AGE, AUDIENCES AND AUTONOMY
IN THE DYNAMICS OF ORGANIZATIONAL PRESTIGE

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[1] The authors' names are listed in alphabetical order. Each has made an equal contribution to the evolution and dissemination of the ideas contained herein. We wish to thank Nitin Nohria, Aage Sørensen, Barbara Reskin, Diane Burton, Jesper Sørensen, Michael Raynor and Hannah Riley for their comments on earlier drafts of this paper. We would also like to thank Anita McGahan for sharing Tobin's q data with us. Finally, we thank the Division of Research at Harvard Business School for its financial support.

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ABSTRACT

This paper examines the dynamics of organizational prestige: a subjective evaluation by a particular audience of the underlying quality of the firm. We establish a set of conditions under which organizational prestige with respect to a particular audience is inert, such that changes in firm quality do not lead to changes in its prestige. Drawing on theories of institutionalization, we argue that an audience may cease to grant prestige on the basis of quality, when it takes for granted the firm's right to control certain resources. This is in contrast to audiences whose members are required to question continually the right of a particular firm to have access to and control over specific resources such as capital. We analyze the mobility of the prestige of "Fortune's America's Most Admired Companies" for two specific audiences: executives and analysts. The study's principal empirical finding is that changes in firm quality, as measured by Tobin's q, have a substantially smaller effect on changes in the firm's prestige when the firm is old compared to when the firm is young. However, this effect exists only for executive audiences and not for analyst audiences. We suggest that these results might provide a bridge for combining the economic and the sociological theories of prestige processes into a single framework.

Age, Audiences And the Dynamics of Organizational Prestige

Introduction

The phenomenon of subjective evaluations of firm quality has been studied by economists under the rubric of reputation and by sociologists under the heading of status. For the purposes of our discussion we refer to the outcome of these subjective evaluations as *prestige* to avoid favoring either of these theoretical perspectives. The linguistic difference between the disciplines of economics and sociology often obscures the fact that scholars from these fields agree that exchange partners rely on prestige when entering into transactions with one another. For example, consumers often base their purchase decisions on their estimation of the prestige of a particular firm (Shapiro, 1983), financial communities rely on prestige appraisals developed by analysts to make investment decisions (Beatty and Ritter, 1986) and employees use prestige evaluations to make career decisions (Stigler, 1962). In addition, several benefits accrue to firms as a consequence of high prestige. For example, firms of higher prestige command a superior price for services of equal quality than do firms of lower prestige (Podolny, 1993, 1994; Benjamin and Podolny, 1999) and firms of higher prestige have easier access to capital, even when uncertainty about the firm's quality is high (Stuart, Hoang, and Hybels, 1999). It is not surprising, therefore, that research has shown that firms that are of high prestige enjoy greater survival rates (Rao, 1994; Singh, Tucker and House, 1986).

Despite agreement on the benefits of favorable subjective evaluations, there are substantial disagreements between sociologists and economists regarding the essential nature of prestige. Economic models argue that signals that are closely related to a firm's quality are used to evaluate its prestige (Weigelt and Camerer, 1988). In some instances these signals take the form of relative performance rankings that are the product of competitive tournaments (Rao, 1994). An example of such a signal is stock market valuations. Organizations may also emit signals directly (Spence, 1974) for example in the form of expenditures on advertising or social philanthropy. Economic models demonstrate that in equilibrium only those firms that are truly of high quality will find it rational to invest in acts that present or provide evidence of their high quality (Nelson, 1974). Thus, over the long run, audiences' evaluations of the quality of the firm will be aligned with its actual quality. This tight coupling of prestige and firm quality suggests that prestige will lead a firm to receive a share of resources which is commensurate with its quality. Consequently, the distribution of resources across firms is equal to the distribution of quality in a population of firms.

In contrast, sociological models question the existence of a tight congruence between the underlying quality of the social actor and its prestige. These models assume that audiences also base their prestige evaluations on organizational signals, but that these signals are not necessarily related to quality. Instead, audiences choose signals that indicate that the organization is desirable and appropriate within a widely shared system of norms and values (Powell and DiMaggio, 1991). Specifically, sociologists have argued that a firm's exchange relationships signal its appropriateness and hence affect its prestige. Drawing on Blau's (1964) insight that firm prestige is enhanced by affiliations with high prestige firms, Podolny (1993) argued that an organization's position in a network of exchange relationships is a major determinant of prestige. Endorsements by governments or professional associations may also serve as signals and lead to higher prestige (Wiley and Zald, 1968; Singh, Tucker and House, 1986). Furthermore, ritual conformance to institutionalized rules and the use of environmentally preferred symbols establishes firm legitimacy (Meyer and Rowan, 1977), and hence should also lead to higher prestige. Consequently, audiences' subjective evaluations of the firm can be substantially different from the firm's actual quality. The decoupling of prestige and quality has significant implications for inequality between firms. For example, it permits high prestige firms, whose quality has diminished significantly, to continue to access resources. Under the same logic, firms of high quality, but of low prestige, cannot access resources easily. Thus, according to sociological theory, the operation of prestige processes leads to a 'Matthew effect' (Merton, 1973; Podolny, 1993) whereby the inequality that is created between firms is greater than that which would be predicted purely on the basis of firm endowments and qualities.

In order to provide support for the sociological mechanisms, researchers have shown that institutional factors, other than firm quality, are important to understanding prestige processes. However, often these factors are significantly correlated with the underlying firm quality: a firm can give money to charitable causes only when it has slack resources, as pointed out by Cyert and March (1963). Audiences may thus use the display of legitimate symbols as credible signals of firm quality. Consequently, it is difficult to disentangle which of the two mechanisms operates: do firms obtain prestige because audiences value conformance to institutional norms, or because conformance is taken as a signal of quality since organizations must be of high quality in order to conform? A more convincing test of the theory that prestige processes are driven by social factors, independently of the signaling mechanism, involves showing that social factors moderate the relationship between quality and prestige.

In order to provide such a test, we propose a model in which prestige is determined by institutional mechanisms that emerge from the process of social construction. We argue that as firms acquire cognitive legitimacy with age, beliefs about firm prestige become taken for granted. When this occurs, audiences come to attribute general expectations of quality to the firm and no longer monitor its actual quality. Corporate prestige is then inert such that changes in firm quality do not translate into changes in firm prestige. Since different audiences vary by how much they are subject to institutionalization, we use these differences to further examine the legitimacy perspective. As executives attempt to construct stable institutional orders in their industry, these orders will likely be subject to cognitive legitimation. In contrast, analysts, by the nature of their role, continually re-evaluate firm quality and will therefore not take firm prestige for granted. For analyst audiences, changes in the prestige of both young and old firms follow changes in their quality. We test our hypotheses with data obtained from Occam Research Corporation for the period 1984 to 1996. These data are used by *Fortune* magazine to generate the America's Most Admired Corporations (AMAC) survey that has appeared in the January/February issue of *Fortune* magazine since 1982.

In addition to providing a more convincing test that prestige processes may operate independently of the signaling mechanism, our paper makes three further contributions to our understanding of prestige processes. First, we reconcile the competing predictions regarding the relationship between firm quality and its prestige. Instead of arguing for superiority of the economic or the sociological prediction, we reconcile the two by suggesting conditions under which changes in firm quality will or will not affect firm prestige. Second, we explicitly examine the often implicit assumption that prestige appraisals are essentially the same across different audiences. Our model questions this assumption and highlights that prestige processes will vary by audiences in predictable ways. This analysis is also crucial to a more sociologically informed theory of prestige. Whereas signaling theories predict that different audiences will come to the same appraisal of firm prestige, the hypothesis that prestige dynamics vary by audiences implies that the process is inherently more social. Third, prior research considered only derivative measures of prestige, such as price (Podolny, 1993), or survival (Rao, 1994). In this paper we use actual measures of prestige and thereby test our hypotheses directly. Furthermore, by examining changes in prestige and using cointegrated time series analysis, we address many methodological issues surrounding appropriate statistical modeling of prestige processes.

THE CONCEPT OF ORGANIZATIONAL PRESTIGE

The terms corporate reputation, corporate status and even corporate prestige are used widely throughout organizational literature. Although careful definition of the terms is often by-passed, each of these concepts has a long theoretical tradition in economics (Weigelt and Camerer, 1988) and sociology (for a review see Wegener, 1992). These traditions not only give precise definitions of the terms, but they also establish theoretical bases, which explain the emergence of reputation, status, or prestige. Barring some linguistic differences, our analysis of the arguments revealed substantial agreement on the definition of the phenomenon, albeit with competing explanation for the sources of prestige. In order to avoid confusion over these differences, we provide a very broad common definition of the phenomenon. We attempt to incorporate the most important features of the phenomenon described by the two traditions without introducing any of the causal mechanisms implied by either field. As a result, we define organizational prestige to be:

a subjective evaluation by a particular audience of the underlying quality of an organization

This definition has two critical components. First, the essential insight arising from both disciplines is that prestige is an evaluation. Sociologists often define prestige as "the estimation in which a person is held" (Shills, 1968). Similarly, economists refer to the phenomenon as the "evaluation of player type," where 'type' refers to a property or characteristic of the actor, known only to the actor, such as trustworthiness (Spence, 1974). Furthermore, both theories suggest that prestige, unlike price, entails a subjective evaluation of the firm. In fact, prestige becomes salient when markets fail. Take the situation of a heroic feat in a battle, which positively influences the outcome of the battle. This feat is a public good in so far as it improves the situation for those concerned about the outcome of the battle (Goode, 1978). But the hero cannot be compensated for his or her acts through markets; once the actor engages in a heroic feat, the good is provided to all who value it regardless of whether they have paid for it. Thus, those who value the good express their evaluations as prestige. Markets may also fail, because the audience may have no wealth with which to compensate the actors. Blau (1963) illustrated this phenomenon by showing that workers granted approval and deference to their co-workers in exchange for advice when they could not offer their benefactors anything of value. The fact that prestige situations arise in market failures makes prestige a different type of evaluation than price. Specifically, prestige is a subjective evaluation that exists only in the minds of those undertaking the evaluation

The second critical component of the definition underscores that a particular audience undertakes an evaluation of a social actor. Thus, prestige is not a property of an organization, but rather it is a characteristic of a relationship between an organization and a particular audience. Viewed in this way, prestige processes for the same firm may vary significantly by audience. Whereas most organizational researchers have assumed in their models that there exists a well-recognized prestige order which does not vary across different audiences (Podolny, 1993; Breiger, 1995; Fombrun, 1996), some sociological research on occupational prestige and some economic research on the process of prestige attainment (Frank, 1985) assumes that prestige may vary significantly across audiences. For example, Wegener (1990) found that higher prestige respondents tend to give higher prestige judgments to the 10 highest occupations and lower prestige judgements to the 10 lowest occupations, whereas low prestige respondents give higher judgements to the lowest and lower judgements to the highest occupations. In other words, low prestige actors tend to level the social grading continuum, and high prestige actors tend to polarize it (Lewis, 1964; Alexander, 1972). This result is not surprising given that the elite usually endeavor to distinguish themselves from other groups in society (Mills, 1956). The differences in evaluations underscore the social, as distinct from psychological, dimension of prestige: location in the social structure guides the way in which groups subjectively evaluate objective characteristics of others.

