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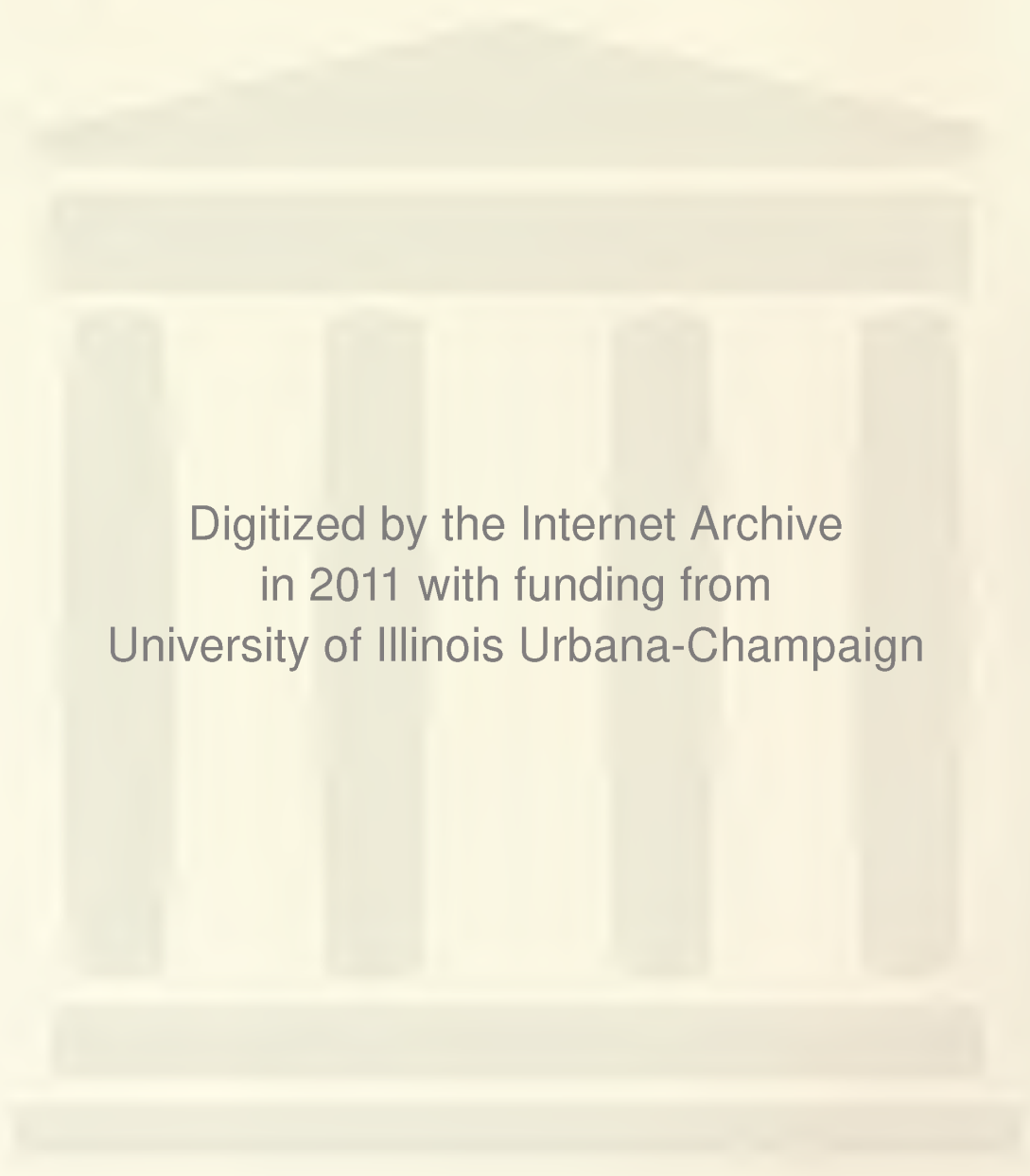
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Are Expectations of Paying the AMT  
Consistent with Reduced Tax Burden?

*Thomas C. Omer*  
*David A. Ziebart*

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June 1988

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## ABSTRACT

The Tax Reform Act of 1986 revised the corporate AMT and explicitly linked corporate taxation to financial accounting "Book Income". Congress added the book income adjustment to eliminate highly publicized instances in which corporations with substantial book income have not paid tax. Our results indicate that abusive firms are likely to pay more taxes under the new AMT but the potential impact of this new law on financial reporting may overshadow its expected revenue generation benefits.



