

## TASK UNCERTAINTY IN PUBLIC ACCOUNTING FIRM SERVICES

Gary D. Burkette  
Assistant Professor  
East Tennessee State University  
Department of Accountancy  
P.O. Box 70710  
Johnson City, TN 37614

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*Public accounting firms have expanded the types of non-audit services offered in recent years. Previous research has suggested possible reasons for this trend toward greater product diversification, but empirical evidence regarding the nature of the various types of services provided is lacking. This paper attempts to fill this void by presenting the results of an exploratory empirical examination of one aspect of the nature of these services. The primary purpose of this study is to examine for differences in relative levels of task uncertainty among various types of public accounting firm services. Eight measures of the underlying dimensions of task uncertainty were developed. Data on these eight measures from 60 engagements from two offices of one Big Six firm were analyzed using multiple analysis of variance. The results suggest that consulting services appear to involve lower levels of task uncertainty than do audit or tax*

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W. Paul Stillman School of Business  
Seton Hall University

*services, although differences in types of consulting services were also noted.*

#### INTRODUCTION

Researchers in auditing have attempted to provide evidence regarding the nature of and market for auditing and other services provided by public accounting firms. Previous research has addressed issues such as the pricing of audit services (Simunic 1980, Simon and Francis 1988), competition (Dopuch and Simunic 1980), industry concentration (Danos and Eichenseher 1986) and the effects of product diversification on various aspects of the market for audit services (Beck et al. 1988, DeBerg et al. 1991).

Product diversification has changed the mix of services provided by CPA firms. Non-audit services have experienced considerable growth. For example, consulting services for one Big Six firm increased from 19% of total firm revenues in 1987 to 24% in 1991, while tax and auditing services declined as a percentage of total revenues (Public Accounting Report January 15, 1992).

While it is clear that non-audit services are profitable, Hillison and Kennelley (1988) have suggested another reason that public accounting firms promote non-audit services. They posit that firms are offering additional services. This diversification is a means of risk reduction. A public accounting firm faces risk to its professional reputation and practice as well as risk of financial loss from the effects of litigation and/or unfavorable publicity arising in connection with the provision of audit, tax and consulting services to clients. Litigation exposure has increased substantially in recent years.<sup>1</sup> Indeed, some firms appear to be moving away from audits perceived as risky (Public Accounting Report December 15, 1992). Watson (1975) suggested that the audit subunit faces relatively less uncertainty than does the consulting subunit, but that conclusion was challenged by Bamber and Bylinski (1982). The implication is that the business risk to which the firm is exposed changes as the audit/non-audit service mix changes.<sup>2</sup>

Empirical evidence regarding the nature of services provided may lead to enhanced understanding of the trend toward greater product diversification by public accounting firms. The research discussed in this paper examines one aspect of the nature of these services. The purposes of this paper are (1) to describe a process of logical deduction from theoretical constructs to develop measures of task uncertainty associated with services provided by public accounting firms, and (2) to report the results of an exploratory empirical investigation of the levels of task uncertainty associated with different types of services using the newly-developed measures.

## THEORETICAL BACKGROUND AND MEASURE DEVELOPMENT

Task and environmental uncertainty have been described as fundamental problems confronting managers of organizations (Thompson 1967). The theoretical description of the effects of the dimensions of task uncertainty had to be translated task uncertainty: task difficulty, task variability, task interdependence, and interunit interdependence. The work of Van de Ven and Delbecq (1974) and Tushman and Nadler (1978) provided the basis for describing four dimensions of task uncertainty: task difficulty, task variability, task interdependence, and interunit interdependence.

**Task difficulty**, the first of the task uncertainty dimensions, affects the level of expertise and/or experience required to successfully complete a task (Van de Ven and Delbecq 1974). CPA firms serve clients in a variety of industries, many with differing characteristics. Increasing task difficulty should be associated with an increasing need for CPAs with specific expertise or experience depending upon the specific type of situation. These more experienced professionals generally have higher charge rates for their time. Because of a competitive environment, the CPA firm is typically unable to pass all such increased charges to the client. As a result, the percentage of the firm's standard charges that it would expect to receive, as well as the percentage of standard charges actually received from the client would decline. Three measures are suggested for this dimension.

