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**TOWARD AN EMPIRICAL INSTITUTIONAL GOVERNANCE THEORY:  
ANALYSES OF THE DECISIONS BY THE 50 US STATE GOVERNMENTS TO  
ADOPT GENERALLY ACCEPTED ACCOUNTING PRINCIPLES \***

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**ABSTRACT**

In this paper, we develop and empirically test an institutional governance theory for explaining the decisions by the population of 50 US state governments to adopt Generally Accepted Accounting Principles (GAAP) for external financial reporting. Governmental accounting studies have generally explained the governance choice of an accounting method in terms of the economic consequences of these choices for managerial welfare and other microeconomic determinants of those decisions. While the explanatory power of these models are generally good, there is often a large unexplained variance which is presumably not explainable in terms of the extant agency models of accounting choice. Our study develops an institutional governance theory and demonstrates that institutional governance variables in conjunction with traditional economic agency variables can improve the explanatory power of government accounting choice models. Our empirical results are consistent with the stipulations of the institutional governance theory.

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The objective of this paper is to (i) develop an institutional governance theory and to (ii) demonstrate empirically how the institutional governance theory can be used to improve the explanatory power of governmental accounting choice models. The conceptual framework developed herein seeks to identify the conditions under which economic self-interest motives are more likely to drive the decision of the US state governments to use professionally endorsed governance accounting practices versus those conditions which are more likely to result in an organization resisting institutional pressures for change. The institutional governance theory offered in this paper includes an examination of the role of professional associations, and other contextual factors including the federal government as determinants of institutional pressures for change in accounting practices for state governments. The institutional governance theory places the rational self-interest motives of government bureaucrats within the context of institutional pressures for organizational change.

We argue that the institutional theory of governance should be viewed as a complement to agency theory and not viewed as a competing theory. Our view is consistent with earlier applied economics models of accounting choice that assumed individuals maximize their utility subject to certain rules and institutional settings. Because the extant agency theory models from prior research do not take into account that individuals can work to avoid or change organizational and/or institutional rules, we seek to advance

our understanding of accounting choice in the government and not-for-profit sector by developing a model that includes institutional governance theory variables in conjunction with established agency theory variables.

Watts and Zimmerman (1978, p. 113-117) identify conditions under which managers are likely to lobby on accounting standards, thereby altering the institutional rules by which their performance will be evaluated. Other accounting studies have considered the institutional governance perspective more explicitly in addressing financial reporting practices in the corporate and not-for-profit sectors (Boland 1982; Cheng, 1994, p. 49; Covalleski and Dirsmith 1988, p. 2; Meyer 1986, p. 112; Mezas 1990, p. 434). Several other studies have used institutional theory to model decision making processes of government entities in other contexts (Gore 1993; Hood 1995; Scott 1987; Townley 2002, p. 4).

Mezas (1990, p. 450) used an institutional model to investigate the decision of Fortune 200 companies to record the investment tax credit between 1962 and 1984 on the income statement. His findings indicate that inclusion of variables to proxy for changes in the institutional environment adds significant explanatory power over and above models that are based on economic consequences models. Further, Mezas (p. 447) report that much of the variance explained by his model is due to variables suggested by institutional theory.

Carpenter and Feroz (2001, p. 566) specifically address financial reporting practices among governmental entities using an institutional theory approach. They argue that institutional governance variables such as organizational values, politics, and institutional norms may determine bureaucratic self-interest. Using a longitudinal cross-case analysis of four selected US state governments they provide evidence to suggest that institutional pressures affect internal power relations, self-interest motives of actors in the government and not-for-profit sector and the process of institutionalization of professionally endorsed accounting practices in the government sector. They conclude (p. 593) that institutional theory provides a useful theoretical lens through which to view accounting choice in the government and not-for-profit sector.

Our study explicitly builds upon the works of Carpenter and Feroz (2001) and Mezaïs (1990) and demonstrates that institutional governance variables in conjunction with applied economic agency variables can improve the explanatory power of government and not-for-profit sector accounting choice models. The rest of the paper is organized as follows. The first part of the paper reviews government and not-for-profit accounting literature that is based on an applied economics-agency framework. Next, developments in the institutional governance theory that may provide additional insights into the choice of financial reporting practices in the government and not-for-profit sector are introduced. The third part of the paper develops an empirical model incorporating the agency and institutional governance variables. Part four of the paper explains the empirical results. The concluding section draws the implications of these findings for the nascent theory of institutional governance.

## **THE APPLIED ECONOMICS-AGENCY FRAMEWORK OF GOVERNMENTAL AND NOT-FOR-PROFIT ACCOUNTING**

The government and not-for-profit accounting literature is based on an applied economics framework that has employed agency theory as the basis for explaining accounting choice (Jensen and Meckling 1976, p. 309, 323-324; Wallace 1987, p. 53; and Evans and Patton 1983, p. 221-223 and 1987, p. 148-149). Agency theory explains accounting choice and audit demand in terms of contracting problems that result from information asymmetry in organizations. Contracting and monitoring costs arise because the agent's interest does not always coincide with the interests of the principal. Agents (government and non-profit officials and bureaucrats) are viewed as rational self-interested decision-makers that have a common goal with other employees of ensuring survival (Jensen and Meckling 1976, p. 309, Fama and Jensen, 1983 a and b). This leads to the general assumption that agents act to maximize their own utility, adopting accounting practices that maximize management self-interests (Watts and Zimmerman 1978, p.113).

Government and non-profit sector accounting choice studies view government as an overlapping set of contracts with contracting and monitoring costs driving predictions of accounting choice.<sup>1</sup> Predictions in the literature are driven by contracting and monitoring costs associated with enforcing various contracts in the government and non-profit sector such as compliance with federal, state, and local laws and lending agreements. Agency

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<sup>1</sup> Holthausen and Leftwich (1983: 77-78) define "contracting and monitoring costs as those costs associated with designing, negotiating, writing, and evaluating compliance with written and implied contracts."

theory has also been used to focus on the self-interest motives of government bureaucrats in efforts to explain state and local government choice of accounting practices (Evans and Patton 1983, p. 155 and 1987, p. 137; Baber 1983, p. 214; Ingram 1984, p. 131; Cheng 1992, p. 13). These studies have focused on contracting and monitoring costs in explaining economic self-interest motives of various actors in the government and not-for-profit sector to adopt professionally endorsed accounting practices.

Accounting information is viewed as a monitoring mechanism that can be used to reduce contracting costs. Monitoring information may be pre-decision or post-decision accounting information. In the government and not-for-profit sector, the citizens are generally viewed as the principals while government officials or bureaucrats are viewed as the agents. Zimmerman (1977, p. 119) explain why voters have little incentive to demand monitoring information from government entities, and thus are not important actors in understanding the demand for government and not-for-profit sector accounting information. Generally, accounting researchers invoke the agency theory assuming that government bureaucrats make accounting choice decisions based on rational economic behavior in response to explicit or implicit contracts. The goal of agency theory is to identify the optimal contract between a principal and agent(s) in a given set of circumstances. In prior studies, the self-interest motives of bureaucrats have been assumed to be economic in nature; hence, there has been a focus in the literature on the economic consequences of accounting and auditing practices in attempts to explain accounting choice in the government and not-for-profit sector.

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The explanatory power of government and not-for-profit accounting choice models in the extant literature has been low and the significance of variables that proxy for economic self-interest motives has been mixed (Evans and Patton 1983, p. 174 and 1987, p. 154; Baber 1983, p. 224; Baber and Sen, 1984, p. 103; Ingram, 1984, p. 139). The low explanatory power of models reported has resulted in the recognition of the fact that further theoretical development and/or improved empirical methods are needed. Several researchers have argued that further development of government and not-for-profit sector accounting choice may require an interdisciplinary approach (Cheng 1994, p. 64; Carpenter and Feroz, 2001, p. 566).