QUALITY AND PRESTIGE

Having established that prestige is a subjective evaluation of a set of objective characteristics of a social actor, we now turn to examine economic and sociological causal mechanisms that attempt to explain how the subjective evaluations are formed. The critical assumption in economic treatments is that audiences base their subjective evaluations on characteristics and signals that are significantly related to quality. Specifically, two mechanisms have been identified: (i) audiences will use yardstick competitions to arrive at their appraisals, or (ii) audiences will rely on signals emitted by organizations to arrive at their evaluations.

Yardstick competitions, such as car races (Rao, 1994), evaluate relative quality of different social actors by explicitly asking them to demonstrate their performance in pre-determined settings. By being impartial and providing an equal ground for competition as well as clear criteria for appraisal of characteristics, these competitions allow for all differences in relative performance to be attributed to underlying differences in quality, rather than to fortuitous circumstances or the help of others. Consequently, these contests act as credible mechanisms for discerning underlying quality. In the case of large organizations, stock markets become the playing field for such competitions. Stock markets are comparative arenas that provide a clear criterion for evaluation: the stock price. The stock price is determined in a market situation, in which participants are financially rewarded for identifying high quality firms, which will generate high future cash flows, and are punished for choosing poor future performers. Given these financial incentives, the efficient market hypothesis

(Fama, 1965) predicts that in equilibrium stock market value reflects the discounted future cash flows generated by the firm. Consequently, the stock price is one of the best indicators of underlying firm quality.

When such competitions are not available, or when they provide imperfect information, audiences may use signals emitted by the firms, such as expenditures on advertising or social philanthropy to evaluate the prestige of the firm. Although the signals may not be comparable across firms and although they lack all the impartial characteristics of a yardstick competition, economic theory argues that they can serve as indicators of quality provided that these signals are costly to emit (Spence, 1974). According to the theory, firms invest resources to build a reputation for quality, because of the expected gains of overcoming the information asymmetry and benefits of being perceived as high quality (Dasgupta, 1988). The investment is rational when the cost of the action is smaller than the informational benefit that can be expected to accrue from the act. This assumption of rationality serves as a natural filtering device for the audiences: only those firms that truly possess high quality assets engage in reputation-enhancing actions (Akerlof, 1970). Those whose assets are of poor quality will not find it worthwhile to invest in reputation. Consequently, there exists a separating equilibrium in which high quality agents will find it in their interest to invest in acts that show that they are good, but in which low quality agents will find it too costly to do so (Spence, 1974).

LEGITIMACY AND PRESTIGE

The existing sociological literature on prestige processes shares some similarities with the economic models discussed previously, but there are also substantial differences between the two approaches. Similar to economic arguments, those of sociology accept the basic relationship between the acquisition of prestige and the display of appropriate signals. The key difference is that audiences attend to signals which confirm firm legitimacy which is defined as "[…] a condition reflecting cultural alignment, normative support, or consonance with relevant rules or laws" (Scott, 1995). Given that audiences attend to legitimacy and not efficiency, firm prestige will not reflect underlying firm quality, provided that underlying quality is not the basis of legitimacy. This literature focuses on exchange networks and endorsements by other firms as well as on the adoption of organizational forms as the key signals of legitimacy.

The most advanced sociological framework for analyzing prestige processes is provided by Podolny (1993), who argues that under conditions of uncertainty, audiences will make attributions about the quality of a firm's products based upon the prestige of the other firms with which it exchanges goods and/or services. Affiliations with prominent others, therefore, is the key factor that mediates between quality and firm status or prestige. The nature, content, and extent of a producer's relations with others in the market contribute to the decoupling of quality and prestige in an organizational context. Embeddedness of economic action in social relations has two effects on the relationship between quality and prestige. First, it determines which groups of producers and consumers come into contact with one another and which do not. This differential exposure determines which consumers can and cannot change their evaluations of different producers. For example, exchange partners of a high-prestige producer may not discern a 'relative' decline in the quality of their preferred partner, if they do not come into contact with other producers in the market. Second, exchange relationships mediate between prestige and quality, because prestige flows through interlinkages between organizations. Ties to higher-prestige firms enhance the prestige with which the focal firm is viewed, whereas ties to lower-prestige firms detract from it (Blau, 1964). Since exchange partners observe not only firm actions but also decisions of other exchange partners, the formation and dissolution of exchange relations with others will affect the perceived quality of the firm. Additionally, exchanges with equivalent organizations, buyers and sellers as well as endorsements by other entities in the organizational field are also critical to firm prestige. Baum and Oliver's (1991, 1992) research on day care centers in Toronto found that firm-level ties to prominent community organizations, such as church groups and government agencies, improved the perception of the centers in the eyes of potential customers.

In the new institutional research stream, sociologists have suggested that displaying legitimate signals, which are aligned with norms and values of the society, is also critical to firm prestige (Meyer and Rowan, 1977). These theories assume that audiences expect organizations to conform to rational and appropriate rules of conduct. However, as outsiders cannot assess the internal workings of the organization, they seek signals that will allow them to infer that the organization follows prescribed rules (DiMaggio and Powell, 1983). Organizations that adopt highly visible structures that signal alignment with values and norms of critical audiences benefit from prestige increases. When organizations are required to adopt legitimating signals, they protect their technical activities by decoupling elements of their structure from other organizational activities, thereby reducing their efficiency (Meyer and Rowan, 1977; Selznick, 1949). Despite the efficiency costs, a great deal of research has confirmed, albeit indirectly, that the adoption of these highly visible structures such as organizational forms (Fligstein, 1990; Zuckerman, 1999), specialized departments (Tolbert and Zucker, 1983), or management techniques (Westphal, Gulati and Shortell, 1997) has contributed to positive organizational evaluation. Whereas the institutional processes mentioned in the previous section focus on the effects of regulative and normative legitimacy (Scott, 1995), we examine how cognitive legitimacy impacts subjective evaluations of organizations.

Social Construction of Reputation

Cognitive legitimacy is a direct effect of institutionalization processes. As outlined by Berger and Luckman (1966), this process transforms subjective meanings into objective facticities. To produce an environment for stable social conduct individuals *externalize* their subjective meanings and habitualize their actions. When habituated actions result in the orderly conduct between actors, these actions become typified by each of the actors and a shared cognitive system develops. In these circumstances, social actors begin to play roles *vis-a-vis* one another, hence, their conduct becomes institutionalized. The institution is objective to the actors involved, and is later presented to new actors as possessing an *objective* reality of its own. These shared cognitive systems become viewed as objective and external structures defining what is "natural" and "reasonable" in the social world, despite their origin as by-products of human interaction. These institutions are treated as impersonal prescriptions which identify various social purposes and specify, in a rule-like way, the appropriate means to pursue these technical purposes rationally (Ellul, 1964). Once an institution is perceived as objective, no question arises in the minds of actors about whether it represents the natural way to effect some kind of action. Actors learn to understand institutions as objective truth in the course of socialization and to *internalize* them as objective reality, which in turn shapes the actors and their behavior (Meyer and Rowan, 1977; Zucker, 1977; DiMaggio and Powell, 1983). In the process of learning, actors not only acquire the routines needed for the outward performance of the role vis-à-vis other roles, but also the cognitive and affective knowledge that is directly appropriate to this role. For example, being a judge involves not only knowledge of law, but also 'knowledge' of the values and attitudes deemed appropriate for a judge as he or she interacts with occupants of other roles (Berger and Luckman, 1966). As Berger and Luckman (1966) suggest:

> *By virtue of the roles he plays the individual is inducted into specific areas of socially objectivated knowledge, not only in the narrower cognitive sense, but also in the sense of the 'knowledge' of norms, values and even emotions.*

Since the process of institutionalization so powerfully shapes the perceptions of reality, it will also strongly determine the bases that the occupants of one role use to evaluate the occupants of another role. Specifically, as actors attempt to evaluate other social actors, the criteria, signals, or characteristics that should be considered "rational" and "natural" in evaluating these others will be dictated by their role. The weighting of these criteria will vary by the nature of the role occupied as well as by the nature of the role evaluated. For these reasons, an actor's prestige is specific to a certain evaluating audience and may vary from one audience to the next in predictable ways. We focus on inter- and intra-role subjective evaluations. Specifically, in this paper we focus on how executives in the same industry and analysts who follow that industry will use changes in firm market valuation differentially to arrive at their subjective evaluations of firm prestige.

Analyst Audiences

Analysts perform a very specific role in the investment industry. First, they are responsible for making investment recommendations to institutional and retail investors. These recommendations are based upon information that they receive from company representatives, for example Chief Financial Officers (CFOs), controllers, and public relations representatives. In addition, analysts will approach suppliers and customers in order to obtain qualitative information about the firm. These data are incorporated into sophisticated models that generate forecasts about the future earnings and stock price of a firm. As such, analysts ascribe to the financial conception of the corporation (Fligstein, 1990).

Analysts earn their reputation through and their compensation is based upon the accuracy of their predictions about the future earnings and/or the price of a firm's stock (Mikhail, Walther, and Willis, 1998). The higher the accuracy of an analyst's predications, the greater his or her rank relative to other analysts in the industry. Analysts compete intensely for position in such rankings both for intraprofessional prestige and for the increases in compensation granted to analysts of high rank (Eccles and Crane, 1988; Zuckerman, 1999). Good analysts are therefore those men and women who have a good record for accurately predicating movement in a firm's equity.

The advent of new technology, more stringent SEC reporting requirements, and the increased liquidity of the market have all led to an increase in the frequency and availability of information about firms. We contend that because analysts are asked to re-evaluate the firms they follow much more frequently, and because their rank depends on the accuracy of their forecasts and predictions about stock prices, they will focus predominantly on the future performance of the firm as measured in the stock price and earnings forecasts, because these are objective measures for evaluating the quality of the firm. Thus, it is not surprising that they should consider expectations about the future performance of the firm almost exclusively, when evaluating the reputation of the firm.

H_1: *For analyst audiences an increase in the expectation of a firm's future performance leads to an increase in the firm's prestige.*

Executive Audiences

Although analysts and executives may agree upon what factors contribute to the future performance of the firm, we characterize executives as adopting a longer term perspective when thinking about quality. Consequently, when they consider the prestige of the firm, they do not place as much emphasis on the market expectation of firm performance as do analysts. For example, a survey of plant leaders and corporate executives indicated that human resources, quality management, supplier relations, customer satisfaction, manufacturing, and the use of technology were considered by those surveyed to be the drivers behind productivity and competitiveness (Taninecz, 1997). The institutionalization of such factors in their role leads us to expect that executives will consider this information when evaluating the prestige of their own firm as well as the prestige of the competitor firms in their industry. This leads to the following hypothesis:

H_2: *Following an increase in expectations of firm performance, analyst publics will grant a greater increase in prestige than executive publics*

EFFECTS OF AGE

The second fundamental characteristic of the prestige process that we present in our model is that highly institutionalized areas of social life are presumed to be above the discretion of any individual participant. They are taken for granted as being legitimate, independently of any evaluation of their impact on work outcomes. As long as audiences believe that a certain institution is rational for organizing a particular social activity, they will find it more difficult to conceive that the activity could be undertaken by another social form. For example, it is widely accepted that the current education system is appropriate for education. Although there exist other alternatives whose quality may be superior, such as home schooling, these two different forms are not directly compared. The educational system benefits from the generalized perception that it is the natural way of organizing education. Consequently, role performance relative to other institutions becomes unimportant. Changes in the relative quality of the institutionalized system do not undermine the evaluation, because other options are not even considered as substitutes for the existing institution.