Percent of Standard Expected-During the engagement budgeting process, engagement personnel develop estimates of the percentage of standard charges that will be billed to and collectible from the client. This percentage can be obtained directly from engagement time and billing records.

Percent of Standard Attained-This represents the percentage of standard charges actually collected and can be obtained directly from engagement time and billing records.

Weighted Average Number of Years' Experience-Engagement time and billing records include the names of the individuals assigned to the engagement. By obtaining the individuals' date of employment with the firm, and subsequently calculating each individual's total number of years' experience, an average number of years' experience assigned to the engagement, weighted by the actual number of hours worked on the engagement, can be calculated.

**Task variability**, the second task uncertainty dimension, relates to the number of exceptional cases encountered in successfully completing a task and affects the extent to which activities may be systematized (Van de Ven and Delbecq 1974). Many CPA firm activities are systematized through the use of standardized work programs.<sup>3</sup> For example, in the audit function, use of work programs is extensive. Many work programs are standardized at the firm-level. Any needed modification is left to the discretion and judgment of the individual professional as the tasks are completed. In the context of a financial statement audit, exceptional cases require modification of the standardized work program.

Task variability is more likely encountered in situations where the pre-specified work program cannot be used or where significant modification to the work program is necessary. As development of situationally specific programs or significant modification of existing programs is required, it is expected that the ability to meet the engagement budget will be reduced. Again, in a competitive environment, when these program modifications are required and unexpected, the increased charges may result in higher billable charges than can be passed on to the client. Two measures for task variability are suggested.

Percent of Standard Attained/Percent of Standard Expected-This variable represents a relative measure across engagements of success in achieving or surpassing original profitability expectations. Engagement profitability is primarily a function of time to complete the engagement coupled with the experience levels assigned to the engagement.

Budgeted Hours/Actual Hours-This variable, while similar to the first of the variability measures, is calculated using hours only, and is therefore a relative measure of success in achieving or exceeding original budget expectations.

**Task interdependence**, the third dimension of task uncertainty, involves the extent to which successful completion of the task is dependent on the completion of other tasks; and, therefore, affects the level of task coordination necessary to successfully complete the task (Tushman and Nadler 1978). As more tasks are completed, the level of coordination necessary among team members and among the various tasks increases.

It is expected that as a result of the increased task interdependency, the need to plan a sequencing approach for completing the tasks in an engagement will increase. While this planning process may be difficult, it becomes critical to the successful completion of the tasks. This process also may be iterative, requiring additional coordination as the sequence of task completion takes place. It is

expected that as the level of task interdependence increases, the number of hours devoted to engagement planning will increase. Only one feasible measure is suggested.

**Planning Hours/Total Actual Hours-Engagement** time records include a category for hours devoted to engagement planning. This variable is developed by dividing this amount by the actual hours needed to complete an engagement.

**Interunit interdependence** refers to the extent to which successful completion of the task is dependent on the need for information or collaboration with other subunits. It affects the level of subunit coordination necessary to successfully complete the task (Tushman and Nadler 1978). CPA firms are generally organized into audit, tax and various consulting subunits.<sup>4</sup> Personnel assigned to these subunits possess specialized knowledge sometimes needed by another subunit to complete the assigned tasks successfully. Individuals are frequently designated by the firm as specialists in a particular area, be it along industry or functional lines. It is expected that as interunit interdependence increases, increasing use of firm-designated specialists will be required. Two measures are suggested.

**EDP Specialist Hours/Total Actual Hours-Individuals** listed on the time records as having worked on an engagement are either designated as firm EDP specialists or not. This variable is calculated by dividing the total hours spent on an engagement by EDP specialists by the total hours needed to complete the engagement.

**Other Specialist Hours/Total Actual Hours**-Similarly, all other specialist hours were divided by total hours to develop this measure.

These eight measures were used as the dependent variables for this study.<sup>5</sup>

### **Classification Variables**

Two classification variables were examined in this study. The office performing the services for a client was employed as one of the classification variables. This variable had two levels, representing the two offices ('Office 1' and 'Office 2') that participated in the study. The type of service provided to the client was included as the second classification variable. This variable consists of four levels, representing four service types. The four service types include the audit of financial statements, tax services to include tax planning and compliance services, and two types of consulting services.

