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THE IMPACT OF REGULATION  
ON INTERNAL AUDITING

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## THE IMPACT OF REGULATION ON INTERNAL AUDITING

### 1. INTRODUCTION

This paper deals with the economic consequences of accounting regulation when there is uncertainty about the regulation's impact on firms. It is part of a growing body of literature dealing with the impact of regulation on accountants and auditors.<sup>1</sup> We provide evidence about the effect of regulation on firms' internal resource allocations, using the impact of the Foreign Corrupt Practices Act of 1977 (FCPA) on internal audit as a particular example. We also provide evidence about determinants of the demand for internal auditing, which has been a rapidly growing, changing function in firms in recent years.

There is evidence that the role, size, and reporting responsibilities of internal auditing were quite different in the early 1980s compared to the early 1970s in many firms. For example, a Wall Street Journal [1980] article, referring to the FCPA as the "Internal-Auditor Full-Employment Act of 1977," cited numerous specific instances of the impact of the FCPA on internal audit, including (1) increased size and improved quality of internal audit staffs, (2) increased salaries for internal auditors, and (3) movement of the internal audit function up the organization chart. A survey of internal auditors by Baird and Michenzi [1983] provided similar findings. Mautz, et al's [1980] descriptive study of internal controls in 49 U.S. companies found internal audit to be a rapidly growing, changing function. For the companies in this study, the resources allocated to internal audit for salaries not only increased more than overall company growth, but also increased more than external audit fees over the period 1974 to 1981. In these companies, the rates of internal audit salaries to external audit fees increased from .92 in 1974 to 1.24 in 1981.

This study sheds some light on the common assumption that the FCPA had a major impact on internal auditing during this period. As part of the pilot tests for this study, we conducted interviews with both internal and external auditors. Whereas most external auditors stated that internal audit departments have generally grown and improved "as a result of the FCPA," the internal auditors claimed that this growth and improvement was occurring before the FCPA. One of the motives for this study is to address this apparent contradiction. Another motive for this study is to ascertain whether the FCPA should be incorporated into empirical research on internal audit costs and external audit fees, such as that performed by Simunic [1980] and Maher, et al. [1985],<sup>2</sup> and/or into research on the demand for auditing.

The rest of this paper is organized as follows. Section 2 provides institutional background and the conceptual model. We present a model relating internal audit to both the bribery and the internal control provision of the FCPA. We assume there was an equilibrium allocation of resources to the internal audit function prior to the FCPA. If the FCPA affected this equilibrium, then we would expect to see a change in the pattern of firms' resource allocations to internal audit before and after the FCPA. Section 3 describes the research methods and data collection procedures.

Section 4 presents the findings, which show that (1) the allocation of resources to internal audit increased more than company growth from 1974 to 1981, (2) that this relative growth was significantly greater after the FCPA than before for firms affected by the FCPA as predicted, and (3) the increased allocation of resources to internal audit after the FCPA was not significantly greater in firms affected by both the bribery and internal control provision than in firms affected only by the internal control provisions. Section 5 reports an extension of the empirical work which analyzes the impact of the

FCPA on external audit fees. Section 6 presents our conclusions, and discusses limitations and implications of the work.

## 2. INSTITUTIONAL BACKGROUND AND RATIONALE FOR THE HYPOTHESES

### The Role of Internal Audit

The demand for auditing is presumed to arise because of a contractual relation in which principals employ agents to act on their behalf. Of course, these agents, acting in their own best interests, may not always perform in the best interests of their principals nor adhere to their explicit or implicit employment contracts. The principal's problem is to develop cost-justified control methods, monitoring systems, incentives, auditing and other measures to encourage or to deter particular activities of their agents.<sup>3</sup> The demand for these devices is derived from the benefit to principals of reducing agents' variant behavior.<sup>4</sup>

Internal auditing may involve either direct or indirect auditing. The auditing of agents' acts, of outcomes, and of states of nature, is direct auditing. Much of so-called "operational" auditing is direct auditing, for example. Indirect auditing of agents involves auditing the monitoring system rather than auditing agents, themselves. For example, audits of accounting reports and internal control evaluations are indirect audits of agents. As discussed later, the antibribery provision of the FCPA is more related to the demand for direct auditing, while the internal control provision is more related to the demand for indirect auditing.

Comparative advantages of internal auditors over external auditors. The resource impact of an increase in the demand for auditing will not necessarily be limited to internal audit; external audit may be affected, as well. Assume there are four factors affecting the internal/external audit choice:

(1) regulation requiring use of external auditors; (2) independence from agents; (3) expertise about the activities of agents and controls over those activities; and (4) cost. On average, external audit can be expected to dominate internal audit for (1) and (2), whereas internal audit can be expected to dominate external audit on (3) and (4). Barring regulation requiring external auditing, if there is an increase in the demand for auditing, principals can be expected to make a trade-off between allocating resources to internal vs. external audit based on the relative importance of expertise about a company's operations, independence, and cost. We generally assume that lower cost and greater expertise favor internal over external audit for changes in the demand for auditing in response to the FCPA; however, there are exceptions. The marginal cost of internal auditing could exceed the marginal cost of external auditing in foreign countries where the firm has no internal audit staff. Further, both the substantive value of independence and the signal value (to regulators) of using independent, external auditors could outweigh other disadvantages of using external audit in response to the FCPA. Consequently, we examine the effects of the FCPA not only on internal auditing but also on external auditing.

#### Firms' Response to Regulation

This section examines how managers are expected to use internal audit in responding to the FCPA.

Regulation imposes both (1) costs of taking actions to comply with the regulation and (2) costs of noncompliance, including fines, costs of litigation, and losses due to damaged reputation if enforcement action is taken against the firm. Managers of firms that are regulated are assumed to minimize the total costs of regulation to themselves, taking into account the costs of compliance, as well as the probability and consequence of being

caught if not in compliance, all on a risk-adjusted and present-value basis. When both the costs of compliance and noncompliance are considered, there is no reason to expect that total compliance with the law would be optimal. Resources would be allocated to compliance activities only if the marginal costs of compliance are less than the marginal costs of noncompliance.

To simplify the analysis, we assume a firm's response to this regulation results from decisions by "managers," whom we define as a coalition of top management and the board of directors. This group, which has the greatest exposure under the FCPA (Baruch [1979], [1980]),<sup>5</sup> is assumed to have the principal's role in the principal-agent-auditor relationship. The FCPA is assumed to affect the demand for auditing if managers use auditing to monitor employees' compliance with the law.

#### Hypothesized Impact of the Internal Control Provision

The internal control provision applies to firms having stock registered with the SEC whether or not they have foreign operations. This provision requires companies to devise and maintain a system of internal accounting controls that meets the objectives stated by the American Institute of Certified Public Accountants' Statement on Auditing Standards (SAS) No. 1, Section 320.28 [1973].

According to Maher [1981], the major response to the internal controls provision of the FCPA has been a review and documentation of companies' internal control procedures to document compliance with the law. Maher [1981] found that managers in the majority of companies, which had not increased internal accounting controls as a result of the FCPA, had expended resources to document that their companies were in compliance with the law.<sup>6</sup> Managers in these firms behaved as if they had applied the regulation compliance

analysis discussed earlier, and initiated a compliance response comprised of documenting existing controls. Each of the "Big 8" CPA firms, as well as various legal authorities and professional associations have recommended strategies for compliance programs.<sup>7</sup> These recommendations include an on-going formal evaluation of the companies' internal accounting control system, including cost/benefit analysis. "A company may or may not have to make changes in its internal control system, but it will definitely have to make a specific decision on this point and document it," (Foreign Corrupt Practices Act Reporter, [1979], p. 124).

The demand for internal audit would be affected by these FCPA defense programs to the extent that internal audit has a comparative advantage in documenting internal controls and is used to make the formal review and evaluation of internal controls.<sup>8</sup> The demand shift would not necessarily be permanent. The documentation could have been accomplished in (say) one year, then the resources assigned to the task could have been reallocated. Hence, we test for both a short-term (one year) and long-run shift in demand after enactment of the law.

We hypothesize that the demand for internal audit increased in response to the internal controls provision of the FCPA. The demand shift is assumed to be primarily a function of a legal compliance program to review and document internal controls.<sup>9</sup>

This hypothesis is based on the following assumptions: (1) Resources allocated to internal audit were in equilibrium prior to the FCPA; (2) managers have incentives to expend resources on internal audit either because controls are increased or as part of a legal defense program.



