Firm Strategy, Societal Norms and Cognition: The American Auto Industry from 1968 to 2008

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Through a longitudinal case analytic framework combining qualitative and quantitative methods, we attempt to bridge the gap between the institutional effects of industry regulation and societal norms on firm cognitions and their resultant strategies. We suggest that while regulation has significant effects on firms' strategic behaviors, the norms and preferences of greater society have a strong moderating effect on firm strategy. We argue when regulations oppose the firms' perceptions social norms and cognitions, they will resist these regulations, but when regulations are in line with the firms' perceptions of social norms and cognitions, firms will seek to exceed regulatory requirements.

INTRODUCTION

The strategy literature suggests that cognitive biases and the effects of top management's cognitive maps on the process of strategic decision making are primary drivers of firm behavior (Tripsas & Gavetti, 2000), but a number of scholars also suggest that external institutions affect the strategic choices firms (e.g., Crossland & Hambrick, 2011; Jonsson & Regnér, 2009). Despite these parallel advances in strategy theory, research integrating the externally oriented views of institutionalism with the internally directed work of the cognitive strategy literature has been limited.

This paper aims to bridge the gap in the literature between institutionalism and the strategy cognitive literature (Greenwood, Oliver, Suddaby, & Sahlin, 2008) through an analysis of the relationship between the normative and cognitive bases of legitimacy of the Big Three American automakers (Greenwood et al., 2008). In a longitudinal study using qualitative and quantitative methods, we examine how the regulative forces affecting the automotive firms interact with societal norms, and the resulting strategic changes made by the firm. Our results indicate firm behavior is not only dependent upon regulations, but is also strongly moderated by market demands. In doing so, we provide some much needed empirical data to expand the literature on institutional and strategic norms and cognitions, and their real world interactions.

We argue that changes in societal norms and cognitions alter environmental demands upon the firm, but the firm will react primarily to its most salient stakeholder: in this case, the market. Our study suggests that while regulations may compel a firm to act in a particular manner, societal norms and cognitions, as expressed through consumer decisions, may compel the firm to either actively resist or to exceed what is required. So while regulations provide a basis for action, market factors determine the spirit of compliance.

THEORETICAL FRAMEWORK

Cognition and Strategy

Cognition is defined as the mental maps and the selective perceptions of top management (Reger & Palmer, 1996) which provide the belief systems that filter external information and color executive perceptions of which issues are most salient to the firms. The quality and characteristics of these mental maps heavily influence the firms' strategic actions (Dutton & Duncan, 1987). Several organizational factors are known to change the scope of interpretation of this information by executives, including the core beliefs and identities delineating relationships between the organization and its environment (Bettis & Prahalad, 1995), past experience (Miller, 1993), and the consistency of the social role expectations placed on executives (Merton, 1976).

Cognitive frameworks affect strategic reaction times by moderating executives' abilities to notice competitor actions and the ability to interpret these actions as something that needs to be responded to (Marcel, Barr, & Duhaime, 2010). Once a firm has noticed competitor actions that require action, cognitive frameworks direct attention (Kahneman, 1973), to issues and information perceived as affecting organizational outcomes. Cognitive frameworks have been suggested to focus almost exclusively on information believed to have been significant in the past, and to exclude other information (Thomas, Sussman, & Henderson, 2001). Existing frameworks are used as long as these frameworks provide a means to function within their environment (Louis & Sutton, 1991), leading to environmental scanning principally on information perceived as strategically important in the past. (Gioia & Thomas, 1996).

Institutions and Strategy

Institutional literature proposes that strategic choices are driven by industry conditions, firm capabilities, and formal and informal constraints of the institutional framework in which the firm exists (e.g. Bruton, Dess, & Janney, 2007; Lee & Oh, 2007). Organizational existence depends upon obtaining and maintaining the approval of society, which the institutional literature refers to as legitimacy. Failure to meet the expectations of society may result in public pressure or use of the legal system to force the organization to improve its performance (Preston & Post, 1975), so maintaining at least the appearance of compliance with regulation is one aspect of maintaining firm legitimacy (Dowling & Pfeffer, 1975).