Consulting services units are organized in two different ways. Certain consulting services are organized by function; i.e., providing actuarial services across industries. Other consulting units are organized by industry. For example, a distinct consulting unit provides general management consulting to the health care industry. Another such unit provides a range of services to the utilities industry. Two consulting units provided data for this research. One of the units was organized by function ('FC') and the other unit was an industry group ('IC'). Data collection considerations, such as availability within the firm participating in the study and the organization of the firm, limited the number and type of consulting services that could be used as sources for data collection.

#### RESEARCH HYPOTHESIS AND METHODOLOGY

It was expected that different CPA firm services would be associated with different levels of task uncertainty. The research hypothesis, stated in null form, is as follows:

Ho: For a given office, level of task uncertainty does not vary by service type.

#### Data Collection

Two offices of the same Big Six professional services firm located in large, metropolitan areas in the eastern United States participated in the study. It was considered necessary to use large offices to ensure that a reasonable number of engagements be available from which to select. The participating firm was organized along both functional and industry lines. The audit and tax units of the firm were organized to provide these services over a broad range of clients and were, therefore, organized along functional lines.

As expected, both audit and tax services were provided and coordinated through multiple offices; however, the consulting units were organized differently. Most of the units provided services on a nationwide basis from only one office. FC and IC services were provided and coordinated from Office 1. Both offices provided data related to audit and tax services.

Engagements from Office 1 for all four participating units were randomly selected from an alphabetic listing of activity to date for the fiscal year ended September 30, 1991, so that other factors such as size of the engagement and industry did not bias the sample. Engagements were completed prior to September 30, 1991 and all engagements selected were completed entirely within that fiscal year. All data needed was obtained from the administrative and accounting records of the firm. After consultation with a coordinating partner who assisted in the data collection process, it was decided that only engagements in

excess of 250 hours would be included, due primarily to concerns regarding the integrity of budget expectation and planning time information for smaller engagements.

Audit, tax and IC engagements were selected randomly using a systematic sampling technique. For the FC unit, selection of all engagements over 250 hours was necessary to produce ten engagements for analysis. All data was reviewed by the coordinating partner for completeness and to ensure that the sample was not biased by systematic confounding effects. The coordinating partner concluded that the engagements selected were consistent with the offices' portfolio of clients.

### Statistical Analyses

Two data sets were constructed. The first data set included Office 1 audit and tax data and the data related to the two consulting service types. The second data set included Office 2 audit and tax data and the data related to the two consulting service types.

The research hypothesis was tested by examination of separate 1X4 MANVOAs (one for Office 1 and one for Office 2) performed using the two data sets. The four levels of the 'service type' classification variable represented audit, tax, FC and IC services. Analysis of significant MANVOAs focused on determining the relative effect of the eight dependent variables in contributing to the significant results using step-down analysis.

## RESULTS

### Descriptive Statistics

Table 1 shows the mean size and standard deviation of the engagements sampled for this study. The mean size of the engagements, in terms of hours, ranged from a high of 1486.6 hours for the audit engagements at Office 1 to a low of 447.7 hours for the Office 2 tax engagements. Overall, the tax and consulting engagements were smaller than the audit engagements selected. The audit and IC engagements exhibited greater relative variability, as measured by the standard deviation, than did the tax or FC engagements. Discussions with a partner or manager from each subunit confirmed that the engagement sizes and variation therein are representative of the individual subunit's client portfolio.

Table 2 lists the cell means and standard deviations on the eight dependent variables for each level of the classification variables. Reference to these cell means and standard deviations will facilitate the discussion of the post-hoc tests later in this paper.