The existence of these processes is well documented in institutional studies (for example, Tolbert and Zucker, 1983). Initially, selection may be based on rational criteria, where different alternatives are evaluated on the basis of their efficiency and ability to solve social problems. With time, however, relative comparison is not utilized. The institution is transmitted as is, even though there may be indications that the institution does not perform as well as alternatives and would lose in a contest of quality (Powell, 1995). In those circumstances, subjective evaluation becomes attached to institutions that exist independently of the particular qualities of the actor 'occupying' the identity. Audiences no longer attend to the signals of quality and the evaluated actors acquire identities which carry *generalized expectations* about the qualities of actors for making valued contributions.

As much as these processes apply to many social institutions, they are critical to organizations, which rely on rationalized formal structures (Weber, 1914). Organizations need audiences to recognize that they have a legitimate right to organize and to manage the resources entrusted to them. The recognition of that right is not a constant; in fact, Stinchcombe (1965), in his treatment of 'liability of newness' argued that "new organizations and new organizational forms have rather weak claims on public and official support." Organizations will only be considered cognitively legitimate when they are able to account rationally for organizational actions and when they become reliable. Both of these characteristics come with firm age. The longer a firm has been in existence, the greater the breadth and depth of information that exists about the firm. A firm establishes expectations about its abilities through a rich history of previous achievements and stories of how it has behaved in the past. Whereas great corporate histories, including various historical achievement trends are available for older firms, such anecdotal and objective information is limited for younger firms. Consequently, younger organizations cannot easily rationalize their claim to organize and manage resources. Furthermore, high reliability requires that organizational structures be highly reproducible. Reproducibility of structure also increases as organizations grow older, since organizational members take time to learn to trust and cooperate with each other (Stinchcombe, 1965) and learn organization-specific skills and routines (Nelson and Winter, 1982). Solidification of their routines leads to further stability in a firm's behavior over time. In contrast, younger firms are not as likely to reproduce themselves on a daily basis. Their claim to manage resources is weaker, and consequently they have to demonstrate continuous signs of quality in order to rationalize their control over assets.

As before, the extent to which rationalization and reliability contribute to the emergence of generalized expectations of quality depends on the nature of audiences. Extensive literature on the nature of executive cognitive processes in the same industry suggests that executives are likely to develop such stable expectations. Although firms headed by the executives compete against each other in markets, they are not interested in all-against-all competition. Rather they prefer that competition be stable and that markets be reproduced from one period to the next (White, 1981). Since competition is inherently risky, executives build stable mental models which allow them to compete with each other in a stable fashion. Fligstein (1996) argued that actors must build an "account of the world" that reduces the uncertainty of markets and focuses on behavioral commitments. Crucial to this account is a mental model of the structure of a market and the way one's firm is located within it. Construction of the mental model of competition occurs at the collective level. Shared definitions of rivals stabilize the boundaries of a market and allow firms and customers to coordinate decisions. They also make it possible for firms to isolate a competitive arena in which opportunities and threats are decipherable and the rules of the game can be played. Without these assumptions, strategic choice would be haphazard and markets would be unsustainable (White, 1981). The typifications inherent in these models create sociocognitive friction that encourages managers to define markets around taken-for-granted organizational forms (Porac *et al*, 1995). As a consequence, market insiders rarely change their cognitive orderings (Abrahamson and Fombrun, 1994). Top managers' tenures in their industries provide a very good predictor of their collective commitment to the status quo (Hambrick, Geletkanycz and Fredrickson, 1993)

As organizations are taken for granted with age, they acquire, in the minds of audiences, the right to manage resources. This right is transmitted as a social fact without requiring justification. Consequently, subjective evaluations are not based on actual quality, but rather on audiences' pre-established notions of quality. Executives are particularly likely to develop such myopic views because they critically depend on institutionalized rankings to decide how their firms are going to participate in market competition. Since reevaluation of orderings may lead to market chaos and possibly even market failure, reliance on more volatile signals of firm quality is potentially detrimental to the firm. The best strategy for executives is to follow the previous orderings and to reproduce the existing structure. In contrast, young firms are still in the process of social testing. Since their claim on resources is not yet considered legitimate, accounts of the organization are not available and audiences must monitor the indicators of firm success in order to derive their subjective evaluations. In these circumstances, managers can do no better than to rely on signals of underlying quality to derive their evaluations of other firms. Thus, we expect:

> **H_3**: *For executive audiences older firms will experience smaller changes in prestige than will younger firms for a given change in the expectations about the future performance of the firm.*

The extent to which the process of institutionalization takes place is critically dependent on the assumption that audiences are willing to construct such cognitive schemata. In the case of analysts this is unlikely. Even though it is possible to construct rational accounts of why the firm should control a particular set of resources, analysts are likely to ignore such justifications. As we argued above, analysts, by the virtue of their role, are continually required to pay attention to the financial value of the firm. By examining the financial value of the firm and by understanding the drivers of value creation in the firm, analysts do not take the existence of the firm for granted. Rather, they see firms as collections of assets that can be reconfigured easily. Thus, it is very unlikely that as organizations age, analysts will be less likely to treat signals of underlying quality as the main basis for their subjective evaluations. Hence, we hypothesize that:

H_4: *For analyst audiences, older firms will experience equivalent changes in prestige to younger firms for a given change in the expectations about the future performance of the firm.*

Alternative explanations for the relationship between age and firm prestige have been proposed. For example, some research posits that in addition to contributing to firm legitimacy, the process of aging also acts as a natural filtering device that separates firms of poor quality from those of good quality (Petersen and Koput, 1991). Specifically, firms with good resources and those that are most reliable or perform most consistently are selected, while those with poor or erratic performance are not. Consequently, only those truly exceptional firms survive. Thus, firms that persist over a long period of time are assumed to be of high quality. This suggests that because they are necessarily good older firms will experience smaller changes in prestige than will younger firms for a given chainge in the expectations about future performance of the firm as predicted in hypothesis three. With little variation in quality for old firms, we would not expect to find any effect of the interaction term. In contrast, because of the high degree of variation in the quality of young firms, it would be reasonable to expect to find the effect predicted in hypothesis three. If this is the case, then all that can be concluded is that old firms are also high performing firms.

Fortunately, hypothesis four enables us to discern whether the interaction effect reflects social processes or whether it is an artifact of unobserved heterogeneity. If the latter is true, then we expect to observe no difference between analyst and executive audiences with respect to hypothesis three. When firms are old, changes in the expectation of future performance will not lead to changes in prestige for either of these audiences whereas when firms are young it is reasonable to assume the changes in quality will lead to changes in prestige. Alternatively, if we observe a difference between the two audiences in terms the relationships described in the previous sentence then our argument that prestige is an outcome of taken for granted beliefs about a firm is supported.

DATA SOURCES

This study uses a time-series analysis because we are interested in how a series of underlying variables determine a firm's rank in the hierarchy for corporate prestige over time. The time-series approach will permit us to model the continuous process by which an organization is ranked in the hierarchy for organizational prestige over time. This analysis examines the relationship between a firm's prestige and several ascribed and quality variables. Organizational prestige scores for the period 1984 to 1996 inclusive are used in this study.

Prestige Variables

This study uses data obtained from Occam Research Corporation for the period 1984 to 1996. These data are used by *Fortune* magazine to generate the America's Most Admired Corporations (AMAC) survey that has appeared in the January/February issue of *Fortune* magazine since 1982. Using the list of companies, from the *Fortune 500* industrial and service directories, the ten largest companies as determined by total revenues, are assigned to an industry group. Each company is assigned to a group according to the business that contributed most to its revenues.

The AMAC survey asks executives and directors, and financial analysts to rate the 10 largest companies (in some instances there are fewer than ten) in their own industry or economic sector on eight attributes. In 1997, Occam surveyed over 12,600 people with a response rate of approximately fifty percent. The attributes are: (1) quality of management, (2) quality of products and services, (3) financial soundness, (4) long-term investment value, (5) use of corporate assets, (6) innovativeness, (7) responsibility to the community and environment, and (8) ability to attract and retain talented people. Each respondent uses an eleven point scale (0 - 10), where zero is poor and ten is excellent, to evaluate the firms in their industry on each of the eight attributes listed above. Average scores for each attribute across all respondents are calculated. These scores are then averaged to arrive at an overall score for each company. It is this latter score which is reported in *Fortune* magazine.

Rather than use the averages that are reported in *Fortune*, this study adopts the approach advocated by Fombrun and Shanley (1990). Using principal components analysis, we combine the eight attributes such that a "best" indicator is identified, in the sense that the statistical properties of the new composite indicator (variance and reliability) are maximized given the correlation structure of the data (Affifi and Clark, 1996). The data are analyzed according to this process for each of the thirteen years (1984 to 1996) considered in the study and a single factor is extracted through the varimax factor analysis for each period. There is little variation in the component loadings across the thirteen periods. The Cronbach's Alpha statistic for the eight dimensions of reputation range from 0.972 to 0.974 over the period. The eigenvalues across all thirteen periods range between 6.5 and 6.7. The percent of variance accounted for by the single factor ranges from 95 to 97 percent.

The new prestige scores generated as a result of the varimax factor analysis are then adjusted for sector differences. This is done because *Fortune* asks respondents to compare different firms competing in the same industry. This element of the design of the *Fortune* study may lead to industry specific differences in how firms are ranked. To correct for this problem, the prestige variable in this study is a measure of the difference between a firm's prestige score in a particular year and the average prestige score of all firms in its industry in that same year. In addition to an overall prestige score, data were obtained that make it possible to calculate an analyst and executive prestige score for each firm. The procedure described above is used to calculate these latter two dependent variables.

Some researchers have raised a concern that our dependent variable provided by the *Fortune* data represents nothing more than a firm's reputation as an investment (Fryxell and Wang, 1994). Consequently, it is possible that our dependent variable captures a highly objective appraisal of the firm rather than the subjective prestige measure about which we have theorized in this paper. Although we acknowledge this potential problem, we contend that by using this dependent variable we establish a more stringent test of our institutionalization hypotheses. Specifically, if we observe that with age changes in the financial appraisal of the quality of the firm no longer translate into changes in prestige (age and quality interaction) despite the 'objective' nature of this dependent variable, then there is every reason to believe that the institutionalization explanation that we propose holds.

