

Accuracy Differences as a Function of Preparer Status: an Analysis of Money's Tax Test

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To reduce the cost of compliance, it is important that individuals seeking tax preparation assistance, as well as policymakers, know the relative differences between preparers. In this paper the results of Money's tax test are employed to determine whether the accuracy and bias of preparers are a function of preparers' professional status. Each year from 1988-1993 Money conducted a test of volunteer tax preparers from throughout the United States in which they compute taxes due for a hypothetical family. Participants included CPA and non-CPA preparers. The results show that relative to non-CPA preparers, CPAs tend to err in favor of the taxpayer, although overall both groups favored the government. After comparing the cost and the variance in the taxes due, the findings suggest that CPAs are the more cost efficient and less risky preparer group.

KEY WORDS: tax compliance, tax liability, tax preparer(s)

For some taxpayers, payment for professional tax assistance is a cost of compliance.¹ In 1989 approximately 47 percent of the 112 million federal individual income tax returns filed were signed by a paid preparer.² To reduce the cost of compliance, it is important that individuals seeking tax preparation assistance, as well as tax administrators, know the relative differences among tax preparers. To date little is known about these relative differences in terms of accuracy or bias. Individual and corporate tax returns are not publicly available making it difficult to obtain estimates of actual returns and the closeness of the taxes computed to the "correct" tax owed. Although actual returns are not available, a unique archival source of data exists

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The authors wish to acknowledge the helpful comments of Terry Crain. Frances Ayres would also like to acknowledge the University of Oklahoma College of Business and the Samuel Roberts Noble Foundation for partial support of this research project. The data used in this study are publicly available.

which allows us to examine accuracy differences across preparers with different levels of professional status.

Each year for the past six years *Money* has conducted a test of tax preparers using a case involving a hypothetical family. The cases, constructed by tax practitioners, are designed to focus on issues that a typical tax preparer encounters in practice. The "winner" is the participant who comes closest to the answer determined by *Money's* test preparers. Participants are volunteer tax preparers from throughout the United States. *Money* reports detailed information regarding the outcome of each preparer in its March issue each year. This information provides a source for a field study of preparers' decisions in a real world setting.³ They do not, however, report any statistical analysis of their results or provide any formal comparison of preparers with differing levels of professional status.

This paper analyzes the results of *Money's* test to determine whether the accuracy and bias of preparers is a function of the preparer's professional status. Test participants were individuals with a wide range of training and experience and included CPA and non-CPA preparers. The results indicate that CPAs tend to err in a direction that favors the taxpayer relative to non-CPA preparers. In addition, the CPAs are the more cost efficient and less risky choice.

The results have important policy implications. Compared with the answer proposed by the *Money* test preparer, both groups tended to err on the government's side. That is, the mean errors were *overstatements* rather than understatements of tax. In recent years, much attention has focused on the so-called "tax gap." The tax gap refers to the total understatement of taxes owed by individuals and corporations. Overstatement of taxes owed has received little attention however. Many taxpayers overpay taxes by missing deductions or exemptions for which they qualify. The results of this analysis of *Money's* test data suggest that this is true even for professionally prepared returns.

Hypotheses

The research on the relative accuracy of various types of preparers is limited. Ayres et al. (1989) found that CPAs were more pro-taxpayer than non-CPAs in ambiguous situations. Using the IRS's 1983

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Individual Tax Model File, Long and Caudill (1987) report that income tax liabilities were lower on paid preparers' than on self-prepared returns with the same income, filing status and other characteristics. The professional status of the preparers was not considered in their analysis.

CPAs are expected to be more accurate than non-CPA tax preparers. There are several reasons to expect that this should be the case. First, CPAs are among the most highly trained and educated professional tax preparers. While passing the CPA exam does not assure a high level of expertise in tax practice, practicing CPAs are required to maintain their license to practice through continuing education. In contrast, no education or training requirements exist for non-CPA tax preparers. The CPA certification process provides significant barriers to entry in the form of educational and experience requirements and a rigorous examination.

CPAs are also expected to be more pro-taxpayer than non-CPA preparers. That is, it is expected that CPAs will err in a direction that favors the taxpayer rather than the government more often than non-CPAs. Ayres et al. (1989) argue that the regulatory environment allows CPAs to take and justify more aggressive positions than non-CPA preparers. Additionally, CPAs charge higher fees and have higher costing of maintaining a practice than do non-CPA preparers. To justify the higher fees and offset their higher costs, CPAs need to seek tax savings opportunities aggressively for their clients. Our research hypotheses are as follows:

H_{1A}: CPAs are more accurate than non-CPA preparers.