Institutionalism proposes that changes in regulations apply coercive pressures which force organizations to alter their structures and strategies (P. J. DiMaggio & Powell, 1983; Meyer & Rowan, 1977), and increased external coercion results in an increased likelihood that firms will comply with institutional pressures and adopt a prescribed form or structure (Jennings and Zandbergen(1995). Regulatory pressures are one of the tools society may use to attempt to influence what an organization must do and also indicate what society thinks is proper, but regulations are blunt instruments, often falling short of their intended results, so. the threat to firm legitimacy through regulation may not be enough to steer a firm's strategic direction.

Despite their strategic interactions, the conceptions of cognition in institutional literature and strategy literature appear to be disconnected, and it is in conceptually connecting the two concepts and providing empirical evidence of this connection that this paper contributes to the literature. Institutional cognition is a mediator between the environment and firm response, while strategic cognition is the primary driver in strategic planning and actions. Cognition, as the symbolic representations of institutionalism, the decisions of market stakeholders, or the selective perceptions of top management, appears to be the driving force behind firm strategy. The cognitions of the two disciplines seem to have little in common, but cognitive maps and other forms of sense-making are a precursor to the firm's understanding of the environment.

The existence of regulations implies that firms may act in ways which violate societal norms (Grief, 1997), and numerous examples of non-compliant firms have been documented and studied (e.g., Connelly, 2007). That firms would seek to either evade compliance or to put out the least amount of effort necessary to meet regulations implies that the firms feel that their current strategy is still in line with their environment, or enough to survive in spite of penalties for violating these regulations. From the firm management's view, maintaining firm strategy as a whole, while giving nominal efforts to meet such regulations, may still be in line with the norms of society in general and therefore remain profitable. In such cases, an organization may be forced to comply with regulations, but the cognitive frame of the firm remains the same, and firm resistance is likely to continue.

In comparison, the normative and cognitive bases of legitimacy are built on the expectations of external stakeholders, such as professional associations, stockholders, and greater society. Normative legitimacy depends upon acquiescence with accepted practices as outlined by social obligation or professionalization, while the cognitive basis of legitimacy is comprised of the cultural symbols and rules as well as the frameworks which aid in the interpretation and understanding of the environment (P. DiMaggio, 1997; Scott, 2001). Both normative and cognitive bases for legitimacy therefore depend upon the mutual understanding between the firm and society of what is accepted and appropriate, as opposed to what is allowed by regulations.

So it seems to be plausible that a firm in a changing regulatory environment may be caught between conflicting bases of legitimacy with two choices of action: continue to serve its customers in a way that has been successful in the past, and is in line with its current mindset, with minimal compliance with regulations, or change its behavior and practices to comply with or exceed new regulations to maintain or win greater market share by appealing to the emerging norms and societal cognitions as indicated by new regulations. Completely ignoring regulations is not a viable solution, as it could result in sanction by regulatory institutions and other stakeholders (Baron, 1995), but to ignore market stakeholders could result in the end of the firm as resources are cut off (Preston & Post, 1975).

Strategy research indicates that firms tend to fall back on familiar frameworks in new situations (Louis & Sutton, 1991). Thus, a lack of a solid interpretation of the law and a tendency to depend upon past experience to interpret current environments leads firms to repeat past actions in unfamiliar environments. If past strategic actions continue to profit in the face of changing regulation, a firm may be caught in a precarious situation: Continuing strategies already in place could lead to sanctions, yet continued success encourages the firm to proceed with strategic actions that had proven successful in the past. Caught between critical components of legitimacy, a firm with conflicting regulatory and market demands could be expected to attempt to follow the legitimacy base most directly affecting its survival:, the market stakeholder.