The governmental and not-for-profit accounting literature has not fully explored how the organizational and institutional environment affects the self-interest motives and lobbying activities of accounting bureaucrats or the elected officials. In the next sections, we develop and test the importance of an institutional governance framework for explaining government accounting choice. We then compare models that include institutional variables to the more traditional agency theory models.

## **DEVELOPMENT OF AN INSTITUTIONAL THEORY OF GOVERNANCE**

Institutional theory de-emphasizes the importance of individual self-interest motives, focusing instead on institutional factors or pressures that lie beyond the organizational boundary (Hoffman 1999, p. 351). Institutional theory views organizations as operating within a nexus of norms, values, and taken-for-granted assumptions about what



constitutes appropriate or acceptable economic behavior (Oliver, 1997, p. 699). In the words of DiMaggio:

.. the utility of institutional theory is limited to the analysis of phenomena that are driven by the taken-for-granted constitutive undertakings or that are so complex that interest-maximizing actors cannot exert effective influence (1988, p. 11).

Scott (1987) points out that institutional theory has many variants and identifies four formulations of institutional theory based on: (1) the process of instilling value in an organization (Selznick 1957, p. 16); (2) the process of creating a social reality which is seen as validly independent of the actor's own views which are taken for granted as the appropriate way to do things within an organization (Berger and Luckmann 1967; Zucker 1987, p 728; Meyer and Rowan 1977, p. 341); (3) the premise that organizations conform to multiple institutionalized belief systems because they are rewarded for doing so with increased legitimacy, resources, and survival capabilities (Meyer and Rowan 1977, p. 348; DiMaggio and Powell 1983, p. 157; Meyer and Scott, 1983, 201); and (4) the traditional sociological view of institutions which focuses on the existence of a set of differentiated and specialized cognitive and normative systems - institutional logic - and patterned human activities that arise and tend to persist, in varying form and content, in all societies (Scott, 1987, p. 500).

Government and not-for-profit sector accounting provides a rich institutional setting to investigate the seemingly convergent insights of institutional theory and agency theory. Oliver (1991, p. 242) is one of the first papers in the sociology of organizations literature that proposes that self-interest motives of organizational actors can be accommodated

within the institutional theory perspective. DiMaggio and Powell (1983, p. 147) description of government entities and the professions as primary shapers of rationalized myths, practices, or institutional forms lends to the belief that institutional practice or institutional form is largely determined by political contests among competing interests (Scott 1987, p. 509). Thus organizational actors, such as accounting bureaucrats, are able to pursue their own self-interest at the institutional (inter-organizational) field level through participation in the political competition that results in the establishment of institutional governance rules such as generally accepted accounting principles (GAAP).<sup>2</sup>

Professional accounting rules, statutory accounting regulations, and professional beliefs can lead to shared social realities in various accounting communities. What makes governmental accounting such an interesting context is the fact that multiple belief systems endorsed by professional accountants create conflicting institutional pressures for change in accounting methods. How these competing institutional pressures influence the organizational decision to adopt or resist governance GAAP as an organizational innovation is an important research question that can help to advance the development of institutional governance theory.

An example of a shared social reality in the public accounting community is that organizations that use GAAP have better financial management practices than those organizations that use cash-basis accounting. The belief that GAAP is good accounting

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<sup>2</sup> Watts and Zimmerman (1978, p. 117) argue that elected officials do not have strong incentives to monitor accounting standards, but do not appear to make strong assumptions in regard to bureaucrats' incentives to

practice while cash-basis accounting is a sub-optimal practice is a shared social reality for most licensed certified public accountants (CPAs). On the other hand, there exists a community of government accountants who believe that cash-basis accounting with a legal compliance focus is the best information for government financial management.

In general, institutional theory focuses on those factors or environmental pressures over which the individual organizational decision-maker is powerless to resist in the long-run even if his/her own self-interest motives are opposed to the decision imposed by the institutional environment. A limitation of institutional theory is that it tends to downplay the role of active agency and the possibility of organizational resistance to institutional pressures for change. The institutional theory perspective can be expanded by focusing on how individual self-interest motives can be transmitted into the inter-organizational field thereby influencing normative pressures for change. Invoking an institutional theory perspective to explain government accounting choice requires a consideration of how various organizations in the institutional environment determine the content of GAAP for governmental entities.

We argue that institutional theory is a very fruitful paradigm for governmental and not-for-profit accounting research because it considers how environmental influences and institutional and organizational pressures constrain governance accounting choice. In the government and not-for-profit sector, there are often constraints on the governance choices that public officials can make in the accounting arena and there can be

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lobby standards setting bodies.

institutional pressures to conform or resist conforming to professionally endorsed governance accounting and auditing practices. These influences or constraints can be political, regulatory, or legal in nature. In institutional governance theory, the increased degree of collective organization in the financial community and the concurrent professionalization of the government accounting community in the environment of government organizations are important factors to consider in efforts to explain government accounting choice and the nature and amount of auditing activities in the government and not-for-profit sector.

**Resource Dependency.** Institutional governance theory can be used in conjunction with the resource dependency perspective (Pfeffer and Salanick 1978; Pfeffer 1991) to allow the self-interest motives of bureaucrats to be considered while still allowing for institutional pressures to play a key role in organizational decision-making. Governmental and not-for-profit entities, like for-profit firms, require financial resources from their environment, and survival of the governmental entity depends on its ability to negotiate exchanges (transactions) with the environment (e.g. levying taxes, passing the budget, issuing bonds, etc.). Thus a major focus of elected officials is to ensure the continuation of financial resources to the government entity. Organizations that can provide resources to the government, such as the credit markets, can exercise power over governmental entities (Meyer and Scott 1983). This power can be used to dictate the use of certain professionally endorsed governance rules--such as GAAP--to ensure that accounting information is available which meets the information needs of the financial community in assessing an organization's financial performance.

Unlike agency theory, the resource dependency perspective does not take the acquisition of environmental resources as given. Instead of focusing on how scarce resources are allowed in an organization and how employees can be motivated to maximize resource allocation objectives, the resource dependency perspective focuses on problems associated with the acquisition of resources from the environment to gain a better understanding of the behavior of individuals within the organizations. The work of Mizuchi and Fein (1999, p. 657) suggests that pressures from external resource providers results in ‘coercive isomorphism’ and “is thus analogous to formulations of the resource dependency model, in which organizations are viewed as constrained by those on whom they depend for resources”. Even for a state government, the acquisition of financial resources can be problematic and uncertain, with resource providers becoming unreliable during periods of economic decline. In periods of fiscal stress, government officials focus on decisions that will ensure the continuation of needed financial resources. Governance decisions can be driven by the need to complete financial transactions with taxpayers, other levels of government, or the credit markets. In the words of Pfeffer and Salanick:

A good deal of organizational behavior, the actions taken by organizations, can be understood only by knowing something about the organization’s environment and the problems it (faces) for obtaining resources. What happens in an organization is not only a function of the organization, its structure, its leadership, its procedures, or its goals. What happens is also a consequence of the environment and the particular contingencies and constraints from that environment (1978, p. 3).

The resource dependency perspective emphasizes that it is through interaction with the environment that institutional values and rules - especially those endorsed by professional associations such as GAAP - are transmitted. Governments that must interact with the capital markets are more likely to be influenced by institutional pressures to adopt accounting governance rules that are endorsed by the financial community. In 1980, GAAP became the accounting governance rules that were endorsed by the bond rating community for governmental entities (Standard & Poor's 1980).

The resource dependency perspective also considers the fact that most organizations have numerous and frequently incompatible demands from a variety of external resource providers which often leads organizations to de-couple their operating activities from related structural elements to satisfy demands from a variety of resource providers (Meyer & Scott 1983, p. 204).