### Hypothesized Impact of the Antibribery Provision

The antibribery provision prohibits any officer, director, employee, or agent acting for any company (whether or not that company is registered with the SEC) or any United States citizen from paying bribes to foreign officials. "Grease payments" paid to foreign government employees whose duties are ministerial or clerical to expedite routine transactions, such as payments to Customs officials to expedite shipments of goods, are not illegal under the FCPA (U.S. Senate, [1977]).

Costs of noncompliance. The FCPA can result in a fine of up to \$1,000,000 for a company; individuals may be fined up to \$10,000, imprisoned for not more than five years, or both. The antibribery provision increases the costs of bribes. These costs include expected fines, costs of imprisonment, litigation costs, and costs of using third party intermediaries to shield managers from payments of bribes. Managers caught paying bribes may also incur additional costs of obtaining new employment. If noncompliance damages a manager's reputation, then the market demand for their services could be reduced.

Costs of compliance. Costs of compliance with the antibribery provision include foregone business opportunities due to decreased bribery and internal monitoring costs. If bribes are required by foreign government officials to consummate transactions, then U.S. suppliers would be precluded from the transaction if they comply with the law.

One form of "compliance" is to employ multiple levels of intermediaries to shield the firm from the bribe, which would not comply with the law but would reduce the probability of being caught. While this enables the U.S. supplier firm to engage in the transaction, it increases the costs of doing business in bribery-prevalent countries.<sup>10</sup>

We assume that an equilibrium level of controls over the activities of agents had been established prior to the FCPA. The antibribery provision increases the costs to managers of bribing foreign government officials. An increased demand for the auditing services would be derived from attempts to reduce the offering of bribes by employees. Auditing could be either direct or indirect; that is, auditors could directly monitor employees actions or they could monitor compliance with internal controls. Hence, if managers believe there is a nonzero probability that bribes are being made, then we hypothesize increase in auditing to reduce bribes.

We expect managers' priors about the occurrence of bribery to be an increasing function of:

- (1) The extent of a firm's foreign operations;
- (2) The extent of a firm's foreign operations in countries in which bribery is a common means of exchange;
- (3) The frequency of past bribes by employees of the firm.

Alternative arguments. Given that managers have incentives to deter and detect illegal foreign payments, it is reasonable to assume they would increase resources invested in internal controls and auditing that would decrease the probability of their occurrence. Hence, the attempt to assess the impact of the FCPA's antibribery provision through changes in managers' investment in internal auditing would seem to be a legitimate motivation for our empirical study. The relation between the law and internal audit may not be as straightforward as assumed above; however. We propose that the conceptual hypothesis may not hold for three reasons, even for firms with operations in bribery prevalent countries.

First, there may be no agency problem in complying with the law, hence, no demand for incremental auditing (see Dopuch [1982]). Top managers may not

consider bribes to be "variant behavior." Bribes may be in the best interests of a firm's managers and shareholders. In fact, the record of "questionable payments" reveals some large bribes carried out with the knowledge of top management. These bribes represented "executive override" of existing controls, not a breakdown in controls.<sup>11</sup>

Second, the expected marginal costs of complying with the regulation may be sufficiently high that no compliance response would be expected. For example, the opportunity cost of losing business could be sufficiently high that the expected costs of compliance exceed the expected costs of noncompliance, particularly for large orders. Hence, managers would not allocate any resources to internal audit or other compliance activities.

Third, managers may attempt to comply with the law, but through means other than internal auditing. For example, incentive systems could be changed to eliminate the benefits to the firm's employees from bribery. Also, sales in bribery prevalent countries could be halted.

### 3. RESEARCH METHODS

This section describes our research methods, including our rationale for choosing the method of analysis and our sources of data. General approaches for analyzing the impact of regulation can be coarsely partitioned into cross-sectional approaches, in which treatment groups are compared with control groups, or time-series approaches, in which the impact of the treatments are assessed over time. The former uses paired samples while the latter uses self-pairing. The nature of the event and data limitations preclude cross-sectional pairing (e.g., nearly all large U.S. companies are registered with the SEC and come under the internal control provision, and all U.S. companies that trade overseas come under the antibribery provision). Hence, our primary

analysis uses time-series matching, by which we match growth in internal audit after an event with growth before the event.

### The Event

The critical assumption for interpreting findings from the time series approach is that no other "event" intervenes at the same time as the regulation. Our analysis compares the growth in internal audit for the pre-event period, fiscal years ending 1974-77, with the growth in internal audit for the post-event period, 1978-81. (Internal audit growth is scaled for firm growth, as discussed later.)

Our review of the professional literature and interviews with internal auditors revealed no other exogenous event comparable to the FCPA during this period. Control and auditing of electronic data processing (EDP) systems was the most important internal control development during this period according to Mautz, et al. [1980]. Increased use of EDP could have increased (or decreased) demand for internal auditors, but we could detect no differential demand between the pre-event and post-event periods.

A development possibly affecting external auditors during this period was the change in the American Institute of Certified Public Accountants professional code of conduct that could increase competitive behavior among external auditors. This change, effective March 31, 1979, repealed an ethical rule prohibiting an auditor from encroaching on the client practices of another auditor, and modifying previous prohibitions of advertising and other client solicitation.<sup>12</sup> The demand for internal audit services would be reduced by the change in rules of conduct provided that both of the following two conditions are met. First, the rules resulted in a reduction in external audit prices followed by an increase in the quantity of external audit service

demand; and second, the demand for internal and external audit services are substitutes. A reduction in the quantity of internal audit services demanded would have the opposite effect of the FCPA's hypothesized effect. This would work against rejection of our null hypothesis that the FCPA had no effect on internal audit.

### Legislative History

As in most studies of the economic consequences of events, there is the possibility that resources were allocated in anticipation of the event. We next describe the circumstances leading to passage of the FCPA so the reader can ascertain the extent to which managers may have allocated resources to internal audit prior to passage of the law.

In 1974, the Securities and Exchange Commission began an investigation into possible management misuse of corporate funds after the Watergate Special Prosecutor brought charges against numerous corporations and individuals for illegal domestic political contributions. Meanwhile there was considerable publicity about international bribery and political contributions by Lockheed, United Brands, and McDonnell-Douglas, among other companies.<sup>13</sup> The SEC announced a voluntary disclosure program in 1974 whereby firms could disclose questionable domestic and foreign payments. By 1977, more than 300 companies had reported questionable payments (U.S. Senate [1977]). By May 1976, the SEC had obtained consent decrees against fourteen major corporations for violations of the Securities and Exchange Act of 1934 and initiated another twenty-six investigations (Greanias and Windsor [1982], p. 19).

Although the SEC's voluntary disclosure program provided data about foreign bribes that were used by proponents of the FCPA; the SEC preferred not to be involved in enforcement of the proposed antibribery provisions in 1976.

Roderick Hills, Chairman of the SEC, opposed prohibition of foreign questionable payments. According to Hills, the problem with these payments was not that they represented criminal misconduct, but that the concealment of the activity in the books and records represented a breakdown in corporate disclosure and accountability. (See Hills' testimony in U.S. Senate [1976], pp. 5, 14, 15, and 16.) The SEC drafted a proposed bill designed to obtain legal authority over internal accounting controls. Prior to the FCPA, the SEC had legal authority over disclosure but did not have legal authority to prosecute for falsification of books and records, per se.

To summarize, the SEC's voluntary disclosure program had revealed hundreds of instances of bribes to foreign government officials by 1976. Several bills prohibiting bribery to foreign government officials had been introduced in Congress. The SEC opposed criminalization of bribery, but favored disclosure and regulation of internal accounting controls. The Ford administration favored disclosure but opposed criminal sanctions for bribery (U.S. House of Representatives [1976], p. 89). Hence, there was considerable uncertainty whether a law would be passed prohibiting bribery.