H_{2A}: CPAs are more pro-taxpayer than non-CPA preparers.

The Study

Sample

In 1988, *Money* began an annual test which involved approximately 50 volunteer tax preparers nationwide. The participants agreed to prepare the return of a hypothetical family and to report the taxes due, the fee, and the hours spent preparing the return.⁴ While the test participants were not randomly selected an attempt was made to obtain a representative sample of preparers. All participants were required to have a minimum of five years of tax preparation experience. Over the

six-year period 1988-1993 a total of 287 tax preparers participated in *Money's* test. Only one preparer participated twice. The participating preparers included CPAs (178) and non-CPA tax preparers (109).⁵

Univariate Analysis

Table 1 presents the mean levels of hours spent, the fee, cost to the taxpayer, and two measures of the error in the tax computation. Percent Difference is the difference between the tax computed and the correct tax (as determined by *Money*) as a percentage of the correct tax. Absolute Percent Difference is the absolute percentage error.⁶

Table 1
Means by Professional Status 1988-1993.

Professional Status	CPA n=178	Non-CPA n=109	t-statistic
<i>Variable</i>			
Hours	18.96	13.58	4.76**
Fee (\$)	1388.13	781.78	7.74**
Cost (\$)	2780.89	3515.00	-0.75
Percent difference	7.48	14.66	-1.52*
Absolute percent difference	19.12	22.49	-0.80

Percent difference = (Computed - Correct) tax owed / Correct tax owed

Absolute percent difference = Abs(Computed - Correct) / Correct tax owed

**significant at < .0001 for a two-tailed t-test for differences in means

*significant at < .065 for 1-tailed t-test for differences in means

Table 1 also presents *t*-tests for the significance of differences between means for CPA and non-CPA preparers for each variable of interest. CPAs were significantly more accurate than the non-CPA preparers using the percentage difference error measure *Perdiff*. The absolute percentage error between groups was not significant. Hours and Fees were significantly different with the CPAs being the high group. However, if we consider the actual cost to the taxpayer as the difference between the computed tax owed and the actual tax owed plus the after-tax fee to the taxpayer (since preparer fees are deductible when itemizing deductions), then a total cost (*Cost*) to the taxpayer can be computed.⁷ The non-CPAs cost more, on average, though the cost difference between the two groups was not statistically significant. Though CPAs took more hours and charged more fees to

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compute the taxes, the overall cost to the taxpayer was still higher when using a non-CPA.

The mean values provided in Table 1 show that while CPAs tended to err on the side of the government, their average signed errors were smaller than those of the non-CPA preparers. The mean percentage error (Perdiff) was 7.5 percent for CPAs compared to 14.7 percent for non-CPA preparers. Compared with non-CPA preparers, the CPAs were more pro-taxpayer. H_{1A} that posited CPAs would be more accurate than non-CPAs was not supported using absolute errors. A comparison of absolute error percentages for CPAs did not differ from non-CPAs. The univariate test results provide modest support for H_{2A} . The signed percentage error was 7.48% for CPAs compared to 14.66% for non-CPAs (significant at $\alpha < .065$).⁸ In an additional analysis of the variances between the two groups, an F-test showed that the variances were significantly different ($F = 2.18$, $p < 0.0001$) with the non-CPAs having a higher standard deviation (0.437) than the CPAs (0.296). This suggests that there is more risk involved in using a non-CPA preparer since the computed taxes had greater variation.

Regression Analysis

A regression analysis was run to determine if the type of preparer and time spent was significant in explaining the computation error differences between preparer types after controlling for differences across years. Formally, the regression model tested can be written as follows:

$$\text{Percentdiff}_i = \alpha_0 + \alpha_1 \text{YR88} + \alpha_2 \text{YR89} + \alpha_3 \text{YR90} + \alpha_4 \text{YR91} + \alpha_5 \text{YR92} + \beta_1 \text{Type} + \beta_2 \text{Fee}_i + \varepsilon_i \quad (1)$$

where

Percentdiff_i = (computed tax - correct tax) / correct tax owed for each preparer

YR88 to YR92 = year effects indicator variables that equal one when observations are from the year indicated and zero

otherwise

Type = indicator variable for type of preparer

CPA = 1, non-CPA = 0

Fee_i = the after-tax fee charged by the preparer (Fee * .72 assuming a 28 percent tax rate).