Firm quality

We measure firm quality by using expectations about its future performance as approximated by Tobin's *q*. The measure is calculated as:

$$\text{Tobin's q} = \frac{\text{market value of financial claims on a corporation}}{\text{replacement value of the corporation's assets}}$$

where the market value of financial claims on a corporation is equal to the market value at year-end of common equity times the number of shares outstanding plus the book value of preferred stock and debt, and the replacement value of the corporation's assets is the sum of the book value of all assets except inventories and net plant, property, and equipment, plus the replacement value of inventory, plant, property, and equipment.

Tobin's *q* values were obtained from Professor Anita McGahan at the Harvard Business School. For a detailed description of how the Tobin's *q* values used in this paper were calculated please refer to McGahan (1999). Tobin's *q* represents an assessment by financial claimants about whether or not the corporation **will** generate greater value from the assets under its control relative to the value that these assets would generate were they deployed outside the firm. As such, according to McGahan:

> *Tobin's q reflects a firm's prospects for profitability: q can be interpreted as investors' views on the ability of management to generate more cash from assets than would be obtained by selling off the assets to the highest bidder.*

A Tobin's *q* value of greater than 1 indicates that assets are expected to be better utilized inside the firm as opposed to elsewhere. We extend this idea of expectations further and claim that Tobin's *q* represents the fit between a firm's assets and the management team that will control those assets. As such Tobin's *q* is a measure of firm quality.

Performance

This study uses two measures of past performance: excess total returns to shareholders over a three-year period and growth over the past three years. Fombrun and Shanley (1990) find that these two variables are important achievement characteristics for explaining organizational prestige. To generate the excess returns variable, the excess total returns to shareholders for all companies in the Compustat database were obtained, along with the companies' two digit SIC codes. McGahan and Porter (1997) explain that it would be erroneous to weight excess returns from all firms equally. Therefore, companies in the Compustat database are sorted according to SIC code and their contribution to total industry returns is calculated according to the value of the assets under their control relative to the value of all assets within their particular industry. In essence, a firm's contribution to total industry returns is weighted according to the book value of its assets. Average asset-weighted returns are calculated for each industry in each year. A firm's three-year excess return to shareholders is determined by subtracting the asset-weighted average total return to shareholders for its industry from its total three-year return to shareholders. The process is repeated for all firms for all years from 1981 to 1996.

This measure is calculated in this manner for two reasons. First, by adjusting for industry, excess returns are comparable across all companies. It is possible that returns in some industries such as software will naturally be higher than returns in other industries such as retail. Therefore, a twenty percent return in software might be equivalent to a two percent return in the retail industry. Manipulating the variable, as described above, corrects for this discrepancy. The second reason for undertaking the above adjustment is to ensure that industry averages are not calculated by weighting each firm equally, but rather the adjustment ensures that a firm's contribution to the industry total is contingent upon the proportion of all assets in the industry under its control. In this way, the three-year excess return for the industry presented here measures the performance of all assets in a given industry.

Growth, the second performance variable that is included in the model, refers to the change in the size of a firm's economic activity over a period of time. In much the same way as excess returns are a measure of how a firm distinguishes itself from the average, so too is growth a dimension of inequality that is used to rank firms in the prestige hierarchy. Growth is an indicator of how well a firm is taking advantage of the opportunities in its industry. The greater the rate at which a firm grows, relative to other firms in its industry, the more successful it is at identifying new business and/or capturing business from competitors. Firms that distinguish themselves on this dimension will be ranked higher in the prestige hierarchy. We construct a multi-year growth variable using Compustat data for the period 1981 to 1996. To ensure that the growth is not a temporary anomaly, it is important to track this variable for each firm over a period of time. For the purposes of this study, firm growth is tracked for three years. Therefore, the growth variable represents each firm's industry adjusted, three-year compound annual growth rate (CAGR) in sales.

Age of Firm

Four sources were consulted in order to construct the firm age variable: U.S. Public Companies Directory of Corporate Affiliates (1989, 1996, 1997, and 1998); Moody's Industrial Manual (1984 - 1998); Moody's Bank and Finance Manual (1984 - 1998); and Moody's Transportation Manual(1984 - 1998). The age for each firm is determined by subtracting the year of founding from the year in which the firm's prestige ranking was made. Thus a firm founded in 1950, is assigned an age of forty in 1990. Since the age variable is not normally distributed, we cannot include it in the regression as it would yield inappropriate estimates. Following the suggestion of earlier researchers (Hannan and Freeman, 1989), we have taken the natural logarithm of the variable to normalize it.

Industry Age

To control for the effect of industry, an industry age variable is calculated. This variable is equal to the age of the oldest firm in a particular industry in a particular year. As it is very difficult to determine the actual age of an industry, we have selected this measure as a proxy for this variable. The control for industry age is necessary as all of our variables are corrected for industry effects. Furthermore, we added this variable to control for the fact that old firms can only exist in old industries, but young firms can exist both in young and old industries. If this variable were not included, our results would confound the effect of industry age and the effect of firm age.

ANALYSIS

Statistical techniques generally assume that observations of variables are independent of one another. However, in time series analysis such an assumption is often violated (McCleary and Hay, 1980; Ostrom, 1990). Many variables, when measured over time, suffer from substantial autocorrelation. They are "random walks," such that each observation is dependent in part on one or more previous observations (Levinthal, 1991). Our main variables, prestige and Tobin's *q* exhibit these properties: high Tobin's *q* in one period will likely lead to high Tobin's *q* in another year. As these variables do not exhibit mean reversion and the best predictor of each variable is the same variable lagged by one period, we need to exercise care in analyzing these processes. Autocorrelation within variables can lead to spurious findings, as the regression picks up the common trends in the highly trended time series. Thus, the regression of one random walk on another is virtually certain to produce a significant relationship, even if the two are in fact independent (Granger and Newbold, 1974). Furthermore, given that the regression captures trends, it is not uncommon to obtain R^2 greater than 95 percent, even though there is no relationship between the independent and dependent variables. Consequently, one could establish that there is a causal relationship between the variables of interest, where no relationship exists. In order to avoid this problem we construct difference variables, defined as $\Delta y = y_t - y_{t-1}$. In both cases using the difference between the variables leads to the creation of stationary variables, which can be usefully analyzed using linear techniques.

The biggest problem created by using the differenced variables is the loss of all of the long-run information. In this particular study, all of the information regarding equilibrium characteristics of prestige processes is lost. For example, the analysis of differenced variables allows us to trace whether changes in expectations of future performance lead to changes in prestige. However, we are unable to answer what happens when a firm's prestige is affected by factors other than the expectation of future performance. Does the additional boost to prestige propel the firm to a new position or does the firm quickly revert to its equilibrium position? If the former is correct, then a firm's prestige can be usefully thought of as a position in a ranked structure. If the latter is correct, then a firm's prestige is no more than a reflection of its future performance.

In order not to lose the long-term equilibrium data, we use cointegration techniques proposed by Pesaran and Yin (1996). First, we estimate the equilibrium relationship between prestige and Tobin's *q* using random-effects models.

$$\text{prestige}_{i,t} = \alpha + \beta \text{ Tobin's } q_{i,t} + \varepsilon_{i,t}$$

In order to confirm that, we establish an equilibrium relationship; we analyze the residuals of the regression, $\varepsilon_{i,t}$. Consistent with the assumptions of OLS, the residuals should also be a stationary process. In order to test stationarity of residuals, we regress the equation below and test for $\varrho = 0$. Since ϱ is based on residuals and is distributed non-normally, we utilize Dickey-Fuller distributions to analyze its significance (Engle and Granger, 1987; Peasaran and Yin, 1996).

$$\Delta\hat{\varepsilon}_{i,t} = \rho\hat{\varepsilon}_{i,t} + \xi_{i,t}$$

Once we establish that the residuals are not a random walk, we can regard the estimate of β (in our case $\beta = 0.31$) as representative of the long-term equilibrium relationship between prestige and Tobin's *q*. Consequently, we can treat $\varepsilon_{i,t}$ as an estimate of the deviation from the long-term equilibrium, since by re-arranging our long-term regression equation, we obtain:

$$\hat{\varepsilon}_{i,t} = \text{prestige}_{i,t} - \hat{\beta}\,\text{Tobin's q}_{i,t} - \hat{\alpha}$$

When prestige is in line with Tobin's *q* the entire equation converges to zero and there is no pressure to bring the relationship into the equilibrium. When the two variables are not in line, there will be pressure to bring them in line. This is accomplished by changing the prestige of the firm. Because the $\varepsilon_{i,t}$ term measures the tendency to correct the error in the expectation of firm performance based appraisal of prestige, we adopt the label of *Error Correction Mechanism* (ECM) to denote $\varepsilon_{i,t}$. The error correction mechanism is subsequently lagged by one period to reflect past pressures to bring prestige into equilibrium and it is introduced into the short run regression, specified as:

$$\begin{aligned}\Delta\text{prestige}_{i,t} = \quad & \eta + \varphi\,\Delta\text{Tobin's } q_{i,t} + \kappa\,\text{Age}_{i,t} + \lambda\,\text{ECM}_{i,t-1} + \\ & + \mu\,\text{control variables}_{i,t} + \varepsilon_{i,t}\end{aligned}$$

We expect the λ associated with the ECM $_{i,t-1}$ to be negative. When the firm's prestige in the previous period exceeds its equilibrium as predicted by its Tobin's *q*, we expect that there will be a negative change in firm prestige in the current period to bring the relationship into equilibrium. Similarly, when the ECM $_{i,t-1}$ for the firm is negative, and the firm prestige is below its equilibrium value as predicted by its Tobin's *q*, current prestige should increase.

In order to examine the effect of age on the decoupling of prestige from firm quality, we introduce two interaction effects, as shown below:

$$\begin{aligned}\Delta\text{prestige}_{i,t} = \quad & \eta + \varphi\ \Delta\text{Tobin's } q_{i,t} + \kappa\ \text{Age}_{i,t} + \tau\ \Delta\text{Tobin's } q_{i,t} * \text{Age}_{i,t} + \\ & + \lambda\ \text{ECM}_{i,t-1} + \psi\ \text{ECM}_{i,t-1} * \text{Age}_{i,t} \\ & + \mu \text{ control variables}_{i,t} + \varepsilon_{i,t}\end{aligned}$$

The interaction (ΔTobin's $q_{i,t}$ * $\text{Age}_{i,t}$) captures differences in the short-run dynamics of prestige and Tobin's *q* for young and for old firms. We expect the interaction to be negative, since older firms should be less likely to change their prestige as their Tobin's *q* changes. The interaction ($\text{ECM}_{i,t-1}$ * $\text{Age}_{i,t}$) captures the differences in adjustment to long term equilibrium between young firms and old firms. If prestige does exist independently of firm quality for old firms, we would expect the adjustment to equilibrium to be much slower for old firms than for young firms. Because we expect λ to be negative, ψ should be positive to reflect our hypothesis. Simply put, the interaction effect will modify the main effect of ECM on changes in prestige.