**De-coupling.** The governance structure of an organization is composed of elements, such as departments, positions, chains of authority, etc., which are linked by explicit goals and policies that make up a rational theory of organizational decision-making. However, conflicts over specific goals and policies for structural elements can and do lead to legitimacy problems for organizations. This is especially true for governments where the governance technology (such as accounting rules) prescribed by one level of authority is inconsistent with the requirements of another (Meyer and Scott 1983, pp. 204-205). Scott and Meyer write,

It is common in the United States for local (governments) to maintain a number of different sets of accounting books or reporting systems to relate their activities to local sovereigns, professional bodies, state governments, and the federal government (1983, p. 204).

De-coupling is a mechanism that allows individuals in organizations to act in good faith by allowing professionals the opportunity to make efficient governance decisions for the organization with little input from structural elements that may result in conflict. Organizations that embrace the goals of efficiency, ideally, would like to have close alignments between structural elements and related activities. Organizations that rely on a number of resource providers may develop incompatible structural elements resulting in conflict between the use of governance rules designed to provide legitimacy to various resource providers and efficiency criteria. To resolve such conflicts organizations may de-couple -- that is, separate elements of governance structure from related activities to improve the overall efficiency of the organization. De-coupling the GAAP accounting governance element from the political budgetary process and the day-to-day financial operating activities may allow individual bureaucrats more freedom to pursue their professional self-interest in the face of conflicting institutional pressures.

## **THE LINK BETWEEN THE AGENCY AND THE INSTITUTIONAL THEORY OF GOVERNANCE**

Oliver (1991, p. 151) identifies the critical link between the institutional governance theory and self-interest behavior by focusing on those situations where organizations do not passively respond to institutional pressures for change. Oliver argues that whether or not an organization's response to institutional pressure for change is passive compliance or active resistance depends on the nature and context of the pressures themselves (Oliver 1991, p. 146). Oliver employs self-interest arguments to reconcile the insights from institutional governance and resources dependency perspectives to explain organizational strategic responses to institutional pressures for change: acquiesce, compromise, avoid, defy, and manipulate.<sup>3</sup>

It is important to note that the self-interest arguments employed by Oliver relate to *political self-interest* rather than economic self-interest (Oliver 1991, p. 159). Oliver's work suggests that when internal political interests- which can be shaped by the organizational culture - strongly conflict with institutional value, norms, or innovations, organizations may opt to defy or manipulate institutional pressure for change. Oliver identifies two conditions under which organizations are likely to defy institutional pressures: (1) when the organization can compellingly demonstrate that their own

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<sup>3</sup> Other institutional theorists have also acknowledged that certain conditions can lead to failure to adopt or early rejection of professionally endorsed governance innovations. These writers do not explore the conditions underlying such resistance (see Rowan 1982, or Tolbert and Zucker 1983).



convictions or practices are rational, and (2) when the organization has no resource dependency on those who would judge or oppose them.

Oliver defines manipulation as purposeful and opportunistic attempt to co-opt, influence, or control institutional pressures and evaluations (1991, p. 157). An example of a co-optation tactic in a governmental accounting context would be the hiring of a CPA as the chief accounting bureaucrat when the organization has made a firm governance decision not to adopt GAAP. The purpose of such a move would be to neutralize institutional pressures and enhance legitimacy of the government accounting function.<sup>4</sup> Manipulation is the most active organizational response to resist institutional pressures for change; it occurs when organizations actively seek to alter, re-create, or redefine institutional norms and expectations. The strongest form of manipulation is when resistant organizations seek to control the source of social approval and legitimization (Oliver 1991, p. 160). In the governmental accounting context, control of institutional pressure could be accomplished through the appointment process to the GASB, the Government Accounting and Auditing Committee of the AICPA, or active participation in the GASB's due process procedure that results in the establishment of Generally Accepted Accounting Principles for state and local government.

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<sup>4</sup> The case study of the decision of the State of Delaware not to adopt GAAP reported in Carpenter and Feroz (2001, p. 585-588) is an excellent example of an organizational strategy to manipulate institutional pressures to adopt GAAP for external financial reporting.

## **CONDITIONS FOR THE APPLICABILITY OF THE INSTITUTIONAL THEORY OF GOVERNANCE**

Carpenter and Feroz (2001, p. 569) argue that a state's decision to adopt GAAP can be influenced at the individual level through the key decision-maker's norms, values and unconscious conformity to traditions (ideology, motivation, competence, professionalism); at the organizational level by shared belief systems, power and politics (nature of political competition, professionalism, decentralization); and at the organizational governance level through regulatory pressures, public pressures, and the accounting professional's norms and values (accounting institutional environment).

Mezias (1990, pp. 434-436) identifies three institutional preconditions that must be present if institutional theory is to be useful in understanding governance accounting choice. First, there should be a variety of forces that are at work at the inter-organizational field in which the decision is made for the endorsement of institutional rules. This suggests that leadership efforts by professional associations and individual organizations such as, the AGA, GFOA, AICPA, NASACT, etc. will be aimed at establishing their accounting practices as legitimate and encoding them in institutional rules. The work of Greenwood, Suddaby and Hinings (2002, p. 73) further suggests that while professional associations are indeed important regulatory agents, their role and influence may ebb and flow within a broader organizational field. The involvement of several organizations in the establishment of accounting standards in the corporate sector has been well documented in the literature (Watts and Zimmerman 1978). In the

government and not-for-profit sector, the phenomenon of encoding of institutional rules with prevailing practice has also been observed.<sup>5</sup>

Second, governmental accounting provide a rich framework to explore the boundaries of institutional governance theory because of the increasing degree of collective organization in the institutional environment in which governmental GAAP is established (for elaboration on the formation and operation of the Governmental Accounting Standards Board (GASB), see Bean 1984, p. 8; Feroz 1986). The New York City crisis in 1975 was an important impetus for collective organization in the institutional environment because of the threat of federal government intervention in the establishment of governmental and not-for-profit accounting principles (SEC 1977). The public accounting profession was threatened because it was feared that SEC establishment of GAAP for governmental and not-for-profit entities would create conditions that would de-legitimize rights to establishing accounting standards in the private sector of the economy. The threat of federal involvement was important in changing the institutional environment because it forced the public accounting profession to be an active participant in the establishment of accounting principles for governmental and not-for-profit entities.<sup>6</sup>

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<sup>5</sup> Indeed, this is what happened in early efforts to develop institutional rules in governmental accounting. See the next section for detail on the history associated with the institutional development of accounting principles and auditing standards.

<sup>6</sup> In 1976, the Chairman of the Financial Accounting Standards Board (FASB) indicated that the FASB did not intend to address governmental accounting issues in the foreseeable future. Also in 1976, the Chief Executive of the then Arthur Andersen & Company testified to the Senate Committee on Banking, Housing,

The collective organization of the professional accounting community is needed to reinforce and constrain the definitions of legitimacy that arise as a result of complex relational networks (Meyer and Rowan 1977; DiMaggio and Powell 1983; Mezias 1990). There was ineffective collective organization of the government accounting professional community preceding the New York City crisis which is evidenced by the fact that the financial reporting practices for state and local governments was not generally accepted (see Carpenter and Feroz 1992 for details). The establishment and use of governmental GAAP is also an example of fragmented centralization which occurs when the determination of the institutionalized rules are centralized (with the GASB) but the authority for enforcement is dispersed to several agencies (cognizant agency under the Single Audit Act of 1984, state agencies for local governments, bond rating agencies, government auditors, and/or CPAs).

Third, an institutional analysis of government accounting choice should include an explicit focus on the role of accounting professionals and the professionalization of the accounting function. Both government accountants and CPAs had important effects on the passage of the Single Audit Act of 1984 and the establishment the standards setting process for governmental GAAP that culminated with the formation of the GASB in 1984. The history of the government accounting institutional environment immediately prior to 1984 is important in understanding the outcomes that follow the enactment of the

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and Urban Affairs that the accounting systems of many state and local units of government were deficient (Hefferon 1977 p. 45).