> *Hypothesis 1: When firms find that their own norms and cognitions are in line with societal norms and cognitions, but face increasing regulatory pressure, they will resist said regulations to comply with societal norms and cognitions.*

Several studies have suggested that coercive forces may be less important in encouraging a firm to conform than normative forces, and that regulatory actions often effect greater changes through the normative and cognitive processes they instigate than by their coercive mechanisms (e.g., Edelman & Suchman, 1997). Additionally, scholars on normative views on compliance with the law (Edelman, Petterson, Chambliss, & Erlanger, 1991) argue that organizations comply with regulations because the law gives voice to social values, ethics and role expectations, which organizations build on and internalize. Such studies indicate that changes in societal norms and cognitions precede changes in firm cognition, at least in regards to what degree the firm believes specific values, ethics and roles are important to its own business.

The most direct means by which society expresses its dissatisfaction with firm behavior is through the market for the organizations' products (Moynagh & Worsley, 2002). Purchasing decisions are the result of cognitive processes on the part of the consumer and are very dependent upon the context of the decision (Bettman, Luce, & Payne, 1998). It has also been recognized that firms behaving poorly in the eyes of the consumer are likely to do worse than those who are seen as behaving well and being a "good member of society" (Muller & Kräussl, 2011). Since legitimacy is gained through the attainment and maintenance of societal approval (Dowling & Pfeffer, 1975), it follows that poor behavior can also lead to the degradation of a firm's legitimacy.

By endorsing and/or purchasing goods perceived as closer to the cognitive ideals of what a product should be, actors would be imposing a new cultural cognitive order directly upon the firm. In such situations, Dowling's (1975) challenges to organizational legitimacy, particularly competition between firms and misalignment between firm output and societal expectations, come to the fore, and the market may instigate cognitive change in the firm. As these choices begin to affect the firm's bottom line, firm strategy will be altered and organizations will seek to excel at the intent of the regulations it had formerly sought to evade, changing their own cognitions in regards to their environment, and consequently also changing firm strategy to re-align their own cognitions and normative beliefs with the environment's changed demands.

> *Hypothesis 2a) When firms find that their own norms and cognitions are not in line with the social norms, they will alter their perceptions of what their products should be in order to comply with the norms and societal cognitions of society.*
> *Hypothesis 2b) When firms find that their norms and cognitions are not in line with the social norms, they will alter their strategic plans and actions to match societal expectations.*

METHODS

Research Context

We use the Big Three American automakers (Ford, GM, and Chrysler) from 1968 to 2008 to validate these hypotheses. For much of the history of the US auto industry, the fuel economy of vehicles produced by the Big Three American automakers appeared to be primarily in reaction to the changing regulations laid down by government agencies as opposed to market demand. In reaction to the Arab oil embargo, Congress enacted the Corporate Average Fuel Economy (CAFÉ) in 1975 in an effort to decrease the country's demand for gasoline, thus lowering US dependence on foreign oil. The embargo itself led to sharp price increases for gasoline and a sharp but brief increase in the demand for more fuel efficient vehicles. Since that time sharp increases have happened at least twice, once after the overthrow of the Ayatollah in Iran in 1978, and another beginning as late as 2002, which could be said to be continuing to this day.

Each of the Big Three's fleet average mpgs has been above the CAFE standards since the year 2000, and has been approximately equal to foreign make mpgs since that time as well. So while public perception of American cars has remained "powerful, but not very fuel efficient," the reality has changed somewhat. Such a dramatic shift in strategy implies a shift in top management's views of their environment (Porac & Thomas, 1990), We look to this longitudinal phenomenon to explore the question of what might prompt a firm to depart from their apparent previous strategy of adhering to regulatory requirements to pay closer attention to the cognitive frame of society.

Measures

This paper uses a longitudinal case analytic framework to measure the impact of changing regulation and social norms on firm-level cognition and strategy. We utilize a combination of archival data collection and content analysis to operationalize our main constructs. The bulk of the archival data are sourced from Ward's Automotive Yearbook, a trade journal for automotive professionals. Ward's provides industry outlooks and commentary, as well as comprehensive data on the production, sales, marketing and specifications for all major, and many minor producers. With over 80 years of coverage of the US auto industry and decades of coverage of the world auto industry, Ward's is a prime source for industry opinions and numerical data. Objective measures of societal norms and industry cognition were found in the sales trends provided by Ward's Automotive in the form of car types, down to the makes and models, engine size, mpg of each make and model, as well as other data on vehicles produced and sold in a given period. As purchasing decisions are influenced by the norms of society (Rook & Fisher, 1995), to measure the norms and societal cognitions, we settled on the types of products, large (including pick-up trucks and SUVs), mid-sized, and small cars that are sold. Given the large number of choices in the American automobile market, the increases and decreases in market share are a strong indicator of societal understandings of how things should be (norms) and shared understandings of reality (cognitions).