RESULTS

Table 1 reports the descriptive statistics of the variables that are used in this analysis. Table 2, table 3, and table 4 present correlation matrices for the data related to the overall prestige scores, executive prestige scores, and analyst prestige scores respectively. Table 5 contains the results of the general linear models in which the within-group correlation structure for the firms in the data is varied.

|INSTERT TABLES 1, 2, 3 and 4 APPROXIMATELY HERE|

The data in models I, II, and III in table 5 use the aggregated prestige score as the dependent variable. Models IV, V, and VI in table 5 use the prestige score derived from Executives' ratings and models VII, VIII, and IX use the prestige score derived from Analysts' ratings. As such, the latter two groups of three reflect the effect of the independent variables on executives' and on analysts' prestige rankings for the *Fortune* firms over the period 1984 to 1996.

|INSERT TABLE 5 APPROXIMATELY HERE|

Aggregate

Model I includes the main effects variables. With the exception of growth, all variables are statistically significant. The sign on the Tobin's q variable, which represents changes in expectations of future performance, is positive, as expected, and as predicted the sign on the ECM variable is negative. We observe that industry age is negatively related to changes in prestige. This finding is consistent with the hypothesis that we would expect to see less variation, or smaller changes in prestige, for firms in older industries compared to firms in younger industries.

Model II includes the first interaction term change in Tobin's q * age of the firm. The signs and significance of the main effect variables are the same as in Model I. Not only is the interaction term statistically significant, but also the sign on the parameter estimate for this variable is negative, as predicted. The statistical significance of the interaction term suggests that age modifies the effect of expectations about future performance on changes in prestige.

Model III introduces a second interaction term, ECM * age of the firm. The signs and statistical significance of the main effect variables and the first interaction variable are the same as in models I and II with the exception that the growth variable is now statistically significant, unlike that in the previous two models. We further observe that the second interaction term is statistically significant and positively related to changes in prestige as predicted.

To better understand the relationship between the interaction terms and the dependent variable in model III, prototypical plots were constructed. Figure 1 presents the results of the prototypical plot that examines the ECM * age of the firm interaction effect. The plot presents a comparison of the effect of the interaction term on changes in prestige for young, medium, and old firms. The plot is constructed using the parameter estimates from model III in the following equation:

$$\begin{aligned}\Delta\text{prestige}_{i,t} = \; & 0.246 + 0.006 * \text{Excess Returns}_{i,t} + 0.174 * \text{Growth}_{i,t} \\ & + -0.122 * \text{Industry age}_{i,t} + 0.063 * \text{Age of the firm}_{i,t} \\ & + 0.929 * \Delta\text{Tobin's } q_{i,t} + -0.181 * \Delta\text{Tobin's } q_{i,t} * \text{Age of firm}_{i,t} \\ & + -0.35 * \text{ECM}_{i,t-1} + 0.049 * \text{ECM}_{i,t-1} * \text{Age of firm}_{i,t}\end{aligned}$$

We assume an age of twenty-five years for young firms, an age of sixty years for medium firms, and an age of 125 years for old firms based upon the age distribution of firms in the Fortune sample. Holding all other variables at their mean values, we then vary the value of the ECM across all the possible values this variable could assume. The result is three different series of values, one for each of our conditions. These series of values are plotted to form the basis of comparison of the interaction effect between the error correction mechanism and age on change in prestige.

|INSERT FIGURE 1 APPROXIMATELY HERE|

The prototypical plot effectively illustrates that old firms converge much less quickly to equilibrium than do younger firms for an equivalent displacement from equilibrium as represented by the size of the error correction mechanism. Thus we observe that for large positive and large negative displacements from equilibrium, the young firms experience much larger change in prestige, both positive and negative, and that older firms experience a much smaller change in prestige in situations of disequilibrium.

The second prototypical plot is calculated in the same manner as is the first prototypical plot, using the equation that represents model III. Once again, we obtain values for the change in prestige across the three age conditions: young, medium, and old. Values for variables other than age of the firm and change in expectations of future performance are held constant at their mean value. The value for changes in expectations of future performance is varied across all its possible values, based upon the data in our sample. Results for the second prototypical plot appear in Figure 2.

|INSERT FIGURE 2 APPROXIMATELY HERE|

Figure 2 illustrates the relationship between changes in expectations of future performance and changes in prestige for young, medium and old firms. We observe that the prestige of young firms appears to be much more sensitive to changes in expectations of future performance than is the prestige of older firms. Specifically, we observe that for a given change in expectations of future performance, young firms will experience a much greater change in prestige than will old firms. Thus, for example, for a large positive change in the expectations of future performance, we expect that old firms will experience a much smaller augmentation in prestige than will young firms. Equally, for a large negative change in the expectation of future performance, we expect that old firms will experience a much smaller augmentation in prestige than will young firms.

Executive Audiences

Models IV, V, and VI use executives' prestige score as the dependent variable. We observe that excess returns, growth, industry age, and age of the firm are all statistically significant and positively related to changes in executives' prestige rank. We also observe that the change in Tobin's q parameter is positive and statistically significant. The sign on the parameter estimate of the error correction mechanism is negative and statistically significant. The sign on the parameter estimate for the interaction term (Change in Tobin's q * Age of the firm) is negative and statistically significant. The sign on the parameter estimate for the second interaction term (ECM*age) is positive and statistically significant. These results replicate the findings in table 5, model III, suggesting that age modifies the effect of expectations about future performance on changes in executives' prestige rank.

Analyst Audiences

The parameter estimates for models VII, VIII, and IX, the models that use analysts' rank as the dependent variable, yield very different results. The sign on the parameter estimates for excess returns, growth, age of the firm and change in Tobin's q are all positive and statistically significant. This is the extent of the similarities between the parameter estimates for these latter three models and the former six models. Specifically, the industry age, the error correction mechanism, and the interaction terms are not statistically significant when we use analysts' change in prestige rank as the dependent variable.

These results suggest that analysts' prestige rankings are based upon expectations of future performance and the age of the firm and the fact that analyst audiences use different firm characteristics when evaluating and attributing prestige to a firm than do executive publics.

Specifically, expectations about the future performance of a firm will have a greater impact on prestige for analyst publics relative to executive publics. We present this finding in Figure 3.

|INSERT FIGURE 3 APPROXIMATELY HERE|

As illustrated in Figure 3, analyst audiences are much more sensitive to changes in expectations of future performance than are executive audiences. This is evidenced by the greater fluctuation in prestige for analysts as compared to executives. In fact, whereas analysts' prestige evaluations vary over a large range, those of executives vary almost negligibly over a similar range of values for expectations of future performance. As such, executives' social valuations of firm prestige appear to be insulated to a great extent from quality fluctuations.

An alternate explanation for our findings with respect to the Tobin's *q* * age of the firm interaction term is that greater variation exists for the Tobin's *q* variable among younger firms than among older firms and that this difference in variation is what is driving our results. To address this concern we dissect our data into three sub-groups that represent young, medium and old firms respectively. We run descriptive statistics for the Tobin's *q* variable for each sub-group. The results are presented in Table 7. We find no significant difference in the range nor in the distribution of the Tobin's *q* variable across the three sub-groups and we therefore rule out the possibility that a bias in the Tobin's *q* variable is responsible for our findings with respect to the interaction term.

|INSTERT TABLE 7 APPROXIMATELY HERE|

DISCUSSION AND CONCLUSION

The primary objective of our research is to demonstrate that prestige processes operate independently of the signaling mechanism proposed in economic models of reputation. Although other researchers have endeavored to decouple quality from prestige, the question has always remained whether the observed effects might not be attributed to unobserved heterogeneity. In order to avoid the potential criticism that factors other than expectations of performance might be highly correlated with quality, we demonstrate that there are conditions under which changes in expectations of future performance do not affect prestige. Specifically, we demonstrate in Figure 2 that old firms experience much smaller changes in prestige for a given change in expectations of future performance relative to young firms. In illustrating that age modifies the relationship between expectations of future performance and prestige, we present an example of a situation where the two variables are decoupled. In so doing, we avoid the problem of heterogeneity and provide a test that prestige processes may operate independently of the signaling mechanism.

Previous models of reputation and of status assume that prestige appraisals will essentially be the same across different audiences. We separate the dependent variable, prestige, into evaluations arrived at by analyst audiences and by executive audiences. We examine the relationship, between our independent variables and prestige. In particular, we focus on the relationship between expectations of the future performance of the firm, as predicted by Tobin's *q*, and prestige. We find that expectations of future performance is significant for the analyst audience in the evaluation of firm prestige. In contrast, when the same relationship is tested for the executive audience, we find that expectations of future performance is less significant in this group's evaluation of firm prestige. Specifically, the effect of expectations of future performance on prestige is modified by the age of the firm. This result that prestige dynamics vary by audiences reinforces the finding in the previous paragraph and confirms that the prestige process is not only the product of economic signaling but also that it is inherently social.

The benefits of high prestige are outlined earlier in the paper, but they merit remention here. To the extent that a firm can obtain high prestige from analysts, it will enjoy access to capital at better rates. Similarly, in so far as a firm obtains a high positive evaluation from executives, the firm will have an easier time attracting better quality members to its board of directors. Higher prestige with executives may also lead to alliances with prominent others (Higgins and Gulati, 1999). As we demonstrate, prestige evaluations among executives is 'sticky' or taken-for-granted. The consequences of this are both positive and negative depending on the age of the firm. For old firms with low prestige the consequences are negative. We predict that firms in such a situation should have a difficult time because few if any prominent firms will wish to partner with them, regardless of whether their quality is high. Unfortunately, an improvement in quality does not translate into an increase in prestige and therefore these firms will not be able to attract high prominent partners. Ironically, firms that find themselves in such a predicament might be better off if their legitimacy is explicitly questioned through an event such as an attempted takeover. Alternatively, such firms could move to a new playing field through a radical transformation. Monsanto represents an example of the latter strategy. In the 1980's, Monsanto transformed itself from that of a chemical company to a life sciences company. This overhaul represented a major transformation such that it was almost impossible for audiences to identify the old firm in the new organization. Based upon our findings we would conjecture that the consequence of the transformation with respect to prestige processes was that quality became critical for the new firm's prestige with respect to executive audiences.

Failure to transform the firm could lead to a situation similar to the one in which Union Carbide found itself. Despite its continuous growth in terms of Tobin's *q*, executives did not re-evaluate Union Carbide because of the taken for granted nature of the firm's underlying quality. The firm undertook several market value enhancing activities such as attempts at cutting costs, yet executive audiences failed to recognize these changes.

In contrast to situations where old firms suffer from poor prestige, there are old firms that enjoy the benefits of high prestige. Obviously, a major reorganization would not be recommended in this case. Companies such as DuPont and Dow Chemical, because their prestige has been institutionalized, would revert to the situation of young firms where their prestige would be tightly coupled to their expectations of performance were they to decide to radically transform themselves. Although we speculate as to what might occur in terms of the prestige process to firms that undergo a major transformation, further research is necessary to examine these conjectures more closely.