**Table 1**  
Sample Means and Standard Deviations - Engagement Size in Number of Actual Hours Needed to Complete

	Off 1 Audit n=10	Off 1 Tax n=10	Off 2 Audit n=10	Off 2 Tax n=10	Functional Consult n=10	Industry Consult n=10
Mean	1309.6 hours	600.9 hours	1014.9 hours	447.7 hours	458.9 hours	650.6 hours
Standard Deviation	1486.6 hours	499.2 hours	742.2 hours	254.8 hours	169.5 hours	419.6 hours
High	5063.3 hours	1787.5 hours	2868.7 hours	1039.1 hours	835.7 hours	1770.0 hours
Low	394.3 hours	250.0 hours	322.4 hours	250.0 hours	278.9 hours	275.0 hours

### Dependent Measure Reliability

An examination of the partial correlation coefficients from the sum-of-squares cross-products matrix provided insight into the reliability of the measures. Statistically significant correlations were expected among the first three dependent variables, those being the variables to measure task difficulty, and between the two variables (4 and 5) measuring task variability, and between the two variables (7 and 8) measuring interunit interdependence. As expected, the correlation between variables 1 and 2 (percent of standard expected and percent



**Table 2**  
Cell Means/ Standard Deviations

Dep Var	Description	Office 1 Audit	Office 1 Tax	Office 2 Audit	Office 2 Tax	IC
1	Percent of Standard Charges Expected to be Collected	10.2	14.9	23.4	18.9	80.00% 7.2
2	Percent of Standard Charges Collected (Assigned)	20.1	28.4	23.1	26.6	77.1% 13.2
3	Weighted Average Number of Years' Experience Assigned to the Engagement	1.3	1.3	1.1	2.7	6.2% 3.0
4	Percent of Standard Charges Assigned/Percent of Standard Charges Expected	84.2% 21.7	82.8% 19.2	94.3% 18.4	83.2% 37.9	97.0% 17.1
5	Complete Engagement	71.3% 16.3	77.3% 14.3	84.8% 16.0	72.1% 17.6	91.1% 31.2
6	Planned Hours/Actual Hours Needed to Complete Engagement	2.0% 3.9	2.3% 3.4	10.3% 4.6	8.3% 2.2	1.8% 3.0
7	EDP Specialist Hours/Actual Hours Needed to Complete Engagement	1.7% 8.0	0.0% 0.0	2.8% 11.2	0.0% 0.0	0.0% 0.0
8	Other Specialist Hours/Actual Hours Needed to Complete Engagement	4.6% 4.8	1.3% 4.0	14.2% 18.8	21.2% 34.0	0.0% 0.0

Key:  
IC=Individual Consulting  
IC=Industry Consulting

of standard attained) was highly significant, as was the correlation between variables 4 and 5 (standard attained/standard expected and budget/actual hours). Variable 3 (experience) did not correlate with either of the other difficulty measures. Variables 7 and 8 (EDP specialist hours/total hours and other specialist hours/total hours) also were not correlated with each other. These findings are consistent across data sets.

It should be noted that the results related to variables 7 and 8 are driven largely by the limited, and in some cases, absence of specialist usage by the non-audit subunits. A review of Table 2 shows that no EDP specialists were used on any tax engagements nor on any IC engagements. Additionally, neither FC nor IC made use of any other type of specialist.

Although not expected, the correlations between variable 2 and variables 4 and 5 were significant. This suggests that the difficulty and variability dimensions of task uncertainty, as described by Van de Ven and Delbecq (1974) are not orthogonal. Indeed, Van de Ven and Delbecq (1974) suggest that these dimensions may be related in that exceptional cases encountered in the performance of a task (variability) may also require additional expertise to successfully complete the task. The Galbraith (1973, 1977) and Tushman and Nadler (1978) models also suggest interrelationships between the dimensions.

The foregoing results suggest that the dependent variables developed to measure task difficulty and task variability are not independent of one another. Therefore, further analysis of the data should be conducted in terms of one dimension (difficulty/variability). Additionally, the significance of variable 3 (experience) is unclear. Experience was correlated with another difficulty/variability measure (4) only for Office 1.

No other statistically significant correlations exist that are consistent across the three data sets. Only three additional significant correlations were found. Each was found in only one of the three data sets and no data set contained more than one of these significant correlations. Variables 6 and 8 were significantly correlated for Office 1. Variables 1 and 6 were correlated for Office 2. Variables 6 and 8 both relate to interdependence dimensions.