Firm cognition is measured as the change in the share of production of each market segment (small, mid-sized, large) for each of the Big Three from the prior year's production. As production decisions have immense impact on corporate profit and survival, production decisions must be made with a great deal of thought on what top management believes will be the popular trends for the coming years. The resulting strategy therefore "represents an 'educated guess' about what must be done in the long term for the survival or the prosperity of the organization…"(Kinicki, 2011).

Norms of society are first measured through the sales data of the US domestic auto market provided in Ward's journals as the change from the previous year in annual sales for each market segment. Increases in the percentage of sales in any segment were interpreted as indicating that that segment was more popular in that year than in the year previous, and a steady increase over the years in any segment would constitute pressure by society to increase production of that type of vehicle. It should be stressed that this variable only applied to the sales percentage in each segment for each of the Big Three, not to overall market share of the US car market. The beliefs of what a car should be in a given time period are embodied in the vehicles purchased (Marzotto, Burnor, & Bonham, 2000), and if the consumer was unhappy with a firm's offerings, there are products from multiple manufacturers from which to choose a substitute which more closely matches his needs.

We subjectively measure the firm cognition and societal norms through the content analysis of the Ward's Automotive Yearbook trade journal and congressional hearings. Content analysis can be used to describe attitudinal and behavioral responses to communications; reflect cultural patterns of groups, institutions or societies; reveal the focus of individual, group, institutional or societal attention; and describe trends in communication content (Weber, 1990). The nature of this study, analyzing the views and opinions of actors over a long period of time, therefore lends itself to content analysis. This was done by gauging societal cognitive frames during the period of study, and comparing them to the cognitive frames of the firms, and the firms' actions at the time. This research explores cognitive developments in society and the Big Three automakers through measurements of indicators of auto manufacturers' market expectations (ex. annual production numbers) and indicators of societal expectations in fuel economy (ex. shifts in market share of small cars).

Much of the subjective content is from Ward's Automotive. Trade journals play two roles in institutionalism: they are a historical record of the key issues and events as they are viewed from within the industry, and they provide insight to the motivations behind the actions of the industry (Hoffman, 1999). Industry journals reflect of the interests of their core audience and the sources of its information (Clinton, 1996), and are unavoidably biased in interpreting events and issues. In this report this bias is a benefit, as the journal serves as a reflection of the attentions of both the auto industry and society through the issues raised in the publication.

The second source of data was congressional hearings on the initiation of the CAFE standards. Congressional records provide clear indications of relevant participants as well as the positions held, by industry, and other actors, including members of congress, social movement organizations, as well as individual citizens. These positions are indicators of the norms and societal cognitions (Hoffman, 1999). Individual testimony from industry insiders and outsiders provides perspectives from each side of the issue regarding fuel economy in each time period, as well as who was deemed to have a voice in the direction of institutional norms.

Data

390 articles from the 38 volumes of Ward's Automotive were coded. Two volumes out of the forty years' coverage were missing, however since all volumes include data from prior years we were able to include all relevant data points. From these articles, 1155 passages were coded for norms, and 1055 were coded for strategy, of which 586 normative passages and 498 strategy passages were used in this study. Seven hearings were coded for this study with 68 relevant passages, all testimonies (total of 65) were coded. Congressional hearings only coded distinct arguments from each speaker, if the speaker restated the same argument in the same hearing, the additional testimony was not coded.

Coding for congressional hearings was done by first reading each speaker's passage was in its entirety, then coding *up to* the first seven distinct points in the speaker's arguments for or against maintaining or increasing the minimum acceptable level of CAFE standards. If the speaker did not bring up seven distinct points, there would be fewer than seven entries for the passage. Follow up questions were not coded as none of the answers for the follow up questions brought new views, only extended explanations of the same views.

