tax expense. Similarly, other types of carrybacks and carryforwards, such as the investment tax credit, capital loss, etc., flow through the current tax provision. To the extent that the carryovers are in the current provision, the effective tax rate may not accurately represent the tax burden attributable to the current year's operations.

Although the current tax provision normally represents the tax estimated to be paid in the current year, on the financial statements the current provision may be adjusted by the over- or underestimation of the prior year's provision. (Since financial statements are usually published several months before the tax return is filed, some errors in estimation are almost inevitable.) To the extent of the net effect of estimation errors in the current and in the prior year's provision, the current tax provision does not reflect the actual current tax expense as it would be measured on a strict accrual basis.

Corporations sometimes overstate their provision for taxes to allow a cushion for higher taxes that could arise because of IRS examinations. Frequently, the cushion is reflected in the deferred rather than the current provision and would not have an impact on any measure of effective tax rate that includes only the current provision. But, to the extent of any cushion in the current tax expense, effective tax rates would be overstated.[10]

6. *U.S. and Foreign Effective Tax Rates*

To compute separate U.S. and foreign effective tax rates, taxes paid and income must be allocated between U.S. and foreign sources. These effective tax rates are sensitive to the allocation methods used, especially the method for allocating income between U.S. and foreign sources.

Generally, the allocation of taxes is fairly straightforward. However, foreign taxes as disclosed on the financial state-

ments are foreign taxes "paid" rather than foreign taxes "creditable" against U.S. tax liability. Because not all foreign taxes paid are creditable against U.S. tax liability, foreign effective tax rates based on foreign taxes paid may be overstated. This problem is especially acute when computing effective tax rates for the petroleum industry because special foreign tax limitation rules apply to foreign taxes on oil. Further, U.S. taxes may include some portion of federal income taxes paid on foreign-source income. This occurs when foreign tax paid on foreign earnings is less than the U.S. tax on those earnings, so that even after using the foreign tax as a credit against U.S. tax, an incremental U.S. tax is payable on the foreign earnings. As a result, there may be some overstatement of U.S. tax on U.S. income.

The more serious problem is how income and deductions are allocated between U.S. and foreign sources. Although the Financial Accounting Standards Board (FASB) and the SEC require disclosure about foreign operations, there are no uniform allocation methods. Corporate overhead costs, capital, and product development costs are all subject to arbitrary allocation methods. The allocation methods some companies use in their financial statements may be quite different from the allocation methods required under U.S. tax rules. And even when income is allocated between U.S. and foreign sources in line with the U.S. tax rules, the allocation may be inconsistent with foreign tax rules. Companies even allocate income between U.S. and foreign sources in more than one way in their financial statements. They may show income by geographic location as well as the U.S. and foreign split in the tax footnote—and the two methods may differ. An example of the difference would be if a bank made a loan to Mexico; the loan may be U.S. source under the tax rules (and shown as such in the tax footnote), but it may be shown with "foreign loans" in the footnote that discloses geographic data.

Normally, the source for U.S. and foreign income used in computing rates is the allocation shown in the tax footnote. If this is not available, geographic segment or other information in the financial statements is used. Despite these allocation problems, to the extent that the allocations on the financial statements are reasonably consistent with the tax allocations, the information is useful in analyzing the effective income tax burden of multinational corporations.

The Pease-Dorgan study has noted the distortion caused by allocation problems in the U.S. effective tax rates of banks. An effective tax rate for purely domestic commercial banks were computed using SOI data. This rate was compared with the U.S. effective tax rate of the 20 largest commercial banks in the Pease-Dorgan study. The rate based on tax return data was significantly higher than the U.S. rate for the large banks. One of the reasons for the difference could be that medium-sized and small banks do in fact pay a higher tax rate. But if U.S. earnings are overstated and the foreign earnings understated in the financial statements of the large banks, the corresponding U.S. effective tax rate would have been understated and the foreign rate overstated. The "true" U.S. effective tax rate of banks may lie somewhere between that computed from tax return data and that computed in the Pease-Dorgan study.