With financial audiences, age is not as important. Prestige is contingent upon expectations of future financial performance. Consider the situation in which quality falls. Prestige with respect to financial audiences will also fall. It will not be possible to use prestige for protection. One option to rebuild the prestige that was lost with financial audiences, is to rely on the prestige resident with executives. Old firms with high prestige in executive audiences clearly have an advantage in such situations. In so far as access to superior resources contributes to better performance, one would expect that older firms that are highly regarded by executive audiences would have a much easier time accessing these necessary resources and hence their performance would be much more likely to improve.

We believe that the findings in this study are equally important for practitioners. Following the work of Podolny (1993), we know that firms materially benefit from their high prestige and hence prestige should be a variable of interest to managers. Our results suggest that managers of young organizations should not take their prestige as a permanent feature of their organization. As soon as the market expectation of their performance declines, their prestige follows quickly. IBM learned this lesson the hard way dropping from the first to the 157th position in the prestige table following its significant declines in expectations of performance. In contrast, managers of old firms can be assured of their organizations' high prestige position. Even when markets value them significantly less, the benefits of prestige will continue to accrue to them. Those managers who lead low prestige old companies should be aware that relatively little can be done to improve their prestige by increasing their market value. In contrast, they should try to boost their prestige through other means. Our analysis of the error correction mechanism shows that old firms can actually sustain prestige levels that are out of equilibrium with their quality for prolonged periods of time. Thus, managers of low prestige old firms can substantially affect their organization's prestige by non-performance means.

There are several future avenues for research in addition to the one mentioned above that follow on the findings in this paper. First, there is a need to examine the empirical findings in this paper from a more qualitative perspective. Specifically, it would be insightful to understand the taken for granted finding through interviews with executives. Second, it would be interesting to examine what effect takeovers have on the findings in this paper. Does an attempted takeover of a high prestige firm lead to a loss of its taken-for-granted prestige? In essence does a takeover attempt lead to the delegitimization of the organization as its managers' right to own and exploit assets is called into question?

This model has shown that although quality is related to prestige, that quality may also decoupled from prestige. Specifically, age modifies the relationship between expectations of future performance and prestige. In so far as we demonstrate the decoupling of these two concepts, we have shown that prestige is not only a product of signals about the underlying quality of the firm, but also that it is the consequence of an inherently social process. In this way both economic and sociological literatures complement one another and further our understanding of this complex and important process.

Table 1
Descriptive statistics of the dependent and independent variabls. (n=1928)

Variable	Description	Mean	Std. Dev.	Min.	Max.
Change in Prestige (overall)	Change in prestige from period t-1 to period t for all audiences	-0.0221	0.3938	-1.98	1.76
Change in Prestige (analysts)	Change in prestige from period t-1 to period t for analysts	-0.0218	0.5216	-2.17	2.42
Change in Prestige (executives)	Change in prestige from period t-1 to period t for executives	-0.0201	0.4186	-2.33	2.59
PERFORMANCE					
Excess Returns	3-year, industry weighted excess returns to shareholders	-0.7126	16.3700	-82.66	194.14
Growth	3-year, industry weighted cumulative average growth rate in sales	0.0639	0.0924	-0.38	0.63
Change in Tobin's *q*	Change in Tobin's *q* from period t-1 to period t	0.1899	0.1743	-0.70	0.69
AGE					
Age of Firm	Natural logarithm of the age of the firm	4.3088	0.4905	2.56	5.26
Industry Age	Natural logarithm of the age of the industry	4.8441	0.2326	3.36	5.26
Error Correction Mechanism					
ECM (overall)	Error correction mechanism for all audiences	-0.2646	0.7796	-3.34	2.23
ECM (executives)	Error correction mechanism for executives	0.1527	0.8442	-3.64	2.51
ECM (analysts)	Error correction mechanism for analysts	0.1489	0.8357	-3.19	2.08
Interactions					
ECM * Age (overall)	ECM * age of the firm interaction for all audiences	-1.0909	3.3629	-15.29	9.64
ECM * Age (executives)	ECM * age of the firm interaction for exeuctives	0.7380	3.6718	-15.16	12.51
ECM * Age (analysts)	ECM * age of the firm interaction for analysts	0.6971	3.5936	-14.64	9.96
Change in Tobin's q * Age	Change in Tobin'q * age of the firm	0.0859	0.7428	-3.29	3.32

Table 2
Correlation Matrix of dependent and independent variables for overall scores. ***(n = 1928)***

	Change in Prestige	Excess Returns	Growth	Industry Age	Age of Firm	Change in Tobin's q	Error Correction Mechanism (ECM)	ECM * Age	Change in Tobin's q * Age
Change in Prestige	1.0000								
Excess Returns	0.2395	1.0000							
Growth	-0.0072	0.1293	1.0000						
Industry Age	-0.0131	0.0435	0.0027	1.0000					
Age of Firm	0.0099	-0.0304	-0.1127	0.2618	1.0000				
Change in Tobin's q	0.1406	0.2447	-0.0828	0.0477	0.0484	1.0000			
Error Correction Mechanism (ECM)	-0.1431	0.1571	0.2464	-0.0092	0.1295	0.0031	1.0000		
ECM * Age	-0.1387	0.1549	0.2340	-0.0092	0.1000	0.0053	0.9931	1.0000	
Change in Tobin's q * Age	0.1337	0.2472	-0.0812	0.0518	0.0563	0.9916	0.0088	0.0104	1.0000

Table 3
Correlation Matrix of dependent and independent variables for executives' scores. ***(n = 1928)***

	Change in Prestige	Excess Returns	Growth	Industry Age	Age of Firm	Change in Tobin's *q*	Error Correction Mechanism (ECM)	ECM * Age	Change in Tobin's *q* * Age
Change in Prestige	1.0000								
Excess Returns	0.2029	1.0000							
Growth	-0.0002	0.1293	1.0000						
Industry Age	-0.0225	0.0435	0.0027	1.0000					
Age of Firm	0.0077	-0.0304	-0.1127	0.2618	1.0000				
Change in Tobin's *q*	0.0981	0.2447	-0.0828	0.0477	0.0484	1.0000			
Error Correction Mechanism (ECM)	-0.2153	0.1400	0.2576	0.0257	0.1928	0.0004	1.0000		
ECM * Age	-0.2063	0.1379	0.2430	0.0410	0.2113	0.0050	0.9935	1.0000	
Change in Tobin's *q* * Age	0.0914	0.2472	-0.0812	0.0518	0.0563	0.9916	0.0066	0.0114	1.0000

Table 4
Correlation Matrix of dependent and independent variables for analysts' scores. ***(n = 1928)***

	Change in Prestige	Excess Returns	Growth	Industry Age	Age of Firm	Change in Tobin's q	Error Correction Mechanism (ECM)	ECM * Age	Change in Tobin's q * Age
Change in Prestige	1.0000								
Excess Returns	0.2204	1.0000							
Growth	-0.0246	0.1293	1.0000						
Industry Age	0.0179	0.0435	0.0027	1.0000					
Age of Firm	0.0303	-0.0304	-0.1127	0.2618	1.0000				
Change in Tobin's q	0.1742	0.2447	-0.0828	0.0477	0.0484	1.0000			
Error Correction Mechanism (ECM)	-0.3148	0.1571	0.3021	-0.0059	0.1349	-0.0133	1.0000		
ECM * Age	-0.3116	0.1549	0.2863	0.0105	0.1633	-0.0097	0.9933	1.0000	
Change in Tobin's q * Age	0.1700	0.2472	-0.0812	0.0518	0.0563	0.9916	-0.0091	-0.0059	1.0000

TABLE 5

Random effects models of expectations of financial performance, age and interaction variables on change in prestige for Fortune firms over the period 1984 - 1996. These results are obtained for two different publics, Executives and Analysts. (standard errors appear in parentheses)

Variable	**Aggregate Model I**	**Aggregate Model II**	**Aggregate Model III**	**Executives Model IV**	**Executives Model V**	**Executives Model VI**	**Analysts Model VII**	**Analysts Model VIII**	**Analysts Model IX**
Excess Returns	0.006•••	0.006•••	0.006•••	0.006•••	0.006•••	0.006•••	0.008•••	0.008•••	0.008•••
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Growth	0.153	0.153	0.174•	0.340••	0.341••	0.362••	0.508•••	0.500•••	0.492•••
	(0.102)	(0.102)	(0.103)	(0.108)	(0.108)	(0.108)	(0.126)	(0.124)	(0.126)
Industry Age	-0.120••	-0.118••	-0.122••	-0.137••	-0.137••	-0.146••	-0.069	-0.067	-0.064
	(0.046)	(0.046)	(0.046)	(0.048)	(0.048)	(0.049)	(0.051)	(0.050)	(0.051)
Age of Firm	0.050••	0.052••	0.063••	0.088•••	0.090•••	0.080••	0.115•••	0.115•••	0.119•••
	(0.023)	(0.023)	(0.024)	(0.025)	(0.025)	(0.025)	(0.025)	(0.025)	(0.025)
Change in Tobin's q	0.169•••	0.963••	0.929••	0.087•	0.850••	0.757•	0.320•••	0.897•	0.911•
	(0.050)	(0.376)	(0.376)	(0.053)	(0.393)	(0.394)	(0.063)	(0.471)	(0.471)
Error Correction Mechanism (ECM_{t-1})	-0.147•••	-0.145•••	-0.35••	-0.207•••	-0.207•••	-0.547•••	-0.276•••	-0.269•••	-0.189
	(0.014)	(0.014)	(0.116)	(0.014)	(0.014)	(0.115)	(0.015)	(0.014)	(0.014)
Change in Tobin's q * Age of firm		-0.188••	-0.181••		-0.181••	-0.161•		-0.136	-0.139
		(0.088)	(0.088)		(0.092)	(0.092)		(0.110)	(0.111)
ECM_{t-1} * Age of firm			0.049•			0.079••			-0.019
			(0.027)			(0.0267)			(0.028)
Constant	0.294	0.277	0.246	0.273	0.263	0.340	-0.177	-0.189	-0.217
	(0.221)	(0.220)	(0.221)	(0.234)	(0.235)	(0.237)	(0.244)	(0.240)	(0.243)
R^2 overall	0.0952	0.0975	0.0996	0.1061	0.1077	0.1121	0.1984	0.1993	0.1995
Number of observations	1928	1928	1928	1928	1928	1928	1928	1928	1928
Number of groups	256	256	256	256	256	256	256	256	256
Wald χ^2	249.18	253.12	257.43	323.66	328.64	340.33	518.77	510.51	511.12

• $p < 0.100$, •• $p < 0.050$, ••• $p < 0.001$

Table 6

Descriptive statistics for Tobin's q variable across three sub-groups of the data representing young, medium and old firms respectively.

Sub-Group	Mean	Standard Deviation	Min.	Max.
Young	0.011	0.191	-0.649	0.689
Medium	0.018	0.165	-0.587	0.681
Old	0.026	0.169	-0.699	0.696

FIGURE 1

Prototypical fitted lines for change in prestige plotted against disequilibrium$_{t-1}$ (error correction mechanism), obtained by varying disequilibrium$_{t-1}$ over appropriate ranges for young, medium, and old firms, while retaining all other independent variables constant at their mean values (Model III).