# Are Expectations of Paying the AMT Consistent With Reduced Tax Burden?

## Introduction

The 1986 Tax Reform Act contained a new alternative minimum tax (AMT) for corporations that arose from a perception on the part of taxpayers and policy makers that some U.S. corporations do not pay their fair share of the corporate tax burden. These "abusers" report high levels of income for financial reporting purposes to their stockholders but pay little, if any, income taxes to the federal government. In order to evaluate the effectiveness of this new law, it is necessary to determine if firms that are expected to pay the new tax are the same firms that incur a smaller share of the corporate tax burden. If there is inconsistency, then the social costs associated with the new law may outweigh its expected benefits.

The AICPA and FASB expressed their opposition to the book income adjustment item for two reasons. Although the FASB has historically maintained a neutral position regarding tax legislation, the board indicated its concern about the likely effects of this new law on the quality of financial reporting.<sup>1</sup> The AICPA indicated its concern with the possible inequities that may arise from application of the

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<sup>1</sup> Letter to Senator Robert Packwood Chairman, Senate Finance Committee May 6, 1986.

new law.<sup>2</sup> As corporations seek to rearrange their asset and capital structures to avoid or reduce the effect of this new law, they may exert greater pressure to alter GAAP for reasons other than adequate representation of accounting information.

Corporations will probably exert pressure on regulatory agencies (such as the FASB) to modify financial reporting methods such that they are more congruent with tax reporting methods or utilize methods for financial reporting purposes which are detrimental to adequate financial reporting. In addition to its impact on financial reporting, the new AMT may unfairly tax the economic profits of the firm. This occurs because the new AMT lacks any provision that would prevent a corporation from paying AMT on economic profit which had been fully subject to regular tax. For example, this result may occur if a significant expense is recognized in one year under financial accounting rules but the corresponding tax deduction is deferred until the next year.

In order to evaluate the new law, its benefits must be compared with the potential social costs associated with the factors outlined in the AICPA and FASB comments. Given Congress's intent, this study addresses the following question: Will the new AMT, with its book income adjustment,

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<sup>2</sup> Comments on Temporary and Proposed Regulations on the Alternative Minimum Tax Book Income Adjustment. Submitted to the Internal Revenue Service Oct, 2 1987.

impact firms that, on average, experience a smaller portion of the corporate tax burden?

Lucke, Eisenach, and Dildine (LED) [1986] investigate corporate attributes that increase the probability of paying additional taxes under the new AMT by simulating prototype firms in the retail, durable, non-durable manufacturing, and air transportation industries. They identify these industries because of balance sheet composition (i.e., more or less depreciable assets, different asset types). Their results suggest various firm characteristics that increase the probability of a firm paying additional tax under the new law. They conclude that the set of firms that pay the new AMT is much broader than Congress's original intent, but they provide no information whether firms that will pay the new tax are the same firms that have not carried a fair share of the corporate tax burden.

Using actual corporate information from publicly available financial statements and LED's firm characteristics, we provide evidence regarding the extent to which the new law should impact some of those firms perceived as bearing a smaller share of the corporate tax burden. This study contributes to our understanding of the impact of the AMT on corporations in two ways. First, in discussing the motivation for the AMT, the Joint Committee on Taxation [reference] stated that "... in order to achieve both a real and apparent fairness, Congress concluded that there must be

a reasonable certainty, that whenever a company publicly reports significant earnings, that company will pay some tax for the year" (emphasis added). Thus, Congress expects those firms with a smaller share of the corporate tax burden to pay the new AMT. Our study looks at the consistency between firms expected to pay the tax and their tax burden. Second, this study supplements LED's results using actual data for firms in the economy. Since actual income tax data is not available, simulation studies such as LED's study may provide some initial insights regarding the effect of new policy decisions. However, it is important to extend those initial insights using publicly available financial data in order to assess the actual consequences of the new policy.

Our results suggest that the new AMT will have only a marginal effect in increasing the tax burden of corporate abusers. This suggests that the decline in financial reporting, which may result from the corporate reactions to the new tax, may significantly exceed the expected revenue or distributional benefits.