Single Audit Act and accounting standards promulgated by the GASB. There was a clear change in the institutional environment following these events of 1984 that can be used to predict state governance choice behavior in financial reporting practices (Banker, Cooper and Potter 1992, p. 502).

**Institutional Governance Context: The Need For Historical Analysis.** The work of Merino, Koch, and MacRitchie (1987) suggests that a thorough review of historical factors that have influenced the development of governmental and not-for-profit accounting must be performed to identify the appropriate temporal sequence of events that could have had important effects on government accounting choice.

A complete historical review of the development of accounting principles for governmental and not-for-profit entities requires an analysis of events dating back to 1900. Although, this is beyond the scope of our paper, we begin with the 1975 financial crisis of the City of New York that forced the active involvement of the public accounting profession in the establishment of GAAP for governmental and not-for-profit entities. In that year, significant institutional pressure from the financial community for improvement in state and local governmental accounting rules was created. In 1975, the state of Colorado became the first in the USA to use accrual based accounting principles for external financial reporting (SEC 1977; Carpenter and Feroz 1990).

In 1978, Maryland became the second state to adopt modified accrual accounting practices. In 1979, GAAP for state and local governments were revised establishing

specific fund types, requiring new financial statement formats, and requiring that external financial reports satisfy GAAP, which requires the use of modified accrual accounting methods, and legal provisions which may require the use of cash-basis accounting methods. By 1990, thirty (30) states had adopted or were in the process of adopting GAAP for external reporting, while 20 states continued to resist institutional pressures to adopt GAAP (Council of State Governments 1990). Currently, only two states are not reporting in accordance with GAAP.

In investigating the change in external financial reporting practices to GAAP that occurred in the aftermath of the 1975 crisis in the municipal credit market, it is important to look at the pattern of GAAP use that resulted after the issuance of the first statement by the new NCGA in 1979 and of the 1980 *Standard and Poor's Perspective Statement* (S&P, 1980). The NCGA was replaced by the GASB in 1984 after significant institutional pressures led to the demise of NCGA. The Single Audit Act was also passed in 1984 which was an important event year in the institutional environment for governmental and not-for-profit accounting standards setting. The implications of these events and factors for governmental accounting are discussed more fully in the next section.

## **RESEARCH HYPOTHESES RELATED TO GOVERNMENT ACCOUNTING CHOICE**

**Applied economics models.** Prior research has identified important economic factors that affect the governmental financial accounting choice (Baber 1983; Baber and Sen

1984; Ingram 1984; Evans and Patton 1983 and 1987; Marks and Raman 1987; Carpenter 1991). These studies examined credit-market induced incentives (Baber 1983; Ingram 1984) to voluntarily disclose GAAP information. Ingram and DeJong (1987) examined voter monitoring demands and they found mixed results regarding the impact of voters on GAAP reporting. Finally, incentives of governmental accounting bureaucrats for an outward show of quality of financial reporting to signal quality management have been found to be significant to GAAP disclosure (Evans and Patton, 1983 and 1987). Proxies of these variables are included to test the traditional economic relationships from prior accounting studies.

**Hypothesis 1:** Governments that have *long term debt* have incentives to adopt GAAP because of penalties that may be imposed in the form of higher interest costs when accounting and financial reporting are substandard. Thus they will be more likely to conform to GAAP (a test of market-induced incentives).

**Hypothesis 2:** Government entity *size* is significantly positively related to incentives to produce monitoring information and more likely to conform to GAAP (a test of voter monitoring demands).

**Hypothesis 3:** *Signaling incentives* of government officials result in state governments being more likely to conform to GAAP (a test of the economic self-interest motives of bureaucrats).

**Hypothesis 4:** *Political competition* is positively related to adoption of GAAP because of increased incentives of elected officials to conform to GAAP (a test of the economic self-interest of political participants).

In the section below, we develop an empirical institutional governance theory model to explain the noise in the accounting literature concerning the significance of political, signaling, credit market, and size variables on the incentives of governments to use professionally endorsed accounting practices. Cheng (1994) and Carpenter and Feroz (2001) suggest government accounting models based on agency theory do not capture institutional and organizational pressures that constrain accounting choice in the

governmental and not-for-profit sector. Cheng (1994) develops a politico-economic process model to examine financial reporting choice in terms of incentives and resources of individuals. Carpenter and Feroz (2001) employ a longitudinal cross-case study methodology and provide a rich historical context for identifying these incentives within the complex government environment. Our study extends the work of Cheng (1994) and Carpenter and Feroz (2001) and is the first in governmental and not-for-profit accounting to empirically examine the institutional theory of governance. We argue that institutional theory of governance can complement agency theory in explaining accounting choice in the government and not-for-profit sector through its focus on causal mechanisms leading to organizational changes. Institutional governance theory is based on preconscious understandings that organizational actors share which may result in bureaucrats being unable to act in their own self-interest. In particular, we argue that non-economic factors may determine organizational values, politics, and institutional norms.

**The institutional governance model.** Some state governments' freedom to change accounting practices for external financial reporting may be constrained by constitutional or charter accounting requirements which have the effect of eliminating some alternative accounting practices such as accrual accounting. At the time when most state government constitutions were drafted, accrual accounting was not considered an appropriate accounting practice for governments. The prevailing wisdom was that government budgets and accounts should be balanced on a cash basis. Thus, investigating state constitutional requirements that dictate accounting practices provides an important opportunity to investigate the concept of organizational imprinting at founding (Stinchcombe 1965, pp. 153-164; Kimberly 1987; Scott 1987, p. 505; Mezas



1990, p. 441). Mezas states that the distinctive feature of imprinting is the virtual elimination of alternatives not considered as appropriate at the time of founding (Mezas 1990, p. 441). Meyer and Rowan (1977) extend the notion to mid-life organizational imprinting to explain the observation that when a practice is first adopted it will be maintained in the future. That is, the adopted practice becomes part of the organizational culture or value system that dictates the appropriate way to do things in the organization.

Passage of state statutes that prescribe government accounting practices also may be viewed as a form of mid-life imprinting. Hence, an important question to be addressed in governmental accounting research is what impact does organizational imprinting have on the diffusion of GAAP as an innovation in the not-for-profit sector and whether or not organizational imprinting at founding has the same effect as mid-life imprinting on the acceptance of GAAP as an organizational governance innovation. Organizational imprinting may result in government accounting bureaucrats developing organizational values that lead to the maintenance of or rejection of the use of GAAP for external financial reporting.<sup>7</sup> Thus, organizational imprinting has the potential to define the *political self-interest motives* of accounting bureaucrats which can lead to organizational resistance to the adoption of GAAP for external financial reporting. This discussion leads to the following research hypothesis:

**Hypothesis 5:** Governments that have statutes requiring *cash-basis accounting* will be less likely to conform to GAAP (a test of imprinting).

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<sup>7</sup> For example, New Mexico reversed its decision to use GAAP for external financial reporting.

The work of DiMaggio and Powell (1983) suggests that those organizations that face the most uncertainty will be more likely to respond to institutional pressures to conform to normatively sanctioned governance practices, such as GAAP, to demonstrate operating efficiency. Governments that have highly cyclical economies face more uncertainty in their financial operating environments, and hence, would be more likely to respond to mimetic pressures toward isomorphism during periods of recession. Hefferon (1997) commented on the financial reporting practices of New York prior to the 1975 fiscal crisis as follows:

Between 1971 and 1975, the city borrowed \$1.8 billion this way (issuing short-term notes), continually rolling over its notes in ever-increasing amounts. Its 1976 budget projected a borrowing of \$697 million for that year, and presumably without the recession and the tightening of the municipal credit market in 1975, New York City would have continued to borrow by these methods, further inflating its debt picture and setting the stage for an even more dramatic crisis when the bell tolled later (1997, p. 43).