In 1977, the newly-elected Carter administration proposed a foreign policy that promoted human rights beyond the level of international rhetoric. Bribery of foreign government officials by American companies was considered contrary to this foreign policy. In Congressional hearings on the bill that would ultimately become the Foreign Corrupt Practices Act of 1977, Carter's Secretary of Treasury, W. Michael Blumenthal stated that the Carter Administration believed bribery to foreign government officials to be damaging to foreign policy. According to Blumenthal:

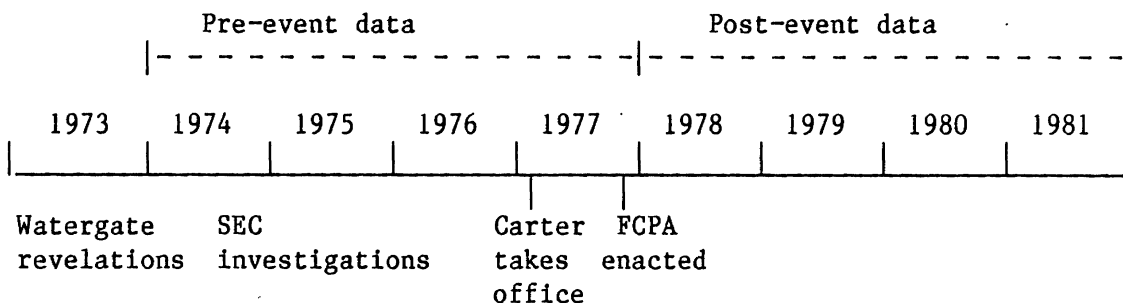
"...the Carter Administration fully supports the aims of this bill. We agree that the United States should impose criminal penalties on American businesses and their officials who bribe

foreign public officials.... Apart from the moral repugnance and the inefficiency of the system, bribery is contrary to the foreign policy interests of the United States. There is ample evidence to support the statement that overseas bribery creates strains in our relations with friendly foreign countries and causes the international investment climate to deteriorate.

From [a] foreign policy point of view, we feel it is important that this practice be discouraged in every way possible" (U.S. House of Representatives [1977], pp. 175-76).

The replacement of Roderick Hills as Chairman of the SEC with Harold Williams in 1977 also favored the legislation. Williams was critical of the foreign questionable payments and favored criminal penalties for bribery (Greanias and Windsor [1982], p. 71).

Our review of the legislative history implies that the post-Watergate revelation of large scale bribery was a necessary but not sufficient condition for the FCPA to be enacted. The election of President Carter provided the impetus to convert an issue into law. The following time sequence shows the relevant dates:



Although the internal audit data for our study were collected in 1974, 1977, 1978, and 1981, many managerial decisions to allocate resources to internal audit are part of the budget process. Hence, data we collected for 1977 may actually reflect managerial decisions made in 1976. Thus, the pre-event data generally precede the Carter election, and certainly precede the FCPA enactment. The post-event data start with decisions about the time the FCPA was

being enacted and continues through the decisions made for the 1981 fiscal year. The post-event period allows time for managers to react to the regulation and to budget reallocations of resources and to hire additional internal auditors, if that is the managerial decision.

### Data

Internal audit salaries were collected directly from internal audit department directors by questionnaire in tandem with a larger study of internal auditing by Mautz, Tiessen, and Colson [1984]. The other data required for this study were all obtained from public sources, including measures of bribery activity and two measures of firm size for scaling purposes--total assets and total revenues.

Pilot studies were conducted in two phases. First, interviews were conducted in internal audit departments in 52 companies in conjunction with the studies reported in Maher [1981] and Mautz, et al. [1980]. Second, additional interviews were conducted in four companies as follow-up work to address data collection problems uncovered in prior work. These pilot studies indicated that internal audit salary data could be provided by internal audit department directors. Data on total internal audit department costs would be more difficult to obtain, and some of these cost data would not be comparable across firms because of different policies in charging internal audit departments with overhead costs, such as word processing and occupancy costs. Consequently, we use actual internal audit salaries as our measure of resources allocated to internal audit.

The pilot studies revealed that internal auditing reporting to corporate headquarters was relatively comparable across firms; it was less comparable at lower levels, however. For example, merchandise firms have store auditors who



check cash balances and inventories. Whereas some firms call these internal auditors, others do not. Hence, our measure of internal audit is at the corporate headquarters department. This is both the most reliable measure and consistent with the expectation that, if there are changes in resource allocations to internal audit because of the FCPA, they would be more likely to occur at corporate headquarters than at lower organizational levels.

To discover other potential measurement problems, study participants were asked to describe the internal auditing activities in their firms, to indicate whether all internal auditors reported to corporate headquarters, and to indicate whether there had been changes in the organization of internal audit during the period of the study--1974-81. About 25% of the companies required followup telephone calls to resolve ambiguities; companies were eliminated from the study if measurement ambiguities could not be resolved or if there had been changes during the period 1974-81 which would make a time series comparison problematic.

To make survey respondents' costs of providing data as small as possible, we collected data only for the key years--1974, 1977, 1978, and 1981. The pilot studies and follow-up telephone calls indicated that any changes in resources allocated to internal audit during 1975, 1976, 1979, or 1980 would be reflected in the data that we collected.

### Sample

The Institute of Internal Auditors and the Paton Accounting Center provided access to the firms participating in this study. Of the 330 firms providing data, our analysis is restricted to (1) firms that provided data for each of the years, 1974, 1977, 1978, and 1981, (2) firms for which there is publicly available information on assets and revenue, and (3) firms having an internal audit department for the entire period from 1974-81. This cuts

the sample to 136 firms, of which 101 firms were registered with the S.E.C. This sample is restricted to relatively large firms for which there are publicly available data. (See Appendix A for size data.)

### Control Variables

If the hypothesized relation between the FCPA and internal audit holds, then increases in the size of internal audit departments would be greater after the FCPA than before. Changes in the size of the firm could presumably also changes in the resources allocated to internal audit over time. We ran cross-section correlations of internal audit costs and various measures of firm size (i.e., assets, revenues, and the square root of each) and found correlation coefficients generally ranging from .7 to .85. Simunic's [1980] study of internal audit costs revealed that, after accounting for firm size, measures of firm complexity and risky balance sheet components did not explain much additional variation in internal audit costs. Our concern is to control for those variables within a firm that would affect the allocations of resources to internal audit if they changed over time. (Note that this is a within-firm control, not an across-firm control.) Considering the importance of firm size and the absence of other variables known to affect internal audit costs, we decided to control explicitly for size. Second, we examined the characteristics of the firms for changes in other attributes over the period of the study that could potentially affect the amount of resources allocated to internal audit. The characteristics that we examined included changes in organizational form, changes in SEC registration status, additions or deletions of business segments, change in product lines. We eliminated the few firms that had made these changes to get a homogeneous sample with respect to changes in variables besides size that could affect internal audit.

There are several measures of firm size that could be used, including revenues, assets, and various nonlinear transformations of each. We expect internal audit costs to change due to price-level changes, so we chose measures of size that would reflect both price-level changes and changes in the real size of firms. For nonfinancial firms, we believe revenues to be the best such measures. For financial firms, revenues could change much more than price-level changes because interest rates include the expected purchasing power loss on loans.<sup>14</sup> Further, a large portion of assets in financial firms reflect current values. Consequently, we believe assets to be a better measure of combined price-level changes and real firm growth. Although we use revenues and assets for measures of nonfinancial and financial firms, respectively, we found these size measures to have a high cross-section correlation both for each year and for first differences between years. In Section 4, we discuss our tests for the sensitivity of the results to other size measures.

#### Properties of the Data

We found some evidence of skewness in the distributions of adjusted internal audit size, so the results are reported using both parametric and non-parametric tests. We partitioned the sample by industry to ascertain whether there were industry-specific differences in the growth rates of internal audit costs, and found no systematic industry differences.

#### 4. FINDINGS

##### Tests of Hypothesis 1: Impact of the FCPA on Internal Audit

We first examine the joint impact of both the internal control and anti-bribery provisions of the FCPA on internal audit. Later we test for the impact of the antibribery provision, alone. The objective of this first set of tests

is to ascertain whether growth in resources allocated to internal audit was greater after the FCPA than before, after adjusting for changes in firm size. This approach explicitly controls for changes in firm size, and it implicitly controls for other factors affecting internal audit growth (other than the FCPA), if those factors had the same effect after the FCPA as they did before. The growth in resources allocated to internal audit is measured as follows:

$P_{it}^*$  = the annual percent growth in internal audit costs (IAC), scaled for firm size, for the  $i^{th}$  firm during period  $t$ .

$$P_{it} = \frac{\left[ \frac{\text{The ratio of IAC to size}}{\text{at the end of period } t} \right] - \left[ \frac{\text{The ratio of IAC to size}}{\text{at the beginning of period } t} \right]}{\text{The ratio of IAC to size at the beginning of period } t}$$

for the  $i^{th}$  firm.