In the *Tax Notes* study, not only are the rates dependent on the allocation of income between U.S. and foreign sources but also the allocation of items contributing to deferred tax expense between U.S. and foreign sources. Generally, *Tax Notes* assumes that timing differences are attributable to U.S. activities. To the extent that this assumption is invalid, the related U.S. and foreign tax rates may be distorted.

7. *Identifying Reasons for Differing Effective Tax Rates*

None of the effective tax rate studies mentioned attempts to identify on an industry or aggregate basis the specific tax preferences and provisions in the tax code that result in different industries paying a different effective tax rate. It is possible to identify those provisions resulting in an effective tax rate lower than the statutory rate from data in the financial

statements. As discussed earlier, companies are required to reconcile the effective tax rate computed in their financial statements (based on current plus deferred taxes) with the statutory rate. Also disclosed in the notes to financial statements is an analysis of timing differences giving rise to deferred taxes.

Tax Notes identifies all permanent differences and some timing differences (that it calls quasi-permanent) for each company. Only the preferences affecting worldwide rates were identified—it is not possible from published data to identify for U.S. and foreign rates separately the preferences affecting U.S. or foreign rates. This type of analysis could be extended by identifying all timing differences, which would then permit a reconciliation to the Pease-Dorgan rates.[11] The analysis would be even more useful if the differences were to be aggregated by industry.

8. Companies with Losses

Many companies included in the sample in each study had losses. In some cases, these companies show a positive current tax expense (this can happen when timing differences reverse and there is taxable income even though there is a book loss). How should these companies be treated when computing the company, industry, or aggregate tax rates?

When computing a rate for a single company, a positive tax on a book loss would result in a meaningless negative rate. Such rates are not usually shown. If an industry shows an aggregate book loss, rates are not shown, either. In the Pease-Dorgan study, companies with book losses are included in the aggregate rates because, the study argues, the tax expense of these companies should be reflected in the industry's tax burden. *Tax Notes* excludes companies with losses from its study; Citizens for Tax Justice excludes some loss companies from its study.

Arguments could be made for either method—including or excluding companies with losses from the aggregate rates. It is unlikely that the overall rates would differ much between the two methods. Industry rates could be distorted, however, by including loss companies if the sample is small particularly if the loss company is heavily weighted.

Suggestions for Improvement

Although many problems associated with measuring effective tax rates from financial statement information have been identified, and many of these problems are inherent in the methodology, there are some opportunities for improvement.

Treatment of Deferred Taxes

Published studies have calculated effective tax rates using either current tax expense (Pease-Dorgan and Citizens for Tax Justice) or current plus a portion of deferred tax (*Tax Notes*) as the measure of "taxes paid." In the *Tax Notes* study, deferred taxes are included in the rate calculation to the extent they are deemed to be payable in the short term. An alternative method for determining the portion of deferred tax to be used in the calculation could be based on the present value of deferred taxes (with appropriate adjustments when timing differences reverse). Such a method is theoretically attractive, but would require additional disclosure of the details of the deferred tax expense that is not currently available.

Data Base

It should be possible to construct a database from statements filed with the SEC that includes in an appropriate format all the information needed to compute effective tax rates. This information should be able to contain the information needed to compute the adjustments (e.g., the adjustments to reflect the different tax and financial statement consolidation rules). It could also be designed to capture the analysis of permanent and timing differences to facilitate a study of how tax preferences are used in combination by particular industries to lower their effective tax rates.

Financial Statements or Income Tax Return Disclosure

Financial statements provide adequate disclosure to compute effective tax rates based on current expense on a worldwide basis. But, as discussed above, using either current tax expense, current plus deferred, or some combination of the two all have their faults. Disclosure is not adequate to permit computation of the measure of taxes paid based on the present value of deferred taxes (where one would need to know when each type of timing difference reverses and is then dropped to zero). For large companies, such an analysis of deferred taxes would require extensive additional analysis not required for any other purpose—it is not realistic to expect that this information will be forthcoming any time soon. The other major area where information is inadequate, namely, the allocation of taxes and income between U.S. and foreign sources, would be much easier to remedy.