For our analysis of the Congressional hearings, we drawing from Fiol's (1994) study and create three constructs to demonstrate cognitive distance vis-à-vis the issues; the "certainty" of issues concerning increasing the mpg of automobiles, the "controllability" of the issue of increasing mpg in cars, and a "support/neutral/resist" variable to classify comments according to their stance on fuel economy. *Certainty* addresses how clearly an actor defines their stance on the issue and if comments made by the actor were consistent in attitude, strength, and method of attack. Statements from the firm were categorized as "certain," or "uncertain" according to the manner in which the statement was phrased. For example, statements including the words, "Our company will" or "I am sure," for example, would be classified as 1, "certain," while phrases such as, "I believe," or "This might lead to," would be classified as 2, "uncertain." *Controllability* relates to the extent to which one a situation to be an opportunity, as opposed to a threat (Jackson & Dutton, 1988). This measure was tallied by the categories of (1) controllable, (2) uncontrollable according to the degree to which obstacles are mentioned, and the degree to which the spokesperson believes that there are measures that can be taken to control these issues. The final qualitative measurement of attitudes toward fuel economy is whether the actor's attitudes were for or against encouraging fuel economy in cars and light trucks. "*Support/resistance*" measures statements made which reflect upon the attitudes of the actor in regards to fuel economy's importance in an automobile. Statements were categorized as (1) supportive or (2) resistant.

Firm norms were identified as references to systems which define goals and objectives and also give guidance on suitable ways to achieve them (Scott, 2008). Such references would be suggestive of expectations of what a car should/must have in order to be a 'desirable' automobile. For example, a normative passage may include discussions as to whether or not higher mpg ratings are suitable or necessary to lower air pollution or provide national security. "Pro-fuel economy" indicates a statement indicating that fuel economy is a goal/objective, while "neutral" indicates that while the statement or action may affect fuel economy, the exact affect is not clear. For example, a statement to the effect that more six cylinder cars were produced in a given period of time may indicate concern for fuel economy if the vehicles were produced in lieu of eight cylinder vehicles, or it may represent a lack of concern as they may be producing more six cylinder vehicles instead of four cylinders. A rating of "Anti-fuel economy" indicates a statement or action that is counter to developing or producing more fuel efficient vehicles for sale. Obvious examples would be to produce larger or heavier vehicles with the same engines, or to produce greater numbers of larger vehicles with fewer smaller ones. The same process was implemented on societal norms from the perspective of government, greater society, and other parties in each time period.

Firm strategy and societal cognitions were measured in both qualitative and quantitative data. An example of a cognitive reference might be when an actor states an impression of what a car should be, such as, "Americans love the power and comfort of an American automobile." An example of interpreting environmental stimuli and acting on it could be when a firm suggests that low domestic compact car sales indicate a lack of demand for compact cars. This information was tallied and sorted for frequency and content to show the evolution of firm cognitions in regards to fuel economy over time.

ANALYSIS

Results from Production and Sales Data

We summarize the production data in a set of charts on the production of each firm by segment in Figures 1a, 1b, and 1c. The extended period of uncertainty prior to 1985 caused by conflicting signals from greater society and the regulatory branch of society, the US Congress, initially caused the three firms to choose different strategies. At the two extremes, GM reacted intensely but briefly to gasoline shocks, before returning to its prior product mix, while Chrysler steadily increased the production of smaller vehicles in order to comply with the CAFE standards. Ford's did not react as strongly in either direction, but continued to lean towards larger car production. Once the CAFE standard stabilized after 1986, all three firms settled in to satisfy the perceived norms of society at the time: larger cars with more power.