We annualized these growth rates to simplify the presentation of our results, as follows:

$$P_i^* = (1 + P_{it}^*)^{1/y} - 1$$

where  $y$  = the number of years from the beginning to the end of period  $t$ .

As noted above, firm size is measured by revenue in nonfinancial firms and assets in financial firms.

The first null ( $H_0$ ) and alternative ( $H_a$ ) hypotheses are:

$$H_0(1): \bar{D} \leq 0;$$

$$H_a(1): \bar{D} > 0$$

where  $D_i = P_{i \text{ test}}^* - P_{i \text{ control}}^*$ ; the percent growth in scaled internal audit costs after the FCPA minus the percent growth in scaled internal audit costs before the FCPA for the  $i^{th}$  firm.

The effect of the FCPA on growth in resources allocated to internal audit is shown in Table 1. Line 1 shows the average annual growth ( $\bar{P}^*$ ) for the pre-event period, 1974-77, and three post-event periods. Line 2 shows the

difference in annual growth rate ( $\bar{D}$ ) between each post-event period and the pre-event period. Lines 3 through 5 show t-statistics and significance levels, including the significance of the Wilcoxon matched-pairs, signed-rank test.<sup>15</sup>

The findings reported in Table 1 show a 2.050% annual scaled growth rate for the three year period before the FCPA was enacted. This is consistent with the claim made to us during pilot studies that internal audit department size was increasing more than firm size before the FCPA was enacted. We also find, however, that the annual scaled growth rate for the post-FCPA period, 1977-81 was 5.314%, which was significantly greater than before the FCPA was enacted. We partitioned the post-event period of four years into a one-year "short-term" effect (1977-78) followed by a three year "long-term" effect. As shown in Table 1, whereas the short-term annual growth rate was 12.997%, the "long-term" rate was only 3.877%.

These results imply that there was a large increase in resources allocated to internal audit immediately after the law was enacted. This was followed by a growth rate during the 1978-81 period that was higher than the pre-event (1974-77) growth rate, but lower than the short-term post-event (1977-78) growth rate. These results are consistent with the notion that internal audit was used to monitor compliance with the law and that these resources would not have been allocated to internal audit if the law had not been enacted. These results also imply that resources were being allocated to internal audit as an increasing function of firm size independent of the FCPA; hence, the FCPA alone was not responsible for the increasing allocation of resources to internal audit. But the FCPA also had a large, short-term effect on internal audit.

Sensitivity of the results to measures of size. We checked the sensitivity of the results shown in Table 1 to the following alternative measures of size: assets, revenues, square root of assets, and square root of revenue for

all firms. The square root measures were used because there is evidence that external audit fees are nonlinearly related to the square root of assets in cross-section studies (Simunic [1980]; Maher, et al. [1985]), and because we found the cross-sectional correlations between internal audit costs and both linear and nonlinear measures of size to be approximately the same. We found the results were virtually unaffected by the choice of size measure. (These results are presented in Appendix B.) The increased allocation of resources to internal audit is significant ( $\alpha = .05$ ) for the short-term post-FCPA period using any of the size measures.

Our sensitivity analysis leads us to conclude that the results are generally stronger if measures of size other than revenue are used. Our use of revenue as a size measure for nonfinancial firms is conservative with respect to our findings. For financial firms, the short-term effects of the FCPA are not affected to the choice of assets or revenue, but the long-term effects are sensitive to the size measure because the impact of inflation on the size measure is much greater than its impact on internal audit costs.

Additional evidence: Comparison of regulated to non-regulated firms. Although our primary test used a within-firm research design, we also made an across-firm comparison of regulated to non-regulated firms. In Table 2, the difference in growth rate is significantly greater in regulated firms than in non-regulated firms, where non-regulated firms are those to which the FCPA does not apply because they are neither registered with the SEC nor have foreign operations. These results, like those in Table 1, support rejection of  $H_0$ . We do not consider the results in Table 2 to be stand-alone results because of the poor match between regulatory and non-regulatory firms. Nevertheless, these across-firm results do corroborate the within-firm results reported in Table 1.

Impact of the Antibribery Provision

Tables 3 through 5 show the results of our tests of the effects of the antibribery provision, which affects only firms with foreign operations. We attempt to ascertain whether there is a difference in the allocation of resources of firms affected by both the internal controls and the antibribery provisions compared to firms affected only by the internal control provision. The findings in Tables 1 and 2 imply that the FCPA had an effect on the allocation of resources to internal audit, but they do not indicate whether the internal control provision or the antibribery provision is primarily responsible. The tests reported in Tables 3 through 5 attempt to shed some light on this issue.

The null ( $H_0$ ) and alternative ( $H_a$ ) hypotheses tested here are:

$$H_0(2): \quad \bar{D}_f \leq \bar{D}_d$$

$$H_a(2): \quad \bar{D}_f > \bar{D}_d$$

Where the subscript f refers to firms that have foreign (and domestic) operations and the subscript d refers to firms that have only domestic operations.  $H_a(2)$  predicts that the increase in resources allocated to internal auditing will be greater in firms with foreign operations. Our primary sources of information about foreign operations are 10-K reports.

The results in Table 3 indicate that the subsample of firms with foreign operations had a higher internal audit growth rate than firms with only domestic operations before the FCPA was enacted. After the FCPA, the growth rate for both subsamples increased, but the increase in growth rate was lower for the subsample of firms with foreign operations. These results do not support rejecting the null hypothesis.

Difference between bribery and non-bribery firms. Although the anti-bribery provision applies to all firms with foreign operations, we expect the incentive to monitor compliance with the antibribery provision to be positively related to the probability that the firm is paying bribes. Consequently, we compare the allocation of resources to internal audit between subsets of firms which have different probabilities of bribery activity. We assume the probability of bribery activities in a firm is a function of (1) doing business in countries where bribery is known to be a common practice and (2) recent past bribery activities. Bribery activities are more common in developing countries, particularly those characterized by military dictatorships. Data on countries in which bribery is a common practice were obtained from a study on export disincentives by the U.S. Department of Commerce [1980].

Panel A of Table 4 compares the growth in resources allocated to internal audit for the firms with operations in bribery countries to the growth in the firms with foreign operations not in bribery countries. The results show a higher growth rate before the FCPA for firms in bribery countries than for firms with foreign operations in nonbribery countries. In fact, most of the pre-FCPA high growth rate for firms with foreign operations shown in Table 3 (line 1b) can be attributed to firms operating in bribery countries.

The difference between post-FCPA and pre-FCPA growth rates was higher for the subsample operating in bribery countries for 1977-78, but the difference is not significant. (Compare lines 2a and 2b in Panel A of Table 4.)

Panel B of Table 4 carries this analysis a step further. The set of firms with operations in bribery countries include both firms that have reported paying bribes and those that have not reported bribery activity. Hence, we also compare the allocation of resources to internal audit in bribery firms vs.



nonbribery firms. Data on firms reporting bribes were obtained from summaries of reported bribes on 8-K and 10-K reports (Kennedy and Simon [1978], Sensitive Payments of Corporations [1977], and U.S. Securities and Exchange Commission [1976]) and from a search of bribery activities reported in the Wall Street Journal between 1972 and 1978. The results in Panel B are similar to those in Panel A; that is, there was a greater increase in the allocation of resources to internal audit in bribery firms immediately after the FCPA was enacted (1977-78), but the difference between subsamples was not significant.<sup>16</sup>

#### Summary

These results imply that the FCPA had an effect on the amount of resources allocated to internal audit. Internal audit was an increasing function of firm size before the law was enacted; however, the rate of growth after the FCPA was significantly greater than before. The most dramatic growth occurred in 1978, the year immediately after the law was enacted. The growth for the 1978-81 period was greater than that for the 1974-77 pre-FCPA period, but substantially less than for the 1977-78 period.