The year indicator variables were included to allow for differences in tests and their difficulty across years. The hours reported to compute the tax were not included because they are highly correlated with the fees (Pearson correlation coefficient = 0.766, $p = 0.0001$). A negative coefficient on Type supports Hypothesis H_{2A} .⁹

Table 2 presents the regression results along with the F-values and the significance levels. The coefficient for Type was negative and significant at the .05 level for a one-tailed t -test suggesting that after controlling for year effects, CPA preparers had significantly lower (favoring the taxpayer) errors than did non-CPA preparers. The significance of the year variables indicates that accuracy differed across years. This finding is not surprising given that each year a unique case was provided. The coefficient on the after-tax fee was not significant, indicating that the fee charged did not significantly influence preparers' accuracy.

Table 2

Regression Results: Percentage Computation Error by Tax Preparer 1988-1993 ($n = 287$)

Regression Results: Percent Computation Error as a Function of Type of Tax Preparer, Year, and Fee, 1988-1993 ($n = 287$).

Variable	Coefficient	Std Error	Significance
Year 1988	-.24	.07	<.01
Year 1989	-.29	.07	<.01
Year 1990	-.06	.07	.38
Year 1991	.09	.07	.19
Year 1992	-.22	.07	<.01
Prepared by CPA (0=no, 1=yes)	-.07	.04	.05
After tax fee charged	.00	.00	.84

Significance levels based on two-tailed t -tests, except for "Prepared by CPA",

which is based on a one-tailed t -test.

Types of Errors

There were a variety of errors and assumptions that led to differences between preparers in the tax computation. Although *Money* does not provide a detailed analysis of all errors, they do discuss the factors leading to differences between *Money's* answer and answers provided

by respondents. The major sources of errors were (1) lack of familiarity with new provisions of the tax code, (2) lack of knowledge of "fine points" of the tax code and (3) math errors. The above sources of errors led to both under and over estimates of the taxes owed depending on the nature of the error. In addition, there were differences reported between *Money's* answer and those of respondents due to differences in the degree of conservatism or aggressiveness in interpreting the tax code.

The high error rate is not surprising given the complexity of the tax code and regulations. Despite lip service given by Congress and the Internal Revenue Service to simplifying the tax code, tax preparation has become increasingly complex [Fessler(1993), Long (1993)]. The increased complexity provides ample room for errors and alternate interpretations of facts. The cases used in the *Money* test were more complex than the average return. However, participants noted that they had dealt with the situations posed in the cases. The cases were prepared by active tax practitioners and addressed situations which tax practitioners would see in an ordinary tax season.

Discussion and Limitations

This analysis suggests that the CPAs are the more cost-efficient choice. The CPAs overall had a lower percentage error, smaller variance and tended to err more in the taxpayers direction than non-CPAs. This suggests that CPAs are a better choice as tax preparers for a risk averse taxpayer who seeks to reduce the cost of compliance.

These findings are limited in that they deal only with individual, not corporate, returns. For individual returns the source of income is often straightforward, while the nature of deductions is less clear. The cases developed by *Money* dealt exclusively with a family with a fairly complex return and with income between \$100,000 and \$130,000. It is possible that as returns become more complex (estates, small businesses and corporations) the tax savings incurred by using a CPA may exceed the additional fees. Additionally, CPAs usually offer sophisticated year-round tax-planning services that save more for the taxpayer. On the other hand, relatively simple forms are likely to result in the same tax liability across preparer type. This may help explain the finding that overall errors favored the government.

Another limitation of the study is that the data set is an archival data set created by *Money*. The sample of participants is not random. In

particular, while *Money* did obtain a widely diverse group of preparers, there were few participants from the major (Big-6) accounting firms. The Big-6 firms participated in 1988 and 1989 but after that declined to participate.¹⁰ While we were unable to discern any particular bias related to the use of this sample, the possibility exists that these findings might not generalize to the broader population of preparers.

Summary and Conclusions

There is little research to date that examines differences across types of preparers in the level of accuracy in tax return preparation. In this paper, data from *Money*'s analyses of hypothetical tax returns prepared by 287 preparers over a six-year period were analyzed. The results from this unique data set indicate that CPAs are significantly more accurate than non-CPA preparers. In addition, for taxpayers seeking to reduce the cost of compliance, the results suggest that CPAs are the more cost efficient and less risky preparer group. There are also implications for practicing accountants and students planning to enter the professions since the results suggest that there are some value-added dimensions to seeking a CPA certification. Overall, the errors of CPAs tended to favor taxpayers more than did those of non-CPAs. Future research is needed to cast more light on the reasons for this and the extent to which it applies across different types of taxpayers and different situations.