We posit that governments are more likely to adopt GAAP if they have experienced unstable fiscal conditions and a pattern of short-term borrowing to cover costs. This dependence on the debt market is hypothesized to influence adoption of GAAP.

**Hypothesis 6:** Governments that frequently issued *short-term debt* are more likely to adopt GAAP (a test of resource dependency).

States vary in their relative abilities to raise tax revenues to support public services. Published measures of state economic performance and the resulting ability to raise revenues are provided by the U.S. Advisory Commission on Intergovernmental Relations (U.S. ACIR 1982, 1986, 1988). The most widely accepted measures are fiscal capacity, or the amount of revenue that a state would raise if it employed national average tax rates, and fiscal effort, a ratio of its actual revenues to its estimated capacity. Fiscal capacity

and fiscal effort are complementary measures because capacity reflects a state's revenue base while effort indicates the overall tax or revenue burden placed on that base. Frequent interaction with and dependence on taxpayers are hypothesized to increase the likelihood of GAAP adoption.

**Hypothesis 7:** Governments that experience *fiscal stress* as measured by a high ratio of tax (fiscal) effort to tax (fiscal) capacity are more likely to adopt GAAP (a test of resource dependency).

Beginning in 1975, the public accounting profession became an active participant in the institutional environment that establishes accounting rules for government. The role of professional accounting associations in the establishment of the GASB in 1984 and in the enactment of the Single Audit Act of 1984 suggests that these organizations are important actors in the institutional environment. The increased degree of collective organization in the financial community and the concurrent professionalization of the government accounting community created a constant institutional pressure for governments to adopt GAAP. Meyer and Rowan's (1977) work suggests that the idea of GAAP as a symbol of fiscal management is generated and diffused through such professional associations. Active professional governmental and not-for-profit accounting associations are Association of Government Accountants (AGA) the Governmental Finance Officers Association (GFOA) and the national and state institutes of AICPA.

**Hypothesis 8:** Governments in states with a high concentration of professional accounting association memberships are more likely to adopt GAAP (a test of mimetic pressure).

The works of DiMaggio and Powell (1983) and Scott (1987) hypothesize that the diffusion of normative practices may be affected by turnover among top managers. If

turnover occurs in top accounting positions, GAAP diffusion may be facilitated because of the increased level of professionalization in the government accounting community and management exposure to a common cognitive base for accountants produced at colleges and universities (Scott, 1987). Moreover, new governors often put together Blue Ribbon panels of experts to help solve state government management problems (Carpenter and Feroz, 1990). If these panels have CPAs as members, recommendations for the government to adopt GAAP are more likely to be made.

**Hypothesis 9:** Governments experiencing high *turnover in top accounting/auditing* positions are more likely to adopt GAAP (a test of normative pressure and diffusion).

**Hypothesis 10:** States that experience high *turnover in the Governorship* are more likely to adopt GAAP (a test of normative pressure and diffusion).

If governments adopt GAAP to achieve legitimacy from the financial community and public, they will also need to have their compliance with GAAP verified by an independent audit performed in accordance with generally accepted auditing standards (GAGAAS).

**Hypothesis 11:** Governments that adopt GAAP for external financial reporting will have a shift in audit resources to financial/compliance auditing conducted by an independent public accounting firm (a test of legitimacy).

**Early vs. Late Adopters.** Another important issue to address is: why the diffusion of GAAP, as an organizational governance innovation, has had varying rates of acceptance. The existing institutional governance theory literature has explored organizational resistance to institutional pressure (Oliver, 1991), but with limited success.

The empirical research in institutional theory has generally found that early adopters of organizational governance innovations are strongly predicted by technical or political attributes of adopters but that later diffusion is poorly predicted by technical or political measures (DiMaggio 1988, p. 6). Tolbert and Zucker (1983), for example, found that early adopters of civil service reforms could be predicted by city characteristics. Tolbert and Zucker argued that early adopters were acting in their own self-interest while late adopters were argued to be acting in response to the institutionalized legitimacy of civil service systems. They found that civil service reforms were adopted by more and more cities as time passed by regardless of their political or demographic characteristics. The works of Glynn and Abzug (2002, p. 277); Palmer et al (1993, p. 122) and Carpenter and Feroz (1992) demonstrate that organizations often adopt governance practices to increase perceptions of legitimacy and that such symbolic choices are closely aligned to those of other organizations within the organization's institutional field.

Institutional governance theory thus predicts the significance of variables which proxy for the self-interest motives of bureaucrats may give way to increasing significance of institutional factors in later time periods. We argue that an integration of agency theory and institutional governance theory may provide important insights into conditions that retard the diffusion of new organizational innovations in governance practices such as GAAP. To test this hypothesis, we divide our sample into early and late adopters. Those governmental entities that used GAAP prior to 1984 (passage of the Single Audit Act) may be viewed as early adopters of GAAP while those who use GAAP for external reporting after 1984 are viewed as late adopters of GAAP.

**Hypothesis 12:** Governments that are *late adopters* of GAAP are less likely to be positively associated with agency theory variables (a relative test of agency vs. institutional governance theories).

## **RESEARCH DESIGN AND HYPOTHESES TESTS**

**Data Sources.** In order to test the hypotheses, data are collected for the population of all 50 U.S. state governments. All financial and audit data are obtained from the financial reports of the states and from the U.S. Bureau of the Census. Other variable data are collected from state professional societies and government documents. Independent variables were selected for years just prior to the GAAP adoption date for each state. A description of the variables used in our study is shown in Table 1 and explained in the next section.

**Dependent Variable.** The dependent variable provides a contrast between maintenance of non-GAAP financial reporting and adoption of GAAP based reporting at several key event years. The crucial institutional governance year of GAAP adoption was defined as 1984. The dependent variable, GAAPCODE, is coded zero if the state maintained non-GAAP financial reporting during the fiscal year, and is coded one if the state adopted GAAP based reporting during the year in question. Each state was classified as GAAP or non-GAAP using a) data from a 1986 report published by the National Association of State Auditors, Comptrollers, and Treasurers (NASACT), and b) statewide financial reports for the fiscal year ending 1984. States that only produced financial reports on a departmental basis were coded non-GAAP states. Figure 1 provides information on the year of GAAP adoption for all 50 states.

**Applied Economics-Agency Based Independent Variables.** Hypotheses 1 through 4 predict that governments that adopt GAAP-based financial reporting are likely to be positively associated with self-interest motives of government bureaucrats. This effect was tested by inclusion of variables from applied economic theories. Variables selected from prior accounting studies include long-term debt per capita to capture the contracting relationship with the bond market (GLTDEBT), the logarithm of population as a proxy for size (LOGPOP), certification of the chief financial officer (CPACODE) as a proxy of signaling incentives of the government bureaucrats, and percentage turnout for the last gubernatorial election (GOVVOTE) as a measure of political competition in the state.

**Institutional Governance Theory Based Independent Variables.** Hypotheses 5-11 predict that governments that adopt GAAP based financial reporting are influenced by institutional pressures from their environment. Hypothesis 5 predicts that states with constitutions requiring cash-basis accounting will have adopted this practice as part of the organizational culture or value system and will be less likely to conform to GAAP prior to 1984. This effect is tested with a dummy variable, CASH, indicating whether the observation represents a state with statutes requiring cash-basis accounting.

Hypothesis 6 and 7 are derived from our previous discussion of the institutional governance effects of resource dependency on financial reporting decisions. Two measures of resource dependency are used to test for the effects of frequent interaction with resource providers and the institutional pressures to conform to normatively

sanctioned governance practices such as GAAP adoption, short-term debt/capita (SRDEBT) to capture the dependence on the credit markets, and taxing effort versus taxing capacity (FSTRESS) to capture the dependence on the taxpayers. The implicit assumption is that the greater the proportion of short-term debt, the more frequent the interaction with resource providers and the more likely the adoption of GAAP prior to 1984. Similarly, fiscal stress as measured by a high ratio of taxing effort to taxing capacity, suggests frequent interaction with and dependence on tax payers and an increased likelihood of adopting GAAP.