The remainder of this paper is organized as follows. Section two provides a description of our tax burden measure. Section three includes a review of the LED study and outlines their suggested characteristics of firms that will pay the new AMT. Section four contains a description of our results while the last section provides a summary and our conclusions.

## Tax Burden

The intent of Congress in developing the alternative minimum tax was "to ensure that no taxpayer with substantial economic income can avoid significant tax liability..."[Joint Committee on Taxation, p. 432]. The problem Congress tried to address arose from the public's perception that many major corporations did not bear their fair share of the corporate tax burden. The Joint Committee [p. 433] noted that "The ability of high-income taxpayers to pay little or no tax undermines respect for the entire tax system.... Even to the extent that these instances may reflect deferral, rather than permanent avoidance, of corporate tax liability, Congress concluded that they demonstrated a need for a change". Through the new law, Congress attempted to increase the effective tax rates of those firms deemed abusers (i.e., low effective tax rates).

An estimate of the firm's tax burden is generally measured by its effective tax rate. Computation of a firm's effective tax rate requires a measure of taxes paid and a measure of corporate income. Fullerton [1984] states, "Last year's tax as a percentage of last year's income may be a good summary of the burden or redirected income flow...". Identification of firms with low effective tax rates could be ideally accomplished using corporate tax returns. Unfortunately, tax returns are proprietary information and not readily available to the public. However, information in

a firm's reported financial statements may allow the firm's effective tax rate to be estimated.

Previous research regarding effective tax rate measures [Fullerton, 1982, 1984; Weiss, 1979; Stickney and McGee, 1978; Pechman, 1977] indicates a range of acceptable definitions of effective tax rates.<sup>3</sup> As long as the selected measure is not subject to a specific bias (i.e., other than random error), the measure should provide a reasonable estimate of the firm's corporate tax burden. Zimmerman [1983] uses COMPUSTAT financial statement information to calculate an overall effective tax rate for sample firms from 1941 to 1981. Zimmerman's measure is computed as:

$$\text{ETR} = \text{Income Taxes} / \text{Operating Cashflows}^4$$

In defending his choice, Zimmerman states,

"the magnitudes, time trends and cross-sectional differences in tax rates are comparable using IRS and COMPUSTAT data. This suggests that financial statement data yield unbiased estimates of effective tax rates."

We use Zimmerman's measure in this study and calculate it for our sample firms using 1986 COMPUSTAT data. Our focus on 1986 annual corporate financial statements is motivated by

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<sup>3</sup> We do not propose a new measure, nor do we suggest a solution to previous differences regarding the propriety of these different measures. However, we do suggest that, barring the analysis of tax return information, all effective tax rates measure the firm's true effective tax rate with some degree of error.

<sup>4</sup> This measure is calculated using COMPUSTAT data items 16, 35, 12 and 41. For a complete explanation see Zimmerman [1983] p. 123 footnote 7.



two reasons: (1) many 1987 financial reports for sample firms are not currently available, and (2) 1987 financial reports would represent accounting income after firms may have attempted to minimize the book income adjustment. Thus, the 1987 reports would not adequately portray the existing tax distribution prior to corporate reactions to the new tax.

All non-regulated industry firms on the COMPUSTAT data base are searched to determine those for which the requisite data needed for this study are available. Firms with negative operating income are excluded from our sample. This search results in an initial sample of 952 firms. A subsample of 720 firms in LED's industries is developed by eliminating firms that are not in LED's four general industry groupings. Summary statistics regarding the effective tax rates for the total sample of 952 and the subsample of 720 are presented in Table 1.

#### INSERT TABLE 1

##### Suggested Attributes of Firms paying the New AMT

Lucke, Eisenbach, and Dildine [1986] determine that firms paying the new AMT will have the following characteristics:

1. Higher Debt
2. Higher Growth
3. Lower Profit

LED suggest the following reasons for linking payment of the AMT to these firm characteristics. Firms with higher debt will be more likely to pay the AMT because larger interest payments reduce taxable income and as a result the book income adjustment will tend to be greater in proportion to taxable income. Firms that are growing are more likely to pay the AMT because of the large depreciation preference generated. Less profitable firms will be more likely to pay because taxes on taxable income will not increase as fast as taxes under the AMT even though regular tax rates are higher. Profitable firms will be less likely to pay taxes under the AMT because the regular tax will increase faster as taxable income increases.