Endnotes

1. *SLEMROD AND SORUM (1984) ESTIMATED THE MAGNITUDE OF THE AGGREGATE COMPLIANCE COST TO THE ENTIRE COUNTRY OF FILING FEDERAL AND STATE INDIVIDUAL INCOME TAX RETURNS. THEY CONCLUDED THAT IN 1982 BETWEEN \$3.0 AND \$3.4 BILLION WAS SPENT ON PROFESSIONAL TAX ASSISTANCE.*
2. From Tables 3 and 20 in Internal Revenue Service Statistics of Income (1991-1992).
3. *According to the staff writer of the most recent Money tax test article, an attempt is made to enlist volunteer preparers from a wide range of states. In some states, the aid of state societies is enlisted to recruit volunteers. The*

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goal of the test participants is to be as accurate as possible with the outcomes reflecting on the professional preparer. Consequently, there is no reason to believe any systematic over- or under-reporting biases exist in the data set.

4. In 1988 Money asked only for the fee and the taxes due. Reporting of hours spent began in 1989.
5. No attempt was made to differentiate among the firm types of the CPAs. Chow, Shields, and Whittenburg (1989) found no difference in regional and local CPA firm practitioners in their judgments regarding substantial authority sources to alternative tax treatments as a function of experience, position, or firm type. Sanders and Wyndelts (1989) found no difference in the judgments of local and national CPAs.
6. *TO THE EXTENT THAT THE TEST IS AMBIGUOUS IT IS POSSIBLE TO QUESTION USING MONEY'S NORMATIVE ANSWER AS THE CORRECT ANSWER. HOWEVER, OTHER ERROR MEASURES ARE ALSO ARGUABLE. IN ADDITION, SINCE THE FOCUS ON THIS PAPER IS ON DIFFERENCES BETWEEN CPA AND NON CPA PREPARERS BOTH GROUPS ARE SUBJECT TO THE SAME BENCHMARK.*
7. *THE AFTER-TAX FEE IS COMPUTED $FEE * 0.72$ BASED ON AN ASSUMED MARGINAL TAX RATE OF 28 PERCENT.*
8. *A REVIEWER NOTED THAT THERE IS A DIFFERENCE BETWEEN SAYING THAT CPAS ARE PRO-TAXPAYER AND MEASURING WHETHER CPAS TEND TO MAKE SMALLER ERRORS WHICH COST THE TAXPAYERS MONEY. THIS MAY BE CORRECT IN THAT IT IS DIFFICULT TO MEASURE DIRECTLY WHETHER CPAS ARE MORE PRO-TAXPAYER THAN OTHER PREPARERS (ALTHOUGH AYRES ET AL. PROVIDE EVIDENCE THAT THIS IS THE CASE WHEN FACED WITH AMBIGUOUS SITUATIONS). THIS STUDY USES SIGNED PERCENTAGE ERRORS AS AN OPERATIONAL MEASURE OF PRO-TAXPAYER BEHAVIOR. FROM THE TAXPAYERS VIEWPOINT, SMALLER ERRORS ARE CONSISTENT WITH PRO-TAXPAYER BEHAVIOR.*
9. *A REGRESSION WAS ALSO RUN USING APERDIFF AS THE DEPENDENT VARIABLE. AS EXPECTED GIVEN THAT THERE WAS NO MEAN DIFFERENCE BETWEEN CPAS AND NON-CPAS ON THIS VARIABLE, THE RESULTS WERE NOT SIGNIFICANT.*

10. *MOST BIG-6 FIRMS INDICATED THAT THEY WERE TOO BUSY TO PARTICIPATE, BUT ONE NOTED THAT THEY HAD LITTLE TO GAIN BY DOING WELL AND A LOT TO LOSE IF THEY DID POORLY. ALSO, WHILE BIG-6 FIRMS DO INDIVIDUAL TAX PREPARATION, THEIR RATES TEND TO BE SUFFICIENTLY HIGH THAT THEY PRIMARILY DO RETURNS OF HIGH INCOME CLIENTS AND BUSINESS RETURNS.*

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