Hypothesis 8 tests institutional governance effects of mimetic pressure exerted by professional accounting associations for GAAP adoption as a symbol of sound financial management practices. We selected the number of GFOA members per capita (DEFGFOA) as the operational measure of this important institutional factor.

Hypotheses 9 and 10 test the institutional effect of turnover as a source of normative pressures to conform to prevailing practices. The top financial governance management team was operationalized as the treasurer (TURNTRES) and state auditor (TURNAUDI). The top of the pyramid (governance team) was operationalized as the governor (TURNGOV). For each key governance position, turnover was measured as the number of times each office changed during the twenty (20) year period from 1964-1984. A composite turnover measure that combines the turnover rates of all three top governance positions (TURNOVER) was also used in the analyses.



Hypothesis 11 tests the impact of institutional financial legitimacy as measured by an independent audit on GAAP adoption. Institutional financial legitimacy was operationalized with a dummy variable, CPAUSED, to indicate if a CPA was used to audit state agencies. Summary descriptive statistics are reported in Table 2.

**Regression Model Specification.** The following functional specification is used to test hypotheses H1-H4 (the applied economics model):

$$GAAP = \alpha + \beta_1GLTDEBT + \beta_2LOGPOP + \beta_3CPACODE + \beta_4GOVVOTE + \varepsilon$$

where, GAAP takes the values of 0 or 1 representing adoption of generally accepted accounting practices (GAAP) in their annual financial statements, GLTDEBT is the amount of long-term debt/population, LOGPOP is the log of total population, CPACODE is a dummy variable indicating licensing requirements for the state auditor or state comptroller, and GOVVOTE captures the mean percentage of voting age population voting in the state's general election.

A second regression model is used to test hypotheses H5-H10 (the institutional governance theory model):

$$GAAP = \alpha + \beta_1CASH + \beta_2SRDEBT + \beta_3FSTRESS + \beta_4GFOA + \beta_5TURNOVER + \beta_6CPAUSED + \varepsilon$$

where, GAAP takes the values of 0 or 1 representing adoption of generally accepted accounting principles (GAAP) in their annual financial statements, CASH is a dummy variable for state statutes mandating cash-basis of accounting, SRDEBT is the amount of short-term debt/population, FSTRESS is the amount of taxing effort to taxing capacity,

GFOA is the number of GFOA members in the state/population, TURNOVER is a measure of the number of times the three top governance positions (governor, auditor, and treasurer) have turned over during a twenty year period from 1964-1984, and CPAUSED is a dummy variable for use of an independent external auditor (CPA).

A third functional specification tests a full model (incorporating both agency and institutional governance variables):

$$GAAP = \alpha + \beta_1GLTDEBT + \beta_2LOGPOP + \beta_3CPACODE + \beta_4GOVVOTE + \beta_5CASH + \beta_6SRDEBT + \beta_7FSTRESS + \beta_8GFOA + \beta_9TURNOVER + \beta_{10}CPAUSED + \varepsilon$$

where the parameters are as specified above.

## **MULTIVARIATE ANALYSES**

Table 3 reports the correlations among the independent variables. As expected the various governance turnover measures were positively correlated. As a result, only the composite measure was used in the regression analyses. State size as measured by the log of the population is significantly correlated to both voter turnout and governance management turnover. However, variance inflation factors (VIFs) indicate that multicollinearity is not a problem in these analyses. No VIF was over 10 and the average of the VIFs was between 1 and 2 for all analyses.

We used the maximum likelihood LOGIT estimation for the models in our analyses. LOGIT was selected because it is an efficient estimation technique for categorical variables. The assumption implicit in using such a technique for time series observations

related to a population of 50 states is that the probability of an event, in this case adoption of GAAP based financial reporting is invariant with respect to temporal distinctions not specified in the model.

Table 4 reports the logistic regression results.<sup>8</sup> Panel A of Table 4 presents the results of the logistic regressions including only those independent variables suggested by agency theory. The agency theory model as a whole is a significant predictor of the adoption of GAAP. The chi-square statistic is significant ( $p < .05$ ); however the Pseudo  $R^2$ , similar to the  $R^2$  statistic for OLS regressions, is a modest .24. Panel B of Table 4 reports results for the institutional governance theory model. The institutional governance theory model performed better than the agency model. The chi-square statistic is significant ( $p < .001$ ) and the  $R^2$  is .48.

Next, the combined full model was estimated and results are reported in Table 5. The chi-square statistic is significant ( $p < .001$ ) in this model. Combining the institutional governance variables with the agency variables significantly increases the explanatory power of the model as reflected in the increase in the R-value to .62.

The comparison of the models, especially the significant difference in the chi-square statistics suggests that a model including only the agency theory variables is likely to be

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<sup>8</sup> We also ran the regressions using OLS. The results were substantially similar and are not reported. Adjusted  $R^2$ s were .33 for the agency theory model and .48 for the combined model. Outliers identified by OLS were dropped and analyses rerun; results were substantially similar for all variables.

under-specified. First, the model omits institutional governance variables that have a significant effect on the dependent variable. Second, the omission of these variables ignores important longitudinal variation in the institutional governance environment.<sup>9</sup>

The results suggest agency theory models offer key information about accounting and financial reporting choice in the governmental institutional context. Based on a review of the recent governmental accounting literature, four primary factors that have been repeatedly considered as explanatory variables were included in our models: voter monitoring demands, political competition, credit market incentives, and signaling incentives. Two of the key variables from the agency theory based literature held throughout the study. First, larger governments were systematically more likely to adopt GAAP, the variable LOGPOP was significant in both the agency theory model and the full model. Second, political competition, as measured by the voter turnout as a percentage of voting age for the years prior to GAAP adoption was significant in the agency theory model (Table 4) but not in the full model (Table 5). Also, governments seemed to adopt GAAP in order to secure debt financing, as evidenced by the significance of the measure for long-term debt (GLTDEBT) in the agency theory model. However, this significance did not hold in the full model. Neither model supported the

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<sup>9</sup> We conducted additional tests to check the robustness of the regression results. We reran the logistic regression omitting New Mexico and Delaware since they did not convert to GAAP during the time period studied. Our inferences are unaffected by removing these states. We also ran the models with a dependent variable, GAAPRANK, which ranked the states by order of their relative adoption of GAAP (1st, 2nd, 3rd...). Results were substantially the same.

signaling incentives hypothesis. Our measure, based on the requirement that the state comptroller or state auditor hold a CPA certificate, was not significant in both models.

The agency model is significantly improved by adding the variables suggested by institutional governance theory. Our results suggest that governments with cash accounting mandates are less likely to adopt GAAP for financial reporting. This is consistent with the institutional imprinting hypothesis. The institutional governance hypotheses on resource dependency were also supported. Both measures of fiscal stress, short-term debt and taxing effort/taxing capacity, were significant in the full model. In addition, turnover of top governance management was significantly related to GAAP adoption. Additional models were analyzed (not shown here) which tested the separate components of top governance management turnover: governor turnover and accounting/auditing turnover. In these models, governor turnover was not significant, suggesting that the top accounting/auditing officials were the most important players for GAAP adoption. Our results on the relationship of external public accounting firms as auditors for GAAP reporting were contrary to the institutional governance literature on legitimacy from external community.

### **ADDITIONAL DATA ANALYSES**

Additional analyses were performed on two partitions of the data. We subdivided the total population of states into early and late adopters, to test the effect of the agency theory and institutional governance variables. The results presented in Table 6 suggest that agency theory variables were more important to decisions to adopt GAAP prior to 1984, and

institutional governance variables, particularly the influence from the accounting profession were significant in later adoptions of GAAP.