Figure 1 contains a graphic presentation of the average annual percent growth for the subsamples of firms in Tables 2 and 3. The greatest increase in growth occurred in S.E.C. firms operating in foreign countries followed by S.E.C. firms with only domestic operations. Although the antibribery provision may have had an effect on resources allocated to internal audit, we did not find a significant difference between firms to which the antibribery provision applies and those to which it does not apply. In the next section of the paper, we examine the impact of the antibribery provision on external audit fees because there may be greater incentives to use independent auditors to monitor compliance with the antibribery provision.

5. AN EXTENSION: EFFECT OF THE FCPA ON EXTERNAL AUDIT FEES

Although internal audit presumably has a comparative cost advantage over external audit in monitoring compliance with the internal control provision of the FCPA, external audit has a comparative advantage when independence from top management is an important factor in monitoring regulatory compliance. If the Board of Directors suspected top management of illicit activities, it would have incentives to monitor management's activities using the more independent auditors. Further, the independence of external auditors makes them a more credible signal if top management or the Board of Directors wanted to signal to regulatory agencies that they were making a "good faith" attempt at monitoring compliance with the law.

If external auditing is used to monitor compliance with the FCPA, then we expect its use to be greater in firms with foreign operations. The independence value of external auditors should be higher in firms affected by the antibribery provision, particularly in firms with a history of paying bribes; and the cost advantage of internal audit is likely to be lower in foreign countries. In addition, the notoriety of bribery activities may result in increased risk to auditors which could increase the price of audit services or the quantity of audit services or both. Consequently, we predict that external audit fees will increase in firms with foreign operations, particularly if those firms have a history of bribery activity, compared to firms with only domestic operations.

We use the same research design for external audit fees as we did for internal audit costs, including the use of assets as the size measure in financial firms and revenues in nonfinancial firms.<sup>17</sup> The sample is comprised of 76 SEC-registered firms, which is smaller than the internal audit cost sample

because fewer firms provided data for each of the four years, 1974, 1977, 1978, 1981.

The results in Table 5 show a short-run (1977-78) post-FCPA effect for companies with foreign operations, after predicted, but not a long-run effect (compare lines 2a and 2b). The results in Table 6 are similar. Panels A and B compare samples of companies with no operations in bribery-prevalent countries to companies with operations in bribery-prevalent countries (Panel A) and companies that had reported paying bribes (Panel B). Both sets of comparisons imply a significant short-term effect of the FCPA on external audit fees. After adjusting for size, audit fees declined after the FCPA for companies in no-bribe countries; but for companies in bribery countries, audit fees increased substantially in the short-term post-FCPA period, then declined in the long-term post-FCPA period. Figure 2 summarizes these trends graphically.

Discussion. These results imply that the FCPA had a short-term effect on external audit fees in companies likely to be most affected by the anti-bribery provision. We found no evidence of a long-run effect, however. One explanation is that external auditors increased their internal control reviews in the short-run which made it possible to reduce this work in subsequent years. It should be noted that we are not able to separate price and quantity effects. External audit fees may have increased due to price effects, alone, because (say) the risk of auditing bribery clients had temporarily increased.

## 6. CONCLUSIONS, LIMITATIONS, AND IMPLICATIONS

The results support the hypothesized impact of the FCPA on internal audit costs. There was a significant increase in the growth of internal audit costs, after adjusting for firms' growth, after the FCPA. This effect was primarily

a short-run, but permanent effect. That is, the increase in 1977-78 was not offset by a subsequent decrease in 1978-81. The increase in growth was about the same for both firms with only domestic operations and firms that also had foreign operations, implying that the antibribery provision was not driving the result. Our comparison of firms operating in bribery-prevalent countries to those operating only in foreign countries where bribery is not prevalent revealed a greater short-run increase in internal audit costs for the bribery firm subset, but the difference between groups of firms was not significant. On the other hand, we found significant differences between bribery and non-bribery firms for external audit fees for the short-run, post-FCPA growth. These results imply that internal audit may have been used to monitor compliance with the internal control provision while external audit was used to monitor compliance with the antibribery provision.

This study has both internal and external validity limitations which should temper our conclusions. Inherent in a matched sample design is the possibility that there are systematic differences between the control and treatment groups that are spuriously correlated with the variable being manipulated. In this case, our findings of a short-run effect may have been caused by factors other than either the FCPA or changes in firm size that resulted in an increased allocation of resources to internal audit. Any such effects would have had to affect internal audit more in the 1977-78 test period than in the 1974-77 control period. External validity problems occur primarily because our sample is comprised of relatively large, mature firms that had no major changes in organizational complexity or other variables (besides size) that we thought might affect the demand for auditing. These findings may not be generalizable to smaller firms, to firms that started an

internal audit department during the period in question, or to firms that made major organizational changes.

The factors of demand for accounting and auditing are generally thought to include both regulatory and nonregulatory variables. This study's findings suggest that internal audit is no exception. Although the results imply that the FCPA had an effect on the allocation of resources to internal audit, we also observed internal audit growing faster than firm size before the FCPA was enacted. If this growth was not in anticipation of the law, then there may have been an increasing demand for internal audit independent of the FCPA.

Our empirical finding that internal audit costs were increasing while external audit fees were decreasing suggest that research into the substitution of internal audit for external audit may be fruitful.<sup>18</sup> This also suggests the need for future research to specify a more complete model of resource allocations to internal audit. Such a model should recognize the impact of the FCPA. The FCPA may not have been the "Internal-Auditor Full-Employment Act of 1977," but this study's results imply it was a factor in internal audit growth.

FOOTNOTES

<sup>1</sup>For example, see Benston [1969], Ng [1978], Dopuch and Simunic [1980], Watts [1977], Watts and Zimmerman [1982, 1983], and Clowery [1985].

<sup>2</sup>The FCPA probably had little effect on Simunic's results because he used 1977 data and the FCPA was not enacted until December 1977.

<sup>3</sup>An unanswered question that is beyond the scope of this study is: How do managers choose the optimal mix of controls, monitoring, incentives, and auditing?

<sup>4</sup>Agents also may benefit from agreements to use auditors because the use of auditors can increase the set of information used to make contracts. See Watts and Zimmerman [1981].

<sup>5</sup>Regulation will have a differential impact on particular managers, of course, hence, some have greater incentives to comply than others. The study of conflict resolution among these managers is beyond the scope of this paper.

<sup>6</sup>Improvements in internal controls may have been made after the review and documentation effort in these firms, of course.

<sup>7</sup>Each of the "Big 8" CPA firms, as well as various legal authorities (e.g., Foreign Corrupt Practices Act Reporter [1979]) and professional associations (e.g., American Bar Association [1978], AICPA [1979]) have recommended strategies for compliance programs. In general, these strategies include formal communication of an interpretation of the statute by legal counsel, seminars and training programs for financial and operating personnel, and a formal statement of ethical policy in the firm's code of conduct. "The reason for all of the above is, of course, to show (emphasis added) that the company does have a good system and program" (Foreign Corrupt Practices Act Reporter [1979], p. 122).

<sup>8</sup>Some evidence of this was found in the earlier study reported in Maher [1981, 1982].

<sup>9</sup>An increase in internal audit also could signal compliance with the law.

<sup>10</sup>Rose-Ackerman [1978] shows that eliminating bribery reduces the "marketing" costs to the supplier firm; hence, the supplier would be able to supply the product at a lower equilibrium price if bribes are eliminated. Beck and Maher [1985a, 1985b] show conditions under which regulation of bribes paid to foreign government officials would increase sellers' transactions costs.

<sup>11</sup>Several witnesses testified that the problems revealed by the disclosures of companies reporting questionable payments did not represent a breakdown in control. These included Roderick Hills (U.S. House of Representatives [1976], p. 26), Chairman of the SEC at that time, and Thomas Holton, Chairman of the AICPA Committee on SEC Regulations who stated: "There is no indication that it was the lack of adequate systems of internal accounting controls of

these companies that resulted in the abuses and prevented their detection and disclosure." (U.S. House of Representatives [1976], p. 158). This view was supported by Senator Proxmire who noted that the law... "would merely codify the requirements that a corporation keep honest records, a requirement that is at least implicit in the entire system of corporate accountability." (U.S. Senate [1976], p. 1).