For this study, the debt to equity ratio, computed as total debt divided by total stockholders' equity, is used to measure the debt characteristic. The financial statement item chosen to represent profitability in our analysis is income before taxes. Growth is measured by the average change in sales over the ten years prior to 1986. Descriptive statistics are provided in Table 2.

## INSERT TABLE 2

### Model and Analysis

LED identify four industries that, based on asset composition are most likely or least likely to pay the new

AMT; they are, in order of least to most likely, retail, durable manufacturing, non-durable manufacturing, and air transportation. A test of the consistency between likelihood of payment and the distribution of abusive firms is a regression of effective tax rates on indicator variables for the industries in the original sample of 952 firms. We estimate the following model:

$$ETR_i = \alpha + \beta_1 M_i + \beta_2 AT_i + \beta_3 R_i + e_i$$

Where:

$ETR_i$  = 1986 Effective Tax Rate,

$M_i$  = 1 if the firm is a durable or non-durable manufacturer and 0 otherwise,

$AT_i$  = 1 if the firm is in air transportation and 0 otherwise,

$R_i$  = 1 if the firms ia a retailer and 0 otherwise,

$e_i$  = error term.

A significant negative coefficient for an industry indicator would suggest a concentration of firms with lower effective tax rates (i.e., smaller share of the corporate tax burden) and a potential shift in the tax burden across industries. For example, a significant negative coefficient for the air transportation group is negative and significant, suggests that these firms are abusers and, given LED's suggested impact, would pay a greater share of the tax burden under the new law. Consequently, the AMT could be considered an effective tool in shifting the tax burden to abusive firms.

The results of this regression are provided in Table 3.

INSERT TABLE 3

All of the estimated regression coefficients for the industry indicators are negative, indicating a high concentration of firms with low effective tax rates in LED's industries relative to other industries in the sample. However, the estimated coefficients are not statistically significant and the model explains none of the variation in effective tax rates across the total sample. This suggests that the distribution of paying firms is inconsistent with the distribution of likely abusers. Thus, LED's claim that the AMT may impact firms not considered abusive is supported.<sup>5</sup>

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<sup>5</sup> An alternative is to group LED's general industry classifications against all other industries, and test for concentrations of low tax burden firms. We combined the industry indicators so as to split the sample into the 720 firms in the industries pointed out by LED and the other 232 firms. The computed effective tax rate is regressed on this indicator in the following model:

$$ETR_1 = \alpha + \beta_1 I_1 + e_1$$

Where:

$ETR_1$  = 1986 Effective Tax Rate,

$I_1$  = 1 if the firm is in one of LED's industries and zero otherwise,

$e_1$  = error term.

Consistent with the previous results, the coefficient for industry group is negative but insignificant. Thus, the distribution of abusive firms does not appear to be industry specific.

To test LED's suggested relationship between firm characteristics and the payment of additional taxes under the AMT, we regress the computed effective tax rate on the debt, growth, and profit variables.<sup>6</sup> If the AMT is an effective means of taxing abusive firms, the factors that determine whether a firm will pay additional taxes should be inversely related to the firm's effective tax rate (tax burden). For example, firms with high debt, high growth, and low profit, according to LED, are highly likely to pay the new tax. If the AMT is effective, these firms should, on average, have the lowest effective tax rates. The coefficient estimates and their reported t-values are provided in Table 4.

#### INSERT TABLE 4

The regression coefficients for each of the variables are significant and in the hypothesized direction. Consequently, at least some of the firms who pay a smaller share of the corporate tax burden will pay more under the new AMT. However, the low explanatory power of the model indicates that the shift in the tax burden may be very small.<sup>7</sup>

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<sup>6</sup> Zimmerman suggests [1983] deleting observations in which the effective tax rate exceeds 200%. This results in the deletion of one firm and a sample size of 719.

<sup>7</sup> The higher the  $R^2$  for this model, the more likely that a firm paying more taxes is also a firm that has incurred a smaller share of the corporate tax burden.

One problem with the interpretation of the regression results is the significant skewness and kurtosis in the distribution of the error terms. Significant violations of the normality assumption of the error terms for Ordinary Least Squares may bias the significance of the t-tests that the estimated model coefficients are not zero. We examined this potential bias by bootstrapping (see Efron [1982]) the coefficients 1000 times and obtaining distributions for each of the estimated coefficients. An analysis of these distributions indicates adjusted t-values for the coefficients of -6.56 for debt, -2.21 for growth, and 3.95 for profit.