The analyses of early versus later adopters suggests some of the noise in prior governmental accounting studies may be dependent on the sampling years. Early studies that found significant relationships between GAAP and agency variables may hold only for early adopters. The agency variables, however, do not explain decisions to adopt GAAP after the passage of the Single Audit Act in 1984.

#### **SUMMARY AND IMPLICATIONS FOR NOT-FOR-PROFIT GOVERNANCE**

In this paper, we develop and empirically test an institutional governance theory for explaining the decisions by the population of 50 US state governments to adopt GAAP for external financial reporting. We argue that institutional governance theory variables are important explanatory variables that should be incorporated into accounting choice models. Our empirical results suggest that models that do not include institutional governance variables may be under-specified. Our study employs various conceptual models of institutional governance such as, institutional theory,<sup>10</sup> resource dependency, and agency theory<sup>11</sup> to provide a more comprehensive framework for evaluation of the

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<sup>10</sup> For more discussion of institutional theory see Mezas (1990, pp. 431-457); Meyer and Rowan (1977, pp. 310-363); Meyer and Scott (1983, pp. 199-215); DiMaggio and Powell (1983, pp. 147-160); and Zucker (1987, pp. 443-464).

<sup>11</sup> For more discussion of public sector agency theory see Jensen and Meckling (1976, pp. 305-360) and Wallace (1987, pp. 51-70).

evidence and to develop recommendations for future research. Although our variables were carefully selected from the agency and institutional theory literatures, there could be alternative model specifications under a different set of assumptions (such as frontier estimation techniques) or other variable measures that could lead to a different set of results. However, given the assumptions of our model and the appropriateness of our operational measures, the results appear to be stable.

Extant governmental and non-profit accounting choice literature is based on agency theory that emphasizes the economic self-interest motives of bureaucrats to explain a government's choice of accounting practices. A basic assumption underlying these works is that management incentives are a primary determinant of accounting choice in the government and not-for-profit sector. Researchers normally defined these economic incentives as reduced net interest costs, signaling to the job market, and enhancing the chances of reelection in a highly competitive political environment.

The assumption that economic self-interest motives drive governmental and not-for-profit accounting policy choice is not necessarily inconsistent with the notion that self-interest motives may be determined by organizational, political, and institutional factors. Institutional governance theory is important in explaining accounting choice in organizations where self-interest maximizing actors cannot exert effective influence over the choice of accounting practices because of their relative power positions in their organizations. We argue that in the governmental and not-for-profit sector where institutional environment and statutes often dictate the choice of accounting methods,

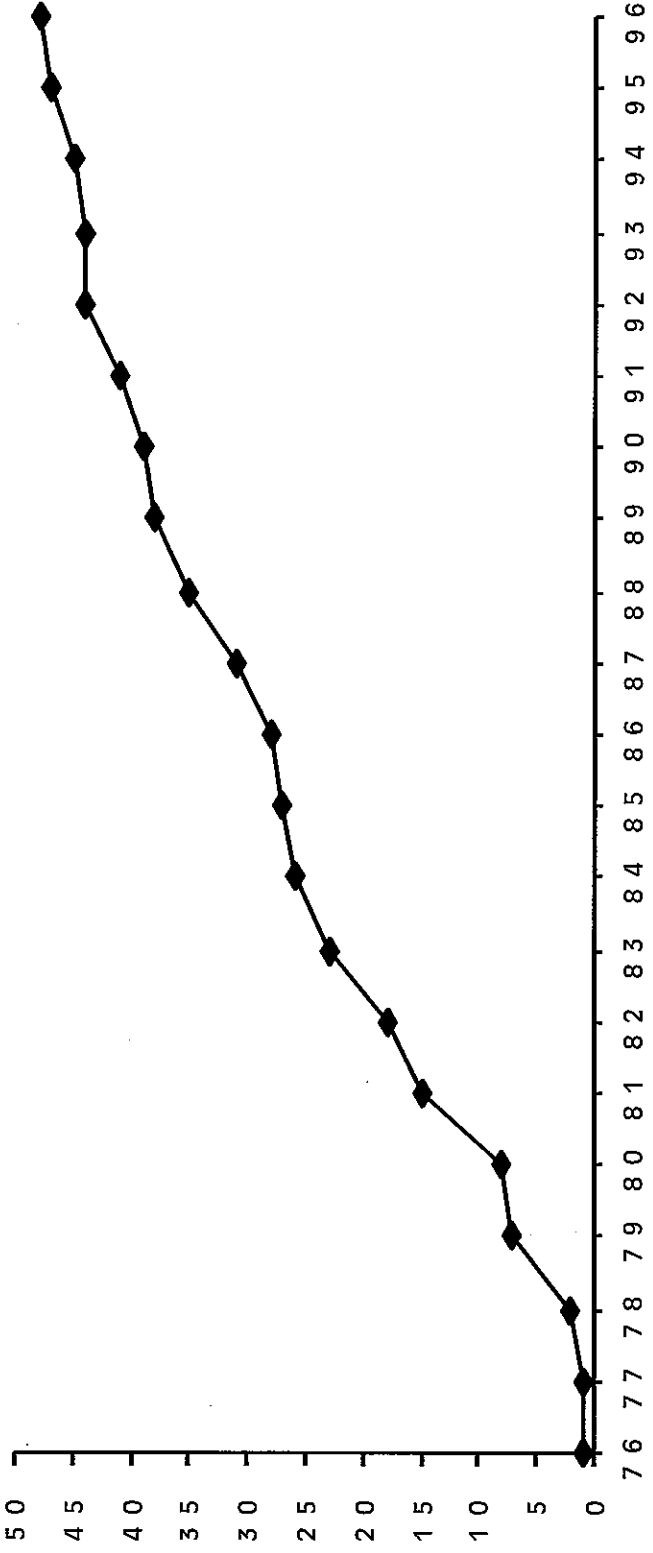
interest-maximizing accounting bureaucrats may not have the political influence or organizational clout (power) necessary to change the accounting practices of governmental entities. Therefore, it may not always be in their professional best interest to push for GAAP adoption within their organizations.

At present, theoretical accomplishments of the institutional theory have been limited in scope to the diffusion and reproduction of successful institutional forms and governance practices (Cornforth and Edwards, 1999). Within the specific context of government and not-for-profit accounting, a rich institutional setting exists to further the theoretical understanding of how the process of institutionalization occurs and under what conditions different paths of institutionalization will take place. In other words, government and not-for-profit accounting sector provides a rich institutional context for helping institutional theorists in identifying how the process of institutionalization or adaptation of professionally endorsed governance innovations occurs. We have just begun to exploit this comparative advantage by taking the first steps in contributing to the advancement of an empirical institutional governance theory of accounting choice.<sup>12</sup> We believe, cross-state longitudinal analyses of the population of 50 states as we have done here, and cross-national (cultural) empirical analysis as it has been suggested in the recent corporate governance literature (Bushman and Smith, 2001 and Sloan, 2001) are fruitful directions for the institutional governance theory to pursue.