Representative Moss provided an opposing view. He testified that the questionable payments disclosures indicated that companies had problems with their internal controls. "These accounting gimmicks point to part of the underlying problem, the ineffectiveness of internal corporate accounting and auditing controls." (U.S. House of Representatives [1976], pp. 153-154).

<sup>12</sup>See American Institute of Certified Public Accountants [1981], p. 42.

<sup>13</sup>See Kugel and Gruenberg [1977] and U.S. Securities and Exchange Commission [1976].

<sup>14</sup>Of the 101 SEC registered firms in the sample, 83 are nonfinancial firms and 18 are financial firms.

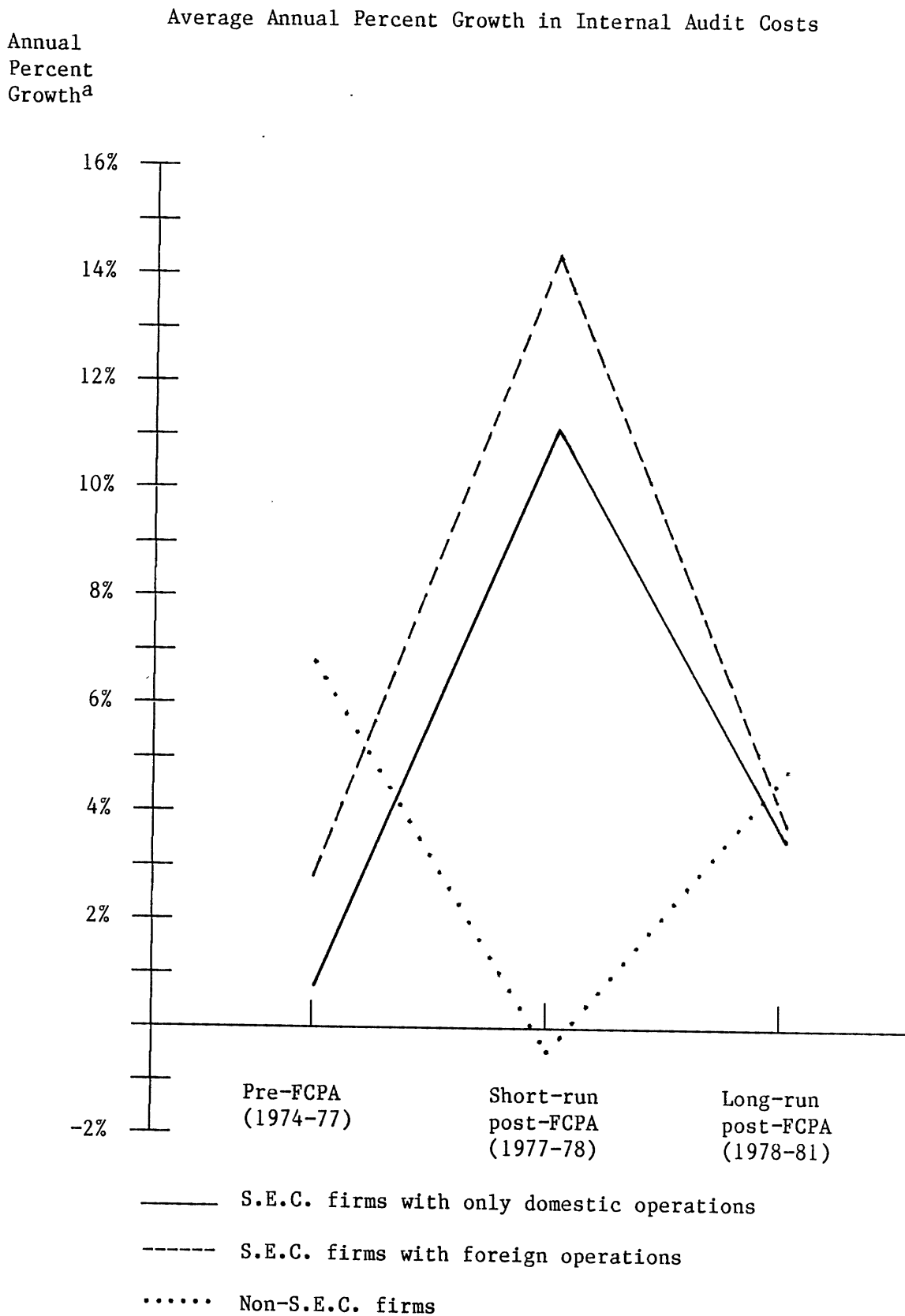
<sup>15</sup>The properties of the Wilcoxon matched pairs, signed ranks test are discussed in Hollander and Wolfe [1973], pp. 27-33 and in Siegel [1956], pp. 75-83. The null hypothesis for the nonparametric tests is modified from that shown in the text, of course. The null hypothesis in this test is that the sum of the signed ranks of firms increasing their allocation of resources to internal audit is less than or equal to the sum of the signed ranks of firms not increasing their allocation of resources to internal audit.

<sup>16</sup>We also compared the bribery firm subsamples in Panels A (firms with operations in bribery countries) and B (firms paying bribes) of Table 4 with the subsample of firms with only domestic operations. Although the bribery firms had a higher increase in the allocation of resources to internal audit for the short-run post-FCPA period (1977-78), the difference between samples was not significant. (The reader can compare the sample means by comparing line 2b, Panels A and B, Table 4 with line 2a, Table 3.)

<sup>17</sup>Other studies have used the square root of assets to control for size variation in cross-section studies of external audit fees (e.g., Simunic [1980], Maher, et al. [1985]). We use revenues and assets for nonfinancial and financial firms respectively because we believe they control for joint changes in real firm size and price-level changes. External audit fees are known to be affected by other variables, such as organizational complexity and the proportion of current to total assets. For these omitted variables to affect our findings, there would have to be systematic differences in their effect on audit fees both: (1) before and after the FCPA, and (2) between domestic and foreign firms. As noted in Section 3, the firms studied have not had major organizational changes over the period 1974-81.

<sup>18</sup>Klemstine [1985] provides evidence of such a substitution.