A uniform standard for allocating income between U.S. and foreign sources, at least approximately consistent with the methods used for tax purposes, should not be difficult to devise. And it may even result in more useful financial statement information by making the method consistent between companies. An allocation of permanent and timing differences between U.S. and foreign sources is probably available to the companies and should therefore not be too much of a burden to disclose.

To the extent that companies begin to appreciate the political importance of effective tax rates based on financial statements, it is in their interest to minimize the distortions in these measurements to make them as useful as possible. Ideally, disclosure should be sufficient to compute effective tax rates based on each of the current methods used and on a present-value-of-deferred-tax method. And it should be possible to compute U.S., foreign, and worldwide tax rates under each method.

The FASB and the SEC are under tremendous pressure, particularly by regulatory agencies, to require additional disclosure for all sorts of public policy purposes. Generally, they work within a narrow focus to provide investors with all the disclosure they need while resisting pressure for information that the regulatory agencies could use. But it could be claimed that those involved with designing tax policy are as much users of financial statements as investors and, consequently, their needs for disclosure should be given at least some weight.

The FASB and the SEC eventually respond to public pressure for disclosure if it is persistent. It is unlikely that the additional disclosure needed for computing more meaningful effective tax rates will be produced unless politicians, the press, and the companies themselves begin to push for this additional disclosure.

Additional disclosure on income tax returns could be viewed as an alternative to additional financial statement disclosure. Corporate tax returns already require disclosure of net book income. More details on allocating this income between U.S. and foreign sources, and more details of the timing differences could also be required. (Timing differences are disclosed in tax returns on Schedule M-1 but only in broad categories, often netted against each other, and often not very accurate.) Additional information about net operating losses and credit carryovers would allow adjustments to be made to effective tax rates to remove the effects of operations in other years.

Although the pressure by regulatory agencies and others for additional income tax return disclosure by regulatory agencies is strong, the IRS generally resists it in the interests of simplicity and decreased paperwork. Changes in tax return disclosures are made only for compelling reasons. It is therefore unlikely that improved disclosure will become available through this source in the near future.

How To Use Effective Tax Rates?

The Pease-Dorgan, Citizens for Tax Justice, and *Tax Notes* studies are de-

signed to measure whether or not an industry is paying an amount of income taxes that is more or less than other industries. (These studies do not measure the differences between industries in after-tax rate of return on equity, however.) Although, perhaps, what is often thought of as fairness is more properly measured in terms of individual tax burdens, it is often the public perception of fairness that matters. Because of an increase in tax advantages granted to particular sectors of the economy, there is a growing public concern that an accumulation of these tax advantages benefits some industries more than others. Measuring the relative effective tax rates of industries serves to illustrate the consequences of the accumulation of tax benefits. Each of these studies is founded on a basic assumption that all differences in effective tax rates between industries are due to specific provisions in the tax code resulting in lower average effective tax rates than the statutory rate.

Most critics claim that average effective tax rates are not appropriate for examining the role of the tax system in influencing economic efficiency and the allocation of resources. Marginal effective tax rates are the obvious tool to determine the incentives for investment among types of assets and among industries. Because of the usefulness of marginal rates in evaluating efficiency issues, most of the economic literature discusses the use of these rates. Marginal effective tax rates are not without their own problems, however, because they use assumptions about future economic conditions.

Thus, effective tax-rate studies based on financial statements are far more useful for designing tax policy that is directed toward evaluating or measuring the effect of tax preferences used in combination by various industries. These tax rates are most useful when based on industry trends rather than on company-by-company or year-by-year results. If used in this way, average effective tax rates may capture not only the details of specific tax provisions but also the changing role of those provisions over time. Meanwhile marginal rates are more appropriate for measuring the incentives in a tax system. From this point of view the measures may be complementary rather than competitive.

Methodology Needs Improvement

In the past, serious tax-policy analysts have not given much weight to average effective tax rates based on financial statements because of the many flaws in their methodology. Furthermore, it would seem that these effective tax rates have often been used for purposes for which they were not designed. This had led to inappropriate conclusions. But for politicians and taxpayers grappling with a perception that the tax system is misapplied with respect to corporations and searching for some simple measure of that unfairness, average effective tax rates fill a vacuum—a vacuum that marginal tax rates could never fill because, to most laymen, they are too theoretical. On the other hand, it could be argued that the public perception of average effective tax rates is that they are more precise than they really are. It is also debatable whether they should be used to measure fairness at all.