The correlation data provide additional support for the use of the newly-developed measures for task uncertainty in testing and analyzing the research hypotheses along three dimensions rather than four—difficulty/variability, task interdependence, and interunit interdependence. Accordingly, the remaining analysis will be conducted in those terms.

### Tests of Hypothesis

Table 3 includes the results of the MANOVA conducted on each data set. The overall MANOVA test was significant for Office 1 audit and tax, FC, and IC engagements and for Office 2 audit and tax, FC, and IC engagements. The significant overall MANOVA tests support rejection of the research hypothesis.

The results of the univariate tests performed on the eight dependent variables are also included in Tables 3. The results for both sets of data were largely consistent. For both sets of data, variables 1,2,5 and 6 were significant and variables 4 and 7 were not significant. Variable 8 was significant at the  $\alpha = .05$

**Table 3**  
MANOVA Results

Office 1 Audit v. Office 1 Tax v. Functional Consulting v. Industry Consulting: F Value(Prob > F)

Dependent Variable	Overall	1	2	3	4	5	6	7	8
Service Type	3.00 (.0001)	2.96 (.05)	3.24 (.03)	6.91 (.001)	1.07 (.37)	7.02 (.0001)	9.43 (.0001)	1.03 (.39)	3.04 (.04)

Office 2 Audit v. Office 2 Tax v. Functional Consulting v. Industry Consulting: F Value(Prob > F)

Dependent Variable	Overall	1	2	3	4	5	6	7	8
Service Type	3.49 (.0001)	4.06 (.014)	2.86 (.05)	.57 (.64)	.98 (.66)	6.12 (.002)	10.11 (.0001)	1.76 (.17)	2.33 (.09)

Dependent Variable Key:

1=Percent of Standard Charges Expected to be Collected  
2=Percent of Standard Charges Collected  
3=Weighted Average Number of Years Experience  
4=Percent of Std. Attained/Percent of Std. Expected

5=Budget Hours/Actual Hours to Complete Engagement  
6=Planning Hours/Actual Hours Needed to Complete Engagement  
7=EDP Specialist Hours/Actual Hours Needed to Complete Engagement  
8=Other Specialist Hours/Actual Hours Needed to Complete Engagement

level for the Office 1 data, but was only significant at the alpha =.10 level for Office 2. Variable 3 was significant for Office 1, but not for Office 2.<sup>6</sup>

#### DISCUSSION AND ANALYSIS

The MANOVA tests strongly supported rejection of the null hypothesis that levels of task uncertainty do not vary by service type. Further analysis was necessary to determine the significance of each service type on the dependent variables. Multiple tests are available and were used in this study to conduct such analysis. Specifically, the Scheffe and Bonferroni Protected F methods and the

**Table 4**  
REGWF Results

Table 4-REGWF Results:

Office 1 Audit v. Office 1 Tax v. Functional Consulting v. Industry Consulting

Note: Units with the same letters do not differ significantly. For example, IC differs significantly on Dependent Variable 1 from the other subunits. This is indicated by the "A" next to IC, while all other subunits have a "B" next to them.

Dependent Variable	1	2	3	4	5	6	7	8
Audit	B	B	A B	—	B C	A	—	A
Tax	B	B	B	—	A B	B	—	A B
Functional Consulting	B	B	A	—	C	B	—	B
Industry Consulting	A	A	A	—	A	B	—	B

Ryan Einot Gabriel Welsch Multiple Range test (REGWQ) and the Ryan Einot Gabriel Welsch Multiple F test (REGWF) methods were used. The results were generally consistent across the methods. Table 4 presents the results of the REGWF tests. REGWF was chosen for presentation herein over the other methods because it not only controls the Type I experimentwise error, but also has a lower Type II error rate (SAS 1985).

It should also be noted that variable 4 (standard attained/ standard expected) and variable 7 (use of EDP specialist) were not significant in any of the analyses performed. No service type differed significantly from another with regard to these two variables. A discussion of the task interdependence and the interunit interdependence dimensions is presented next, followed by discussion of the difficulty/variability dimension.