Figure 1

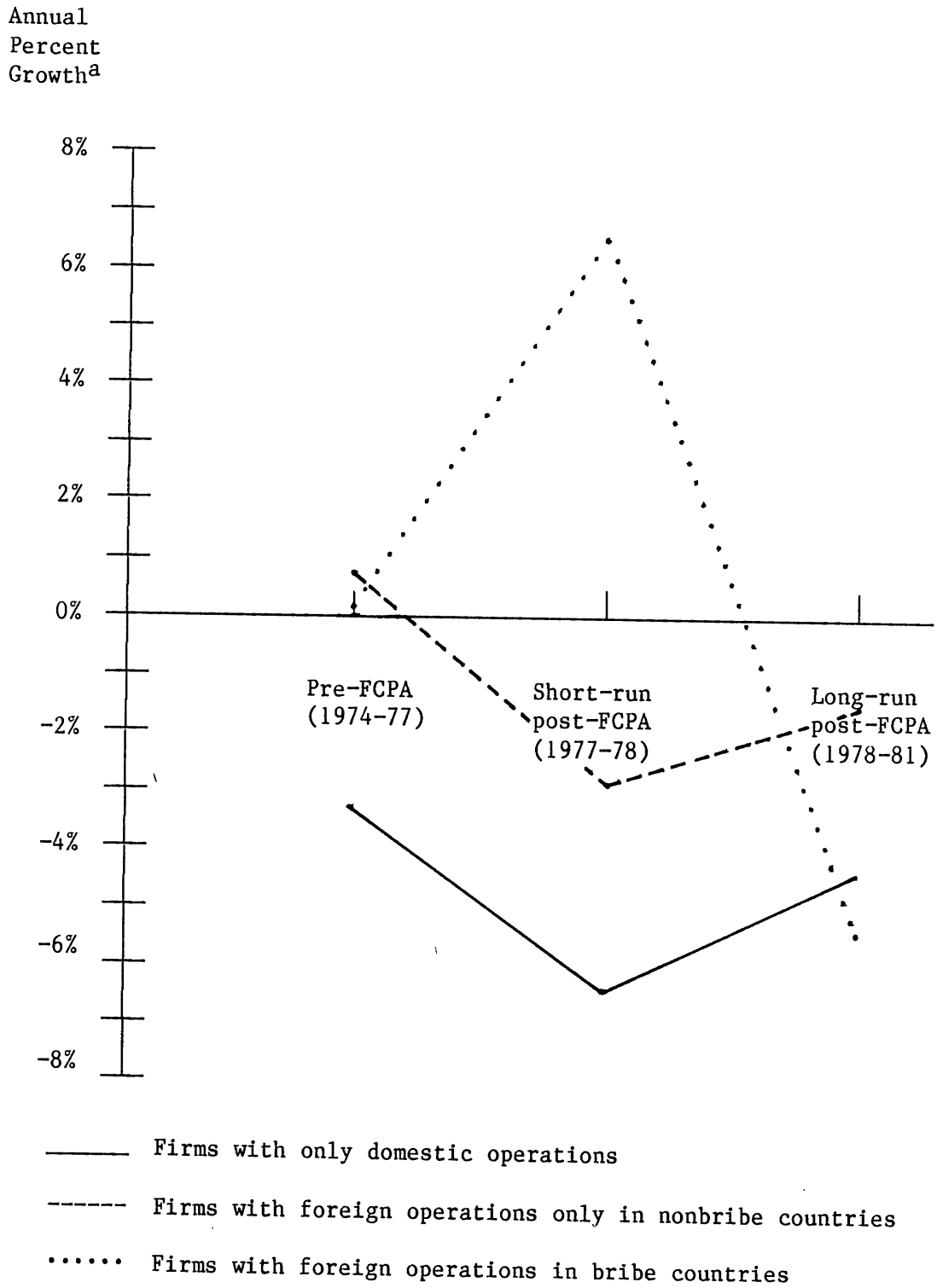


<sup>a</sup>Average annual percent growth is scaled for firm size using revenue as the size measure in nonfinancial firms and assets as the size measure in financial firms.



Figure 2

Average Annual Percent Growth in External Audit Costs



<sup>a</sup>Average annual percent growth is scaled for firm size using revenue as the size measure in nonfinancial firms and assets as the size measure in financial firms.

TABLE 1

ANNUAL PERCENT GROWTH IN INTERNAL AUDIT COSTS FOR FCPA-REGULATED COMPANIES

	PRE-FCPA	POST-FCPA		
	1974-77	1977-81	1977-78	1978-81
ALL FCPA-REGULATED COMPANIES (n=101)				
1. Average Annual Percent Growth ( $\bar{P}^*$ ) <sup>a</sup>	2.050%	5.314%	12.997%	3.877%
2. Average Difference in Growth ( $\bar{D}$ ) Post-ACPA minus Pre-FCPA		3.264%	10.947%	1.827%
3. T-statistic for Difference in Growth		1.850	2.742	1.034
4. Significance of T-statistic <sup>b</sup>		.033	.004	.152
5. Significance of Wilcoxon Matched-Pairs Signed Rank Statistic <sup>b</sup>		.003	.013	.026

<sup>a</sup>Computation of annualized growth is as follows:

$P_{it}$  = Percent growth in internal audit costs, scaled for firm size, for the  $i^{th}$  firm during period  $t$ ,

$$= \frac{\left[ \text{The ratio of salary/size at the end of period } t \right] - \left[ \text{The ratio of salary/size at the beginning of period } t \right]}{\text{The ratio of salary/size at the beginning of period } t}$$

for the  $i^{th}$  firm. (Size refers to revenue in nonfinancial companies, and to assets in financial companies.)

Then, to annualize:

$P^*$  = annual percent growth

$$= (1 + P_{it})^{1/y} - 1$$

where  $y$  = the number of years from the beginning to the end of period  $t$ .

<sup>b</sup>One-tail test.

TABLE 2

COMPARISON OF FCPA-REGULATED COMPANIES TO NON-FCPA-REGULATED COMPANIES

	PRE-FCPA	POST-FCPA		
	1974-77	1977-81	1977-78	1978-81
TOTAL COMPANIES				
1. Annual Percent Growth in Internal Audit Costs:				
a. Non-FCPA-Regulated Cos. (n=35)	6.753%	2.800%	-.585%	4.868%
b. FCPA-Regulated Cos. (n=101) <sup>a</sup>	2.050%	5.314%	12.997%	3.877%
2. Average Difference in Growth:				
a. Non-FCPA-Regulated Cos.		-3.953%	-7.338%	-1.885%
b. FCPA-Regulated Cos. <sup>a</sup>		3.264%	10.947%	1.827%
3. T-statistic for Differences Between Means of Two Samples		1.714	2.440	.845
4. Significance of T-statistic <sup>b</sup>		.044	.008	.200
5. Significance of Mann-Whitney Statistic <sup>b</sup>		.122	.073	.214

<sup>a</sup>See Table 1.

<sup>b</sup>One-tail test.

TABLE 3

IMPACT OF ANTIBRIBERY REGULATION ON COMPANIES WITH FOREIGN OPERATIONS

	PRE-FCPA	POST-FCPA		
	1974-77	1977-81	1977-78	1978-81
TOTAL FCPA-REGULATED COMPANIES				
1. Annual Percent Growth in Internal Audit Costs:				
a. Companies with Only Domestic Operations (n=44)	.894%	5.019%	11.272%	3.851%
b. Companies with Domestic and Foreign Operations (n=57)	2.942%	5.543%	14.328%	3.896%
2. Average Difference in Growth:				
a. Companies with Only Domestic Operations ( $\bar{D}_d$ )		4.125%	10.378%	2.957%
b. Companies with Domestic and Foreign Operations ( $\bar{D}_f$ )		2.601%	11.386%	.954%
3. T-statistic for Differences Between Means of Two Samples		.426 <sup>b</sup>	.124	.560 <sup>b</sup>
4. Significance of T-statistic <sup>a</sup>		.665	.451	.712
5. Significance of Mann-Whitney Statistic <sup>a</sup>		.863	.198	.684

<sup>a</sup>One-tail test.

<sup>b</sup>Differences between samples are in the direction opposite from that predicted.

TABLE 4

IMPACT OF ANTIBRIBERY REGULATION ON COMPANIES REPORTING BRIBES

	PRE-FCPA	POST-FCPA	
	1974-77	1977-81	1977-78    1978-81
A. IMPACT OF FCPA ON INTERNAL AUDIT COSTS IN BRIBE COUNTRIES			
1. Annual Percent Growth in Internal Audit Costs:			
a. Companies with Domestic and Foreign Operations, not in Bribe Countries (n=16)	.576%	5.407%	3.516%    6.451%
b. Companies with Domestic and Foreign Operations, in Bribe Countries (n=41)	3.865%	5.595%	18.547%    2.899%
2. Average Difference in Growth:			
a. Companies with Domestic and Foreign Operations, not in Bribe Countries ( $\bar{D}_n$ )		4.831%	2.940%    5.875%
b. Companies with Domestic and Foreign Operations, in Bribe Countries ( $\bar{D}_b$ )		1.730%	14.682%    -.966%
3. T-statistic for Differences Between Means of Two Samples		.618 <sup>b</sup>	.872    1.457 <sup>b</sup>
4. Significance of T-statistics <sup>a</sup>		.731	.194    .925
5. Significance of Mann-Whitney Statistic <sup>a</sup>		.831	.335    .903

<sup>a</sup>One-tail test.

<sup>b</sup>Differences between samples are in the direction opposite from that predicted.

TABLE 4

IMPACT OF ANTIBRIBERY REGULATION ON COMPANIES REPORTING BRIBES  
(continued)

	PRE-FCPA	POST-FCPA	
	1974-77	1977-81	1977-78    1978-81
<b>B. IMPACT OF FCPA ON INTERNAL AUDIT COSTS ON COMPANIES REPORTING BRIBES</b>			
1. Annual Percent Growth in Internal Audit Costs:			
a. Companies with Domestic and Foreign Operations, not in Bribe Countries (n=16)	.576%	5.407%	3.516%    6.451%
b. Companies with Foreign Operations in Bribe Countries, Reporting Bribes (n=30)	.842%	7.432%	20.531%    4.995%
2. Average Difference in Growth:			
a. Companies with Domestic and Foreign Operations, not in Bribe Countries ( $\bar{D}_n$ )		4.831%	2.940%    5.875%
b. Companies with Foreign Operations in Bribe Countries, Reporting Bribes		6.950%	19.689%    4.153%
3. T-statistic for Differences Between Means of Two Samples		.386	1.104    .452 <sup>b</sup>
4. Significance of T-statistics		.351	.138    .673
5. Significance of Mann-Whitney Statistic		.491	.223    .627

<sup>a</sup>One-tail test.