If one concedes that average effective tax rates have a role to play in tax policy but also that the methodology needs improving, the next question is: who will improve the methodology? Accountants, who are unlikely to make drastic changes in the method for computing deferred taxes, will continue to compute effective tax rates on their financial statements as they have in the past—based on the accrual method, including current and deferred taxes in the measure. They will not be interested in designing other methodologies. Groups like the Citizens for Tax Justice have a method for comparing taxes paid with book income that is politically useful—and are unlikely to seek alternatives. *Tax Notes* has already devoted significant time and effort toward developing its methodology and, presumably, may also be reluctant to devise a new system. The Joint Committee on Taxation, which prepares the Pease-Dorgan study, does not have the resources to devote to a fundamental re-evaluation of the meth-

odology—particularly when members of Congress appeared to be satisfied with the current one. Economists have devoted their attention to refining more sophisticated measures of aggregate effective tax rates of the corporate sector as a whole and marginal tax rates on particular industries and investments.

To prevent the subject from falling through the cracks, economists will have to work together with accountants and other interested parties to refine the methodology, define the purposes for which these rates are most useful and those purposes for which they should not be used at all, and to step up the pressure on the accounting profession and its policymakers for better disclosure. None of us can afford to ignore the impact that these average effective tax rates have already had on tax policy and the effect that they can reasonably be expected to have in the future.

FOOTNOTES

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[1]See Fullerton (1984) for an analysis of different kinds of average and marginal effective tax rates.

[2]Generally, the rules for accounting for income taxes are described in APB Opinion No. 11, as amended. This opinion recommends that significant differences between pretax accounting income and taxable income be disclosed. The Securities and Exchange Commission formalized this rule to require a reconciliation of the effective tax rate to the statutory rate (Rule 17, CFR 210.4-08(h)). In addition, any timing difference that is 5 percent or more of total timing differences is generally disclosed separately.

[3]The concept of comprehensive interperiod tax allocation (APB Opinion No. 11, *Accounting for Income Taxes*) is currently being re-evaluated by the accounting profession. See Discussion Memorandum, *An Analysis of Issues Related to Accounting for Income Taxes*, Financial Accounting Standards Board, August 29, 1983.

[4]Joint Committee on Taxation (1982–1984).

[5]Citizens for Tax Justice (1985).

[6]*Tax Notes* (1982, 1986).

[7]See Joint Committee on Taxation (1983a), *Taxation of Banks and Thrift Institutions*, Table 4, p. 15. This table contains a comparison of effective tax rates in 1981 for 20 large banks, as shown in their annual reports, *Tax Notes*, and Pease-Dorgan.

[8]See Dildine and Eisenach (1985) for an analysis of how enlarging the sample of companies in the chemical industry group resulted in effective tax rates for that industry closer to the average for all companies.

[9]Under this theory, the Bank Administration Institute calculated an effective corporate tax rate (worldwide) of 52 percent for commercial banks in 1982.

[10]Dworin (1985) concluded that the current portion of U.S. corporate tax expense does not necessarily match the tax liability on the consolidated tax return. The main causes he found for overstating current tax expense came about from the effect of the different consolidation rules for tax and for book, particularly for controlled foreign subsidiaries and the special accounting rules in some industries. He also concluded that the overstatement could be due to the inclusion of a "very liberal tax cushion."

[11]Such an analysis was prepared for Senate Finance Committee hearings on the Taxation of Banks and Thrift Institutions in March, 1983. In this study, the effective tax rates of the 20 largest commercial banks were analyzed and reconciled with the statutory rate. From these results, one can compare for each bank the benefits of one preference relative to others. Because the permanent differences and the timing differences in the analysis for deferred taxes are shown on a worldwide basis only, an equivalent analysis for a U.S. effective rate or a foreign effective rate is not possible. See Joint Committee on Taxation (1983a).

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