**Table 4**  
REGWF Results (Continued)

*Office 2 Audit v. Office 2 Tax v. Functional Consulting v. Industry Consulting*

Dependent Variable	1	2	3	4	5	6	7	8
Audit	B	—	—	—	A	A	—	—
Tax	A B	—	—	—	A B	A B	—	—
Functional Consulting	A B	—	—	—	B	B C	—	—
Industry Consulting	A	—	—	—	A	C	—	—

**Key:**

1=Percent of Standard Charges Expected to be Collected  
2=Percent of Standard Charges Collected  
3=Weighted Average Number of Years Experience  
4=Percent of Std. Attained/Percent of Std. Expected

5=Budget Hours/Actual Hours to Complete Engagement  
6=Planning Hours/Actual Hours Needed to Complete Engagement  
7=EDP Specialist Hours/Actual Hours Needed to Complete Engagement  
8=Other Specialist Hours/Actual Hours Needed to Complete Engagement

### Task Interdependence

Variable 6 measured the ratio of planning hours to total hours required to complete the engagement and was included in this study as a measure of task interdependence. A review of the cell means in Table 2 shows that audit services required the greatest amount of planning, followed by tax services, FC, and IC, respectively. The results in Table 4 for Office 1 show that IC was significantly different from all other service types. For Office 2 (Table 4) IC was significantly lower than auditing, but not significantly different from tax and FC. Audit, tax and FC were not significantly different for Office 2.

These findings suggest that levels of task interdependence are greatest in the audit function, followed by tax services, FC, and IC, based on ordering of the

means. The differences between tax and the consulting services, are not statistically significant in Office 1, but are for Office 2. Auditing services appear to involve significantly higher levels of task interdependence.

### **Interunit Interdependence**

The results related to Variable 8 (use of non-EDP specialists) suggest that audit and tax services require more extensive use of specialists from other areas than do either type of consulting service. In fact, this random sample of FC and IC service engagements did not reveal any instances where non-EDP related specialists were used. It should also be noted that use of EDP-related specialists (Variable 7) was rare in all service types. Again, audit services appear to make use of specialists most frequently, with tax services next in terms of use.

The results related to interunit interdependence are largely consistent with those for task interdependence. Auditing services appear to involve higher levels of interunit interdependence; however, it should be noted that the difference was only significant for Office 2. The differences for Office 1, while in the expected direction, did not achieve statistical significance. One of the few differences between offices was related to Variable 8 as discussed in a previous section of this paper.

These results suggest that audit services involve significantly higher levels of interdependence among tasks performed and with other subunits of the firm. Consulting services appear to involve less task and interunit interdependence. Tax services generally involve less interdependencies than audit, but more than the consulting services, but these differences are not consistently significant.

### **Task Difficulty/Variability**

The results of the MANOVA related to the dimension of task difficulty/variability are more problematic to interpret. While the MANOVA test was significant for variables 1 (percent of standard expected), variable 2 (percent of standard attained), variable 3 (experience) and variable 5 (budget/actual hours), examination of the cell means in Table 2 shows some of these differences to be inconsistent with one another. These inconsistencies relate to the consulting service types, especially IC services.

Results of the tests related to the other variables (1, 2 and 5) suggest that IC services involve less task difficulty/variability than do audit, tax or FC services. The apparent difference between FC and IC services suggests that the assumption made in this study that all consulting services should not necessarily be grouped together for analysis is reasonable. Much of the previous literature considered consulting services as a single service type. These results suggest that such a treatment is inappropriate and that consulting service types should be, at least initially, as separate. These results indicate that FC services appear to be



more similar to audit and tax service than to IC services with regard to task variability/difficulty.

Variable 3 (experience) indicates higher levels of difficulty/variability for IC and FC service tasks. These findings, together with previous results from this study, raise the issue of the validity of the experience variable. Experience did not correlate with any other of the task difficulty/variability measures and also was one of only two measures that differed between the two offices. Whether this possible lack of validity is related to theoretical deficiency or to specification problems is unclear and remains an open question. One possible explanation relates to the relationship between experience and expertise. Expertise is also mentioned in the theoretical literature, but is difficult to measure. It is not clear that experts are always the most experienced.