<sup>b</sup>Differences between samples are in the direction opposite from that predicted.

TABLE 5

IMPACT OF ANTIBRIBERY REGULATION ON EXTERNAL AUDIT FEES IN COMPANIES WITH FOREIGN OPERATIONS

	PRE-FCPA	POST-FCPA	
	1974-77	1977-81	1977-78    1978-81
TOTAL FCPA-REGULATED COMPANIES			
1. Annual Percent Growth in External Audit Fees:			
a. Companies with Only Domestic Operations (n=29)	-3.400%	-5.059%	-6.366%    -4.399%
b. Companies with Domestic and Foreign Operations (n=47)	.251%	-2.723%	3.539%    -4.314%
2. Average Difference in Growth:			
a. Companies with Only Domestic Operations ( $\bar{D}_d$ )		-1.659%	-2.966%    -.999%
b. Companies with Domestic and Foreign Operations ( $\bar{D}_f$ )		-2.974%	3.288%    -4.565%
3. T-statistic for Differences Between Means of Two Samples		.395 <sup>b</sup>	1.507    .979 <sup>b</sup>
4. Significance of T-statistic <sup>a</sup>		.653	.068    .835
5. Significance of Mann-Whitney Statistic <sup>a</sup>		.687	.130    .879

<sup>a</sup>One-tail test.

<sup>b</sup>Differences between samples are in the direction opposite from that predicted.

TABLE 6

IMPACT OF ANTIBRIBERY REGULATION ON EXTERNAL AUDIT FEES ON COMPANIES REPORTING BRIBES

	PRE-FCPA	POST-FCPA		
	1974-77	1977-81	1977-78	1978-81
A. IMPACT OF FCPA ON EXTERNAL AUDIT FEES IN BRIBE COUNTRIES				
1. Annual Percent Growth in External Audit Fees:				
a. Companies with Domestic and Foreign Operations, not in Bribe Countries (n=15)	.694%	-2.214%	-2.978%	-1.708%
b. Companies with Domestic and Foreign Operations, in Bribe Countries (n=32)	.044%	-2.961%	6.594%	-5.535%
2. Average Difference in Growth:				
a. Companies with Domestic and Foreign Operations, not in Bribe Countries ( $\bar{D}_n$ )		-2.908%	-3.672%	-2.402%
b. Companies with Domestic and Foreign Operations, in Bribe Countries ( $\bar{D}_b$ )		-3.005%	6.550%	-5.579%
3. T-statistic for Differences Between Means of Two Samples		.027 <sup>b</sup>	2.067	.763 <sup>b</sup>
4. Significance of T-statistics <sup>a</sup>		.511	.022	.775
5. Significance of Mann-Whitney Statistic <sup>a</sup>		.509	.011	.781

<sup>a</sup>One-tail test.

<sup>b</sup>Differences between samples are in the direction opposite from that predicted.



TABLE 6

IMPACT OF ANTIBRIBERY REGULATION ON EXTERNAL AUDIT FEES ON COMPANIES  
REPORTING BRIBES  
(continued)

	PRE-FCPA	POST-FCPA	
	1974-77	1977-81	1977-78    1978-81
<b>B. IMPACT OF FCPA ON EXTERNAL AUDIT FEES ON COMPANIES REPORTING BRIBES</b>			
1. Annual Percent Growth in External Audit Fees:			
a. Companies with Domestic and Foreign Operations, not in Bribe Countries (n=15)	.694%	-2.214%	-2.978%    -1.708%
b. Companies with Foreign Operations in Bribe Countries, Reporting Bribes (n=23)	-1.456%	-2.382%	6.495%    -4.779%
2. Average Difference in Growth:			
a. Companies with Domestic and Foreign Operations, not in Bribe Countries ( $\bar{D}_n$ )		-2.908%	-3.672%    -2.402%
b. Companies with Foreign Operations in Bribe Countries, Reporting Bribes		-.926%	7.951%    -3.323%
3. T-statistic for Differences Between Means of Two Samples		.575	2.540    .222 <sup>b</sup>
4. Significance of T-statistics		.284	.008    .587
5. Significance of Mann-Whitney Statistic		.354	.007    .589

<sup>a</sup>One-tail test.

<sup>b</sup>Differences between samples are in the direction opposite from that predicted.

APPENDIX A

Demographic Characteristics of Firms Studied

Demographic Characteristics for Firms Having Internal Audit Departments  
in the Sample for 1981  
(000's omitted)

Percentile			25%	Median	75%	Mean
Cases	Variables	N				
All	Assets	136	\$509,610	\$1,400,000	\$2,758,000	\$3,401,800
All	Revenues	136	311,650	1,009,500	2,545,900	2,540,500
All	I.A. Costs <sup>a</sup>	136	200	376	900	762
All	E.A. Fees <sup>b</sup>	76	207	512	1,200	837
Nonfinancial	Assets <sup>c</sup>	107	\$509,610	\$1,573,000	\$2,776,900	\$2,600,300
Nonfinancial	Revenues <sup>c</sup>	107	612,000	1,376,800	2,870,700	2,989,400
Nonfinancial	I.A. Costs <sup>d</sup>	107	255	500	907	794
Nonfinancial	E.A. Fees <sup>d</sup>	63	250	700	1,300	893
Financial	Assets	29	\$600,000	\$1,065,000	\$2,100,000	\$6,359,100
Financial	Revenues	29	55,861	125,010	240,000	884,010
Financial	I.A. Costs	29	87	315	380	643
Financial	E.A. Fees	13	85	135	450	568

<sup>a</sup>Internal Audit costs.

<sup>b</sup>External Audit fees, for FCPA-regulated companies.

<sup>c</sup>Includes manufacturing (n=55), oil and mining (n=6), insurance (n=16), utilities (n=13), and retail/services (n=17).

<sup>d</sup>Includes manufacturing (n=38), oil and mining (n=5), insurance (n=2), utilities (n=11), and retail/services (n=7).

APPENDIX B

Sensitivity of Results in Table 1  
to Alternative Measures of Size

	PRE-FCPA	POST-FCPA		
	1974-77	1977-81	1977-78	1978-81
Average Annual Percent Growth per Table 1 <sup>a</sup>	2.050%	5.314%	12.997%	3.877%
Average Annual Percent Growth Using Other Size Measures:				
Assets	3.194%	5.813%	11.360%	5.055%
Revenue	2.182%	3.613%	11.788%	1.991%
Square Root of Assets	8.207%	11.719%	18.858%	10.409%
Square Root of Revenue	7.673%	10.543%	19.106%	8.762%
Average Difference in Growth per Table 1 ( $\bar{D}$ )		3.264%	10.947%	1.827%
Average Difference in Growth Using Other Size Measures:				
Assets		2.619%	8.166%	1.861%
Revenue		1.431%	9.606%	-.191%
Square Root of Assets		3.512%	10.651%	2.202%
Square Root of Revenue		2.870%	11.433%	1.089%
T-statistic and Significance of Difference per Table 1		1.850 (.033) <sup>b</sup>	2.742 (.004) <sup>b</sup>	1.034 (.152) <sup>b</sup>
T-statistic and Significance of Difference Using Other Size Measures:				
Assets		1.587 (.058) <sup>b</sup>	2.053 (.022)	1.142 (.128) <sup>b</sup>
Revenue		.784 (.218)	2.370 (.010)	-.107 (.543)
Square Root of Assets		2.134 (.018) <sup>b</sup>	2.593 (.006) <sup>b</sup>	1.390 (.084) <sup>b</sup>
Square Root of Revenue		1.647 (.052) <sup>b</sup>	2.750 (.004) <sup>b</sup>	.656 (.257) <sup>b</sup>

<sup>a</sup>The size measures used in Table 1 are revenues for nonfinancial firms (n=83) and assets for financial firms (n=18).

<sup>b</sup>Also significant at the .05 level using the Wilcoxon matched pairs, signed rank test.

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