Our evidence supports the notion that (1) firms with higher debt have lower effective tax rates, (2) firms with higher growth have lower effective tax rates, and (3) firms with higher profits have higher effective tax rates. However, the low explanatory power of the model suggests that the incremental social costs suggested by the AICPA and FASB may be greater than the expected benefits from shifts in the corporate tax burden.

#### Summary

This paper reports the results of an empirical analysis intended to determine if the new Alternative Minimum Tax will have an impact on corporations which incur a smaller share of the corporate tax burden (Congress's description of a "tax abuser"). We compute a measure of a firm's tax burden from

corporate financial statement information. Industry classification and firm characteristics regarding the level of debt, growth, and profitability, suggested by Lucke, Eisenbach, and Dildine [1986], are used to analyze the consistency between payment of additional taxes and the firm's tax burden (i.e., the relationship between firm characteristics and effective tax rates).

Our results provide several insights regarding tax abusive firms and the factors stimulating payment of the new AMT. First, abusive firms do not appear to be concentrated in any general industry classification.<sup>8</sup> Second, our results partially support LED's work; the regression coefficients for the firm attributes are statistically significant and the sign of the relationships indicate that if LED's analysis is valid, firms with lower effective tax rates will pay more taxes under the AMT. However, because the relationship is relatively weak, we question the benefits of the AMT as an effective tool for shifting the corporate tax burden when one considers simultaneously the potential social costs.

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<sup>8</sup> Whether any concentration can be found with a finer partition may be the subject of additional inquiry.

TABLE 1

Summary Statistics for the Corporations'  
Effective Tax Rates

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<u>Total Sample</u>		952 firms	
mean	.085	standard deviation	.169
minimum -	1.140	maximum	3.456
<u>LED Industries</u>		720 firms	
mean	.084	standard deviation	.165
minimum -	.873	maximum	3.456
<u>Firms in Other Industries</u>		232 firms	
mean	.091	standard deviation	.181
minimum -	1.140	maximum	.964

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TABLE 2

Summary Statistics for the Corporations'  
Characteristics

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<u>Total Sample</u>		952 firms	
			<u>Debt</u>
mean	.471	standard deviation	.184
minimum	.035	maximum	1.889
			<u>Profit</u>
			(millions)
mean	167.1	standard deviation	561.6
minimum	-2200.0	maximum	8805.0
			<u>Growth</u>
			(millions)
mean	119.3	standard deviation	305.7
minimum	- 416.9	maximum	3494.6
 <u>LED Industries</u>		 720 firms	
			<u>Debt</u>
mean	.463	standard deviation	.176
minimum	.035	maximum	1.889
			<u>Profit</u>
			(millions)
mean	174.2	standard deviation	605.4
minimum	-2200.0	maximum	8805.0
			<u>Growth</u>
			(millions)
mean	123.8	standard deviation	323.1
minimum	- 416.9	maximum	3494.6
 <u>Firms in Other Industries</u>		 232 firms	
			<u>Debt</u>
mean	.498	standard deviation	.207
minimum	.062	maximum	1.341
			<u>Profit</u>
			(millions)
mean	145.8	standard deviation	405.1
minimum	- 323.9	maximum	2891.6
			<u>Growth</u>
			(millions)
mean	105.7	standard deviation	246.9
minimum	- 87.4	maximum	2086.4

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TABLE 3

## Cross-sectional Regression for Industry Effects

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<u>Variable</u>	<u>Coefficient</u>	<u>Predicted Sign</u>	<u>T-Ratio</u>
M	-0.13332E-02	-	-0.1019
AT	-0.64998E-01	-	-0.9996
R	-0.20355E-01	-	-1.0109
Constant	0.88755E-01	+	7.9760

Adjusted R<sup>2</sup> = -.0009

N=952

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Legend

M = Manufacturing  
AT = Air Transportation  
R = Retail

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TABLE 4

## Cross-sectional Regression for Firm Characteristics

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<u>Variable</u>	<u>Coefficient</u>	<u>Predicted Sign</u>	<u>T-Ratio</u>
DEBT	-0.14154	-	-6.4414
GROWTH	-0.43371E-01	-	-2.2352
PROFIT	0.42074E-01	+	4.0641
Constant	.14298	+	13.1650

Adjusted R<sup>2</sup> = .0810

N=720

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