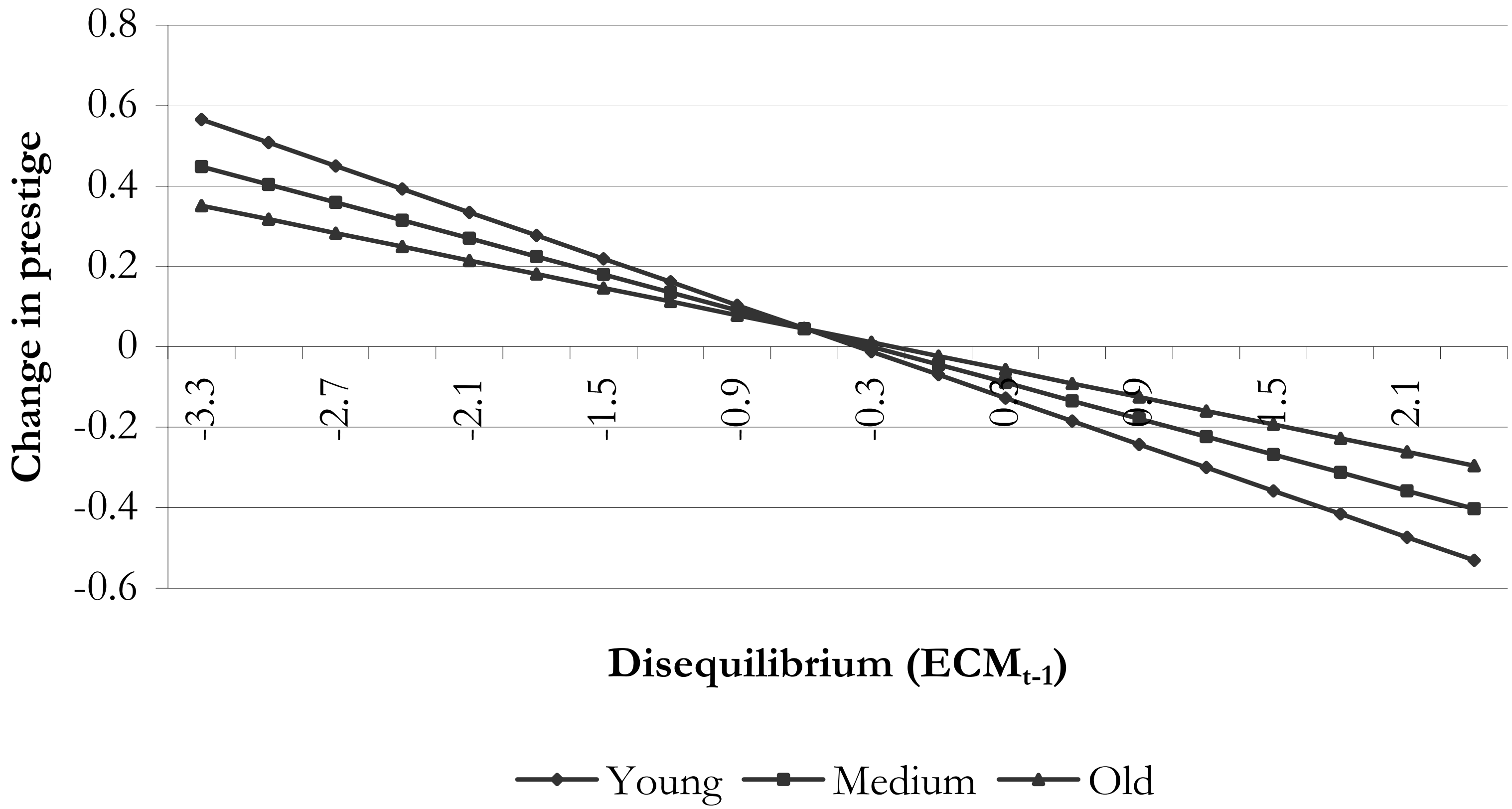


FIGURE 2

Prototypical fitted lines for change in prestige plotted against changes in expectations of future performance (Tobin's q) obtained by varying changes in expectations of future performance over appropriate ranges for young, medium, and old firms, while retaining all other independent variables constant at their mean values (Model III).

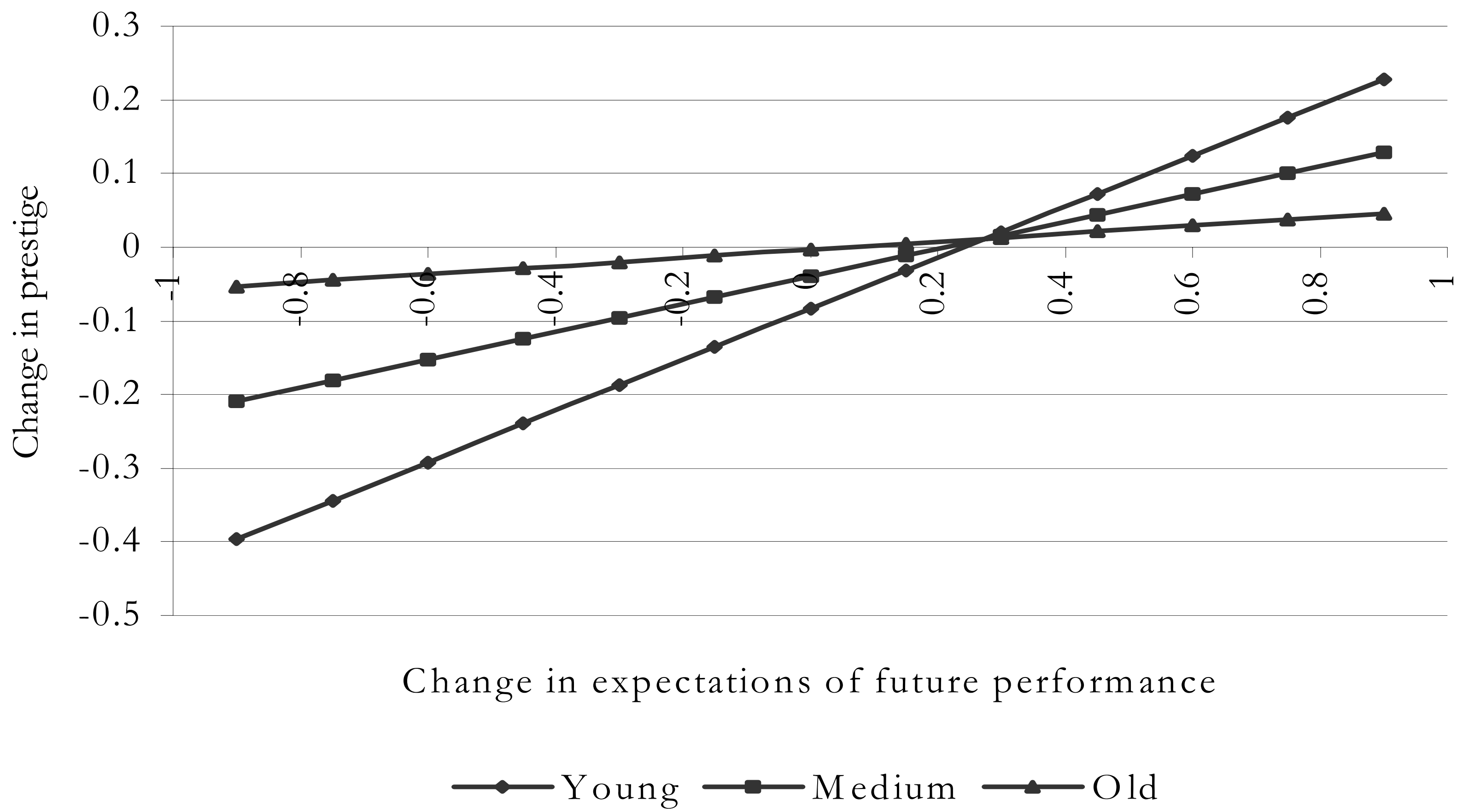
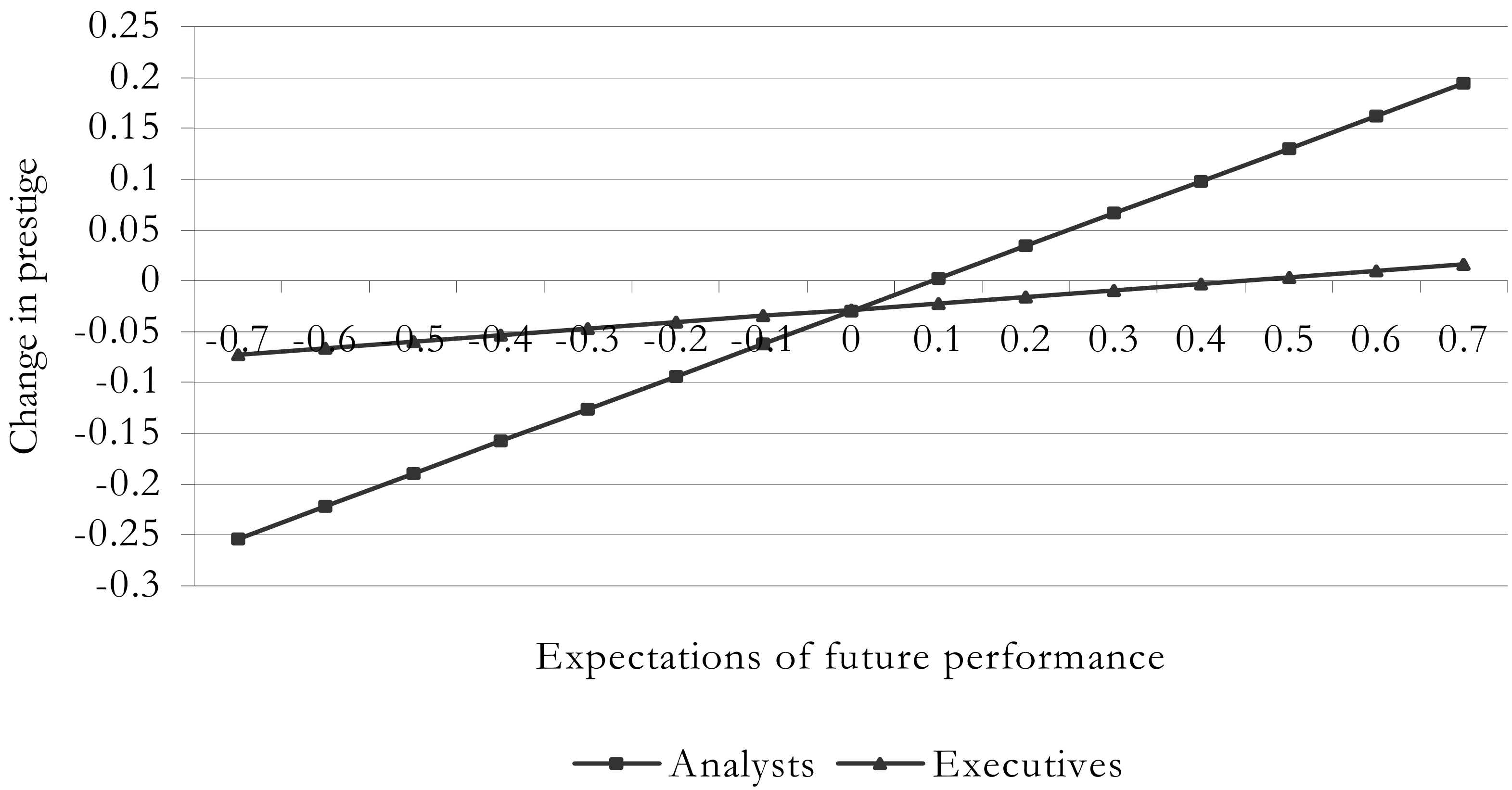


FIGURE 3

Prototypical fitted lines for change in prestige plotted against changes in expectations of future performance (Tobin's *q*) obtained by varying changes in expectations of future performance over appropriate ranges for analyst publics (model VII) and executive publics (model VI) while retaining all other independent variables constant at their mean values.