FIGURE 1: GAAP ADOPTION BY YEAR 1975-1996



**TABLE 1: VARIABLE DESCRIPTIONS**

**GAAP adoption index**

GAAPCODE      Dummy variable indicating GAAP compliance;  
GAAP = 1; no GAAP = 0

**Economic Agency variables**

GLTDEBT      Long-term debt deflated by population for year t -1

LOGPOP      Log of population for year t-1

CPACODE      Dummy variable indicating state auditor or state comptroller must  
be CPA; CPA=1, 0 otherwise

GOVVOTE      Mean % of voting age population voting in general gubernatorial  
election

**Institutional Governance variables**

CASH      state statutes mandating cash-based accounting;  
Cash statutes = 1, 0 otherwise

SRDEBT      short-term debt deflated by population for year t-1

FSTRESS      fiscal stress measured as taxing effort/taxing capacity

GFOA      GFOA members deflated by population or year t-1

TURNACCT      Number of times state auditor and treasurer turned over during the  
twenty year period from 1964-1984

TURNGOV      Number of times governor turned over during the twenty year  
period from 1964-1984

TURNOVER      Number of times the three top governance management positions  
(governor, auditor, and treasurer) turned over during the twenty  
year period from 1964-1984

CPAUSED      CPA used to audit state agencies; 1 if CPA used, 0 otherwise

**TABLE 2: DESCRIPTIVE STATISTICS**

<u>Variables</u>	<u>Number</u>	<u>Mean</u>	<u>Standard Deviation</u>	<u>Minimum</u>	<u>Maximum</u>
GLTDEBT	50	799.44	683.99	36.67	3017.00
LOGPOP	50	14.85	1.02	12.90	16.98
CPACODE	50	.30	.46	0	1.00
GOVVOTE	50	45.29	9.49	23.30	67.30
CASH	50	.62	.49	0	1.00
SRDEBT	50	8.78	18.46	0	96.29
FSTRESS	50	.99	.29	.39	1.98
GFOA	50	47.57	27.40	8.72	164.24
TURNGOV	50	4.44	1.29	2.00	7.00
TURNACCT	50	4.28	2.05	.5	10.00
TURNOVER	50	13.00	4.37	5.00	26.00
CPAUSE	50	.66	.48	0	1.00

TABLE 3: CORRELATIONS AMONG THE INDEPENDENT VARIABLES

	GOVVOTE	GLTDEBT	LOGPOP	CPACODE	SRDEBT	CASH	CPAUSED	FSTRESS	TURNGOV	TURNACCT	TURNOVER	GFOA
GOVVOTE	1.00											
GLTDEBT	.17	1.00										
LOGPOP	-.48***	-.25*	1.00									
CPACODE	.06	-.18	-.11	1.00								
SRDEBT	.04	.29**	.01	.12	1.00							
CASH	-.04	.04	-.11	-.21	.04	1.00						
CPAUSED	.22	.10	-.21	.19	-.10	.13	1.00					
FSTRESS	-.21	.14	.19	-.03	-.08	.15	.06	1.00				
TURNGOV	-.04	.10	-.16	.13	.03	-.01	-.18	-.01	1.00			
TURNACCT	.26*	.10	-.25*	.01	.04	.05	.22	-.11	.01	1.00		
TURNOVER	.24*	.11	-.30**	.04	.01	.06	.17	-.09	.34**	.92***	1.00	
GFOA	.15	-.01	-.16	.18	-.10	-.26*	.03	-.37***	-.03	-.19	-.21	1.00

\* significant at .10  
 \*\* significant at .05  
 \*\*\* significant at .01

**TABLE 4: LOGISTIC REGRESSION RESULTS**

**PANEL A: AGENCY THEORY MODEL**

$$GAAPCODE = a + b \text{ GLTDEBT} + b \text{ LOGPOP} + b \text{ CPACODE} + b \text{ GOVVOTE} + e$$

Independent Variable	Expected Sign	Estimated Coefficient	Coefficient chi-square	Probability
INTERCEPT		- 24.72	9.05	.0026
GLTDEBT	+	.001	3.30	.0691
LOGPOP	+	1.35	8.43	.0037
CPACODE	+	.98	1.77	.1822
GOVVOTE	+	.08	4.28	.0386

Model Summary Statistics

Number of Observations	50
-2 Log Likelihood	54.657
Chi-Square for Model (4 df)	12.5
p-value	.0140
Concordant Pairs	80.7%
Psuedo R <sup>2</sup>	.24

**PANEL B: INSTITUTIONAL GOVERNANCE THEORY MODEL**

$$GAAPCODE = a + b \text{ CASH} + b \text{ SRDEBT} + b \text{ FSTRESS} + b \text{ GFOA} + b \text{ TURNOVER} + b \text{ CPAUSED} + e$$

Independent Variable	Expected Sign	Estimated Coefficient	Coefficient chi-square	Probability
INTERCEPT		- 3.24	.7846	.3757
CASH	-	-4.2064	10.9077	.0010
SRDEBT	+	.1498	3.7288	.0535
FSTRESS	+	1.8446	.8719	.3504
GFOA	+	.0338	1.6444	.1997
TURNOVER	+	.2608	2.7495	.0973
CPAUSED	-	-1.3557	1.8247	.1768

Model Summary Statistics

Number of Observations	50
-2 Log Likelihood	35.751
Chi-Square for Model (6 df)	21.550
p-value	.0015
Concordant Pairs	93.0%
Psuedo R <sup>2</sup>	.48

**TABLE 5: LOGISTIC REGRESSION RESULTS (FULL MODEL)**

$$\text{GAAPCODE} = a + b \text{GLTDEBT} + b \text{LOGPOP} + b \text{CPACODE} + b \text{GOVVOTE} + b \text{CASH} + b \text{SRDEBT} + b \text{FSTRESS} + b \text{GFOA} + b \text{TURNOVER} + b \text{CPAUSED} + e$$

Independent Variable	Expected Sign	Estimated Coefficient	Coefficient chi-square	Probability
INTERCEPT		- 90.203	4.202	.0404
GLTDEBT	+	.002	1.345	.2461
LOGPOP	+	4.482	4.139	.0419
CPACODE	+	1.909	.6892	.4064
GOVVOTE	+	.071	.9308	.3346
CASH	-	-6.518	5.126	.0236
SRDEBT	+	.365	3.7288	.0662
FSTRESS	+	7.765	2.7487	.0973
GFOA	+	.104	3.3440	.0675
TURNOVER	+	.895	2.8366	.0921
CPAUSED	-	-4.589	3.0799	.0793

Model Summary Statistics

Number of Observations	50
-2 Log Likelihood	19.967
Chi-Square for Model (10 df)	29.137
p-value	.0012
Concordant Pairs	97.4%
Pseudo R <sup>2</sup>	.62

**TABLE 6: FURTHER ANALYSIS ON THE IMPACT OF AGENCY AND INSTITUTIONAL VARIABLES ON EARLY VERSUS LATE ADOPTERS**

**PRE - 1984**                      **POST - 84**  
**1 IF GAAP BY 1982 (N=18)** **1 IF GAAP 1984-88 (N=9)**  
**0 IF GAAP AFTER 1982 (N =10)** **0 IF GAAP AFTER 1988 (N=13)**

**A. AGENCY THEORY MODEL**

Explanatory variable	Estimated coefficient	Coefficient chi-square	Estimated coefficient	Coefficient chi-square
INTERCEPT	- 19.52	3.29*	-6.23	.29
GLTDEBT	.001	2.71*	-.002	.02
LOGPOP	1.12	43.30*	.72	.42
CPACODE	.31	.10	-.33	.08
GOVVOTE	.04	.71	1.03	.89
<u>Model Summary Statistics</u>				
-2 Log Likelihood		19.967		
Chi-Square for Model (10 df)		29.137		
p-value		.0012		
Concordant Pairs		71.1%		

**B. FULL MODEL**

Explanatory variable	Estimated coefficient	Coefficient chi-square	Estimated coefficient	Coefficient chi-square
INTERCEPT	- 29.65	2.79*	8.22	.20
GLTDEBT	.002	2.68*	.005	.17
LOGPOP	1.97	3.34*	.92	.39
CPACODE	.75	.33	-.74	.19
GOVVOTE	.06	1.01	8.41	.57
SRDEBT	-.008	.05	.03	.15
CASH	-.82	.39	-2.09	.74
CPAUSED	-.12	.01	-1.66	1.22
FSTRESS	-2.85	.91	-5.91	1.08
TURNOVER	-.12	.81	-.47	2.88*
GFOA	.04	.03	-.12	2.75*

Model Summary Statistics

-2 Log Likelihood	19.967
Chi-Square for Model (10 df)	29.137
p-value	.0012
Concordant Pairs	78.4%

\* significant at .10    \*\* significant at .05    \*\*\* significant at .01, N=50



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