The results of the tests of the research hypotheses indicate that levels of task uncertainty do differ among various types of CPA firm services. In general, consulting services appear to involve lower levels of task uncertainty than do audit and tax services, although the results also suggest that not all consulting services involve the same level of task uncertainty. In this study, the functional consulting service type was generally more similar to audit and tax service types, while industry consulting services tended to differ from the others.

#### LIMITATIONS AND IMPLICATIONS

Several limitations of this research warrant consideration. First, the generalizability of the results of this study can be questioned for two reasons. The study examines only one firm. No examination involving only one firm can be viewed as more than exploratory. The firm involved in this study was one of the so-called Big Six. The composition of the public accountancy profession is more diverse. Firms range in size from sole practitioners to the large, multinational firms. While this study gives certain insights into the practice of such accounting firms, any generalizations must be viewed carefully and probably in any case do not extend beyond the Big Six and other large multiple office, multiple service firms.

Second, the types of services provided by public accounting firms is considerably more extensive than examined in this study. Not only do firms provide an array of non-audit services, even the attest function has expanded in recent years to include attestations regarding assertions made in contexts other than that of financial statements. Data availability restricted the number of services that could be examined in this study.

Data availability restrictions also create a third limitation. The sample sizes obtained for this research was small. In some instances, most notably where the issue of inter-office differences was examined, the lack of significance needed

to reject the null hypotheses cannot be construed as establishing that such differences do not occur. Rather, these results simply provide evidence that such differences are limited.

Lastly, validity concerns related to use of experience as one of the eight dependent measures represent another limitation. The results related to this variable were not consistent with the other measures of the same dimension of task uncertainty. As indicated earlier, the causes for these findings are unclear.

This research adds significantly to our knowledge regarding the nature of services provided by CPA firms. Specifically, previous research questioned whether services differed in the level of task uncertainty involved (Bamber and Bylinski [1978]). The major finding of this study gives substantial evidence related to that question, strongly suggesting that provision of different types of services does involve different task characteristics and interdependencies.

The results of this study provide evidence that consulting services provided by accounting firms do vary in their task characteristics. Future research should not view consulting as one service type, but rather consider each type of consulting service individually.

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## ENDNOTES

<sup>1</sup>Public Accounting Report regularly documents the results of litigation activity. For example, see "\$400,000,000 Cash! E&Y's Global Settlement is Deal of the Year" (PAR November 30, 1992), "PW Socked with \$335 Million Award" (PAR May 31, 1992).

<sup>2</sup>Business risk as used herein should not be confused with audit risk as defined by Statement on Auditing Standards Number 47. Audit risk is defined therein as the risk that the auditor may unknowingly fail to appropriately modify his opinion on financial statements that are materially misstated.

<sup>3</sup>Audit work programs are detailed listings of specific procedures to be performed in order to obtain sufficient, competent evidence upon which to base the audit opinion on the financial statements under examination.

<sup>4</sup> While it is commonly known that firms are, in general, organized into these three subunits, individual firms may vary somewhat. All Big Six firms prepare recruiting brochures that describe their specific organizational design. These brochures, along with discussion with numerous of the firms' professional personnel confirm the existence of these organizational subunits.

<sup>5</sup> Because the dependent measures used in this study were newly-developed, their validity as measures of task uncertainty was in question. In an effort to ascertain the level of validity of the measures, a description of the measures and the theory upon which they were based was provided to the

coordinating partner prior to the commencement of data collection for the express purpose of obtaining his opinion, as well as the opinion of other experienced auditors, regarding the content validity of the dependent measures. In subsequent discussions, it was ascertained that the partner as well as others with whom he shared the information, appeared to understand the theoretical constructs being studied, considered the measures to be valid.

<sup>6</sup> Additionally, the data from audit and tax engagements only from Office 1 and Office 2 was analyzed using MANOVA to test for any interactive effect between the classification variables as well as the existence of any significant main effects. As expected, neither the interactive term (office\*service type) nor either of the main effects was statistically significant ( $\alpha = .05$ ). These findings offer additional evidence suggesting that systematic office effects do not exist.