REFERENCES

Abrahamson, E., and C. Fombrun
1994 "Macrocultures: Determinants and consequences." Academy of Management Review, 19: 728-755.

Affifi, A. A., and V. Clark
1996 Computer-aided Multivariate Analysis, 3rd ed. London: Chapman and Hall.

Akerlof, G.
1970 "The Market for 'Lemons': Qualitative Uncertainty and the Market Mechanism." Quarterly Journal of Economics 84:488-500.

Arrow, K. J., and G. Debreu
1954 "Existence of an equilibrium for a competitive economy." Econometrica, 22: 265 – 290.

Baum, J. A. C., and C. Oliver
1991 "Institutional linkages and organizational mortality." Administrative Science Quarterly, 42: 304-338. 1992 "Institutional embeddedness and the dynamics of organizational populations." American Sociological Review, 57: 540-559.

Beatty, R. and J. Ritter
1986 "Investment banking, reputation, and the underpricing of initial public offerings." Journal of Financial Economics: 213-232.

Benjamin, B. A., and J. M. Podolny
1999 "Status, quality, and social order in the California wine industry." Administrative Science Quarterly, 44: 463-489.

Berger, P. L., and T. Luckmann
1966 The Social Construction of Reality: A Treatise in the Sociology of Knowledge. New York: Doubleday.

Blau, P. M.
1963 The Dynamics of Bureaucracy, 2nd ed. Chicago: University of Chicago Press. 1964 Exchange and Power in Social Life, 2nd ed. (1986). New Brunswick, NJ: Transaction.

Breiger, R.
1995 "Social structure and the phenomenology of attainment." Annual Review of Sociology, 58: 703-722.

Coleman, J. S.
1990 Foundations of Social Theory. Cambridge, MA: The Belknap Press of Harvard University Press.

Cyert, R. M. and J. G. March.
1963 A Beahvioral Theory of the Firm. Englewood Cliffs, NJ: Prentice-Hall.

Dasgupta, P.
1988 "Trust as a commodity." In D. Gambetta, Trust: Making and Breaking Cooperative Relations: 49-72. London: Basil Blackwell.

DiMaggio, P. and W. Powell
1983 "The iron cage revisited: institutional isomorphism and collective rationality in organizational fields." American Sociological Review, 48: 147-160.

Eccles, R.B., and D. B. Crane
1988 Doing Deals: Investment Banks at Work. Boston: Harvard Business School Press.

Ellul, J.
1964 The Technological Society. New York: Knopf.

Engle, R. F., and C. W. J. Granger
1987 "Co-integration and error correction: Representation, estimation, and testing." Econometrica, 55: 251 – 276.

Fama, E. F.
1965 "The behavior of stock market prices." Journal of Business, 38: 34-105.

Fligstein, N.
1990 The Transformation of Corporate Control. Cambridge: Harvard University Press.
1996 "Markets as politics: A political-cultural approach to the problem of economic institutions." American Sociological Review, 61: 656-673.

Fombrun, C. J.
1996 Reputation: Realizing Value from the Corporate Image. Boston, MA: Harvard Business School Press.

Fombrun, C., and M. Shanley
1990 "What's in a name? Reputation building and corporate strategy." Academy of Management Journal, 33: 233-258.

Frank, R. H.
1985 Choosing the Right Pond: Human Behavior and the Quest for Status. New York: Oxford University Press.

Frywell, G. E., and J. Wang
1994 "The Forutne Corporate 'Reputation' Index: Reputation for What?" Journal of Management, 20: 1 – 14.

Goode, W. J.
1978 The Celebration of Heroes: Prestige as a Social Control System. Berkeley, CA: University of California Press

Granger, C. and P. Newbold
1974 "Spurious Regressions in Econometrics" *Journal of Econometrics*. 2:111-120.

Hambrick, D., M. A. Geletkanycz, and J. W. Fredrickson
1993 "Top executive commitment to the status quo: Some tests of its determinants." Strategic Management Journal, 14: 401-418.

Hannan, M., and J. Freeman
1989 Organizational Ecology. Cambridge, MA: Harvard University Press.

Higgins, M. and R. Gulati
1999 "The effect of IPO team ties on investment bank affiliation and IPO success." Working Paper 00-025. Harvard Business School.

Levinthal, D. A.
1991 "Random walks and organizational mortality." Administrative Science Quarterly, 36: 397 – 240.

Lewis, L.S.
1964 "Class and the perception of class." Social Forces, 42: 336-340.

McCleary, R., and R. A. Hay, Jr.
1980 Applied Time Series Analysis. Beverly Hills: Sage Publications.

McGahan, A. M.
1999 "The performance of US corporations: 1981 - 1994." The Journal of Industrial Economics, 47: 273-298.

McGahan, A. M., and M. E. Porter
1997 "How much does industry matter, really?" Strategic Management Journal, 18: 15-31.

Merton, R.K.
1973 The Sociology of Science. Chicago, IL: The University of Chicago Press.

Meyer, J.W. and B. Rowan
1977 "Institutionalized organizations: formal structure as myth and ceremony," American Journal of Sociology, 83: 340-363.

Mikhail, M.B., B. R. Walther, and R. H. Willis
1998 "Does forecast accuracy matter to security analysts?" The Accounting Review, 74: 185-200.

Mills, C. W.
1956 The Power Elite. New York: Oxford University Press.

Nelson, P.
1974 "Advertising as information." Journal of Political Economy, 78: 729–754.

Nelson, R. R., and S. G. Winter
1982 An Evoluationary Theory of Economic Change. Cambridge, MA: Belknap.

Ostrom, C. W.
1990 Time Series Analysis: Regression Techniques, 2nd ed. Newbury Park: Sage Publications.

Pesaran, H. and Y. Shin
1996 "Cointegration and speed of convergence to equilibrium." Journal of Econometrics, 71: 117-143.

Petersen, T. and K. W. Koput
1991 "Density dependence in organizational mortality: Legitimacy or unobserved heterogeneity." American Sociological Review, 56: 399-409.

Podolny, J.
1993 "A status-based model of market competition." American Journal of Sociology, 98: 829-872. 1994 "Market uncertainty and the social character of economic exchange." Administrative Science Quarterly, 39: 458-483.

Porac, J. F., T. Howard, F. Wilson, D. Patton and A. Kanfer
1995 "Rivalry and the industry model of Scottish knitwear producers." Administrative Science Quarterly, 40: 397-417.

Powell, W. W.
1995 "Total quality management as competitive advantage: A review and empirical study" Strategic Management Journal, 16: 15 –37.

Powell, W. W., and P. DiMaggio (eds.)
1991 The New Institutionalism in Organizational Analysis. Chicago: University of Chicago Press.

Rao, H.
1994 "The social construction of reputation: Certification contests, legitimation, and the survival of organizations in the american automobile industry: 1895 – 1912." Strategic Management Journal, 15: 29-44.

Scott, W. R.
1995 Institutions and Organizations. Thousand Oaks, CA: Sage Publications

Selznick, P.
1949 TVA and the Grass Roots. Berkley: University of California Press.

Shapiro, C.
1983 "Premiums for high quality products as returns to reputation." Quarterly Journal of Economics, 98: 659-679.

Shils, E.
1968 “Deference.” In E. Shils, (ed.), Center and Periphery: Essays in Macrosociology: 276-303. Chicago: University of Chicago Press.

Singh, J. V., D. J. Tucker, and R. J. House
1986 “Organizational legitimacy and the liability of newness.” Administrative Science Quarterly, 31: 171-193.

Spence, A. M.
1974 Market Signaling: Informational Transfer in Hiring and Related Screening Processes. Cambridge, MA.: Harvard University Press.

Stigler, G.J.
1962 “Information in the labor market.” Journal of Political Economy, 70: 49-73.

Stinchcombe, A. L.
1965 “Social structure and organizations.” In J. G. March (ed.), Handbook of Organizations: 142-193. Chicago: Rand McNally.

Stuart, T. E., H. Hoang, and R. C. Hybels
1999 “Interorganizational endorsements and the performance of entrepreneurial ventures.” Administrative Science Quarterly, 44: 315-349.

Taninecz, G.
1997 “Numbers and much more: Plant leaders and corporate manufacturing executives assess their operations.” Industry Week, December 1, 1997: 14-15.

Tolbert, P. S. and L.G. Zucker
1983 “Institutional sources of change in the formal structure of organizations: The diffusion of civil service reform, 1880 – 1935.” Administrative Science Quarterly, 28: 22-39.

Weber, M.
1914 “The economy and the arena of normative and de facto powers.” In G. Roth and C. Wittich (eds.) (1968), Economy and Society: 311-398. Berkeley, CA: University of California Press.

Wegener, B.
1990 “Equity, relative deprivation, and the value consensus paradox. Social Justice Research, 4: 66-86. 1992 “Concepts and measurement of prestige.” Annual Review of Sociology, 18: 253-280.

Weigelt, K. and C. Camerer
1988 “Reputation and corporate strategy. A review of recent theory and applications.” Strategic Management Journal, 5: 171-180.

Westphal, J. D., R. Gualti and S. M. Shortell
1997 "Customization or Conformity? An institutional and Network Perspective on the Content and Consequences of TQM Adoption." Administrative Science Quarerly, 42:366-395.

White, H. C.
1981 "Where do markets come from?" American Journal of Sociology, 87: 517-547.

Wiley, M. and M. Zald
1968 "The growth and transformation of educational accrediting agencies: an exploratory study of the social control of institutions." Sociology of Education, 41: 36-56.

Zucker, L.G.
1977 "The role of institutionalization in cultural persistence." American Sociological Review, 42: 726-743.

Zuckerman, E. W.
1999 "The categorical imperative: Securities analysts and the illegitimacy discount." American Journal of Sociology, 104: 1398-1438.