FIGURE 1a
FORD PRODUCTION BY MARKET SEGMENT, 1968-2008

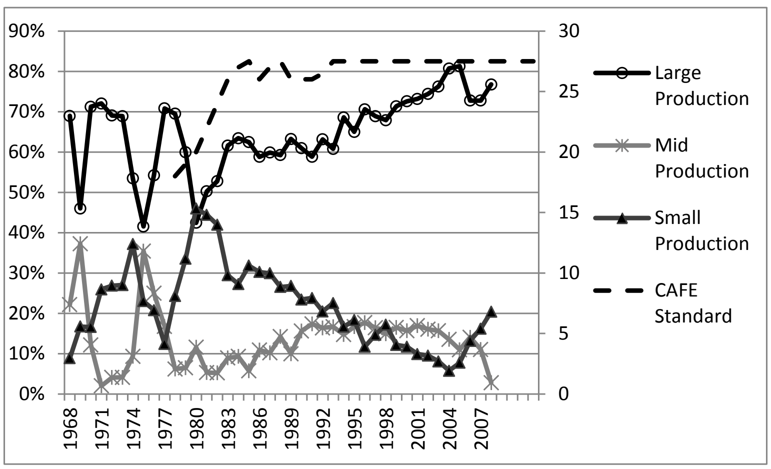


FIGURE 1b
GM PRODUCTION BY MARKET SEGMENT, 1968-2008

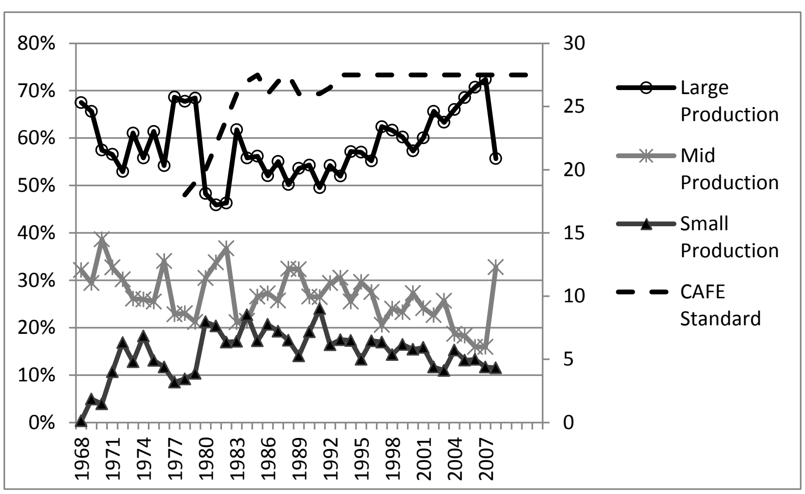
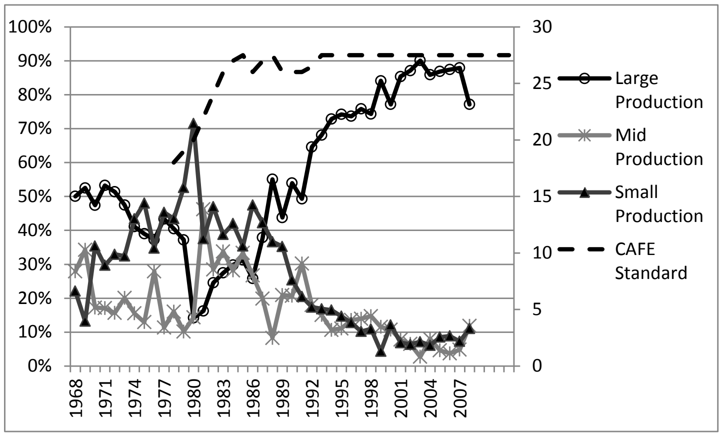


FIGURE 1c
CHRYSLER PRODUCTION BY SEGMENT, 1968-2008



Initial strategic reactions to the price shocks as well as to changes in regulation, in the form of product mix, also appears to have affected future strategies of the firms. GM staunchly resisted small car production and sold higher margin large cars, Chrysler initially made great efforts to follow regulatory restrictions, but when planned increases in CAFE standards were pushed off and changed to decreases in the late 1980s and early 1990s, management quickly realized that they were incurring added expense and lower profits for no foreseeable gain and altered their overall product mix to match the other two American companies' strategies.

Sales data (seen in Figures 2a, 2b, and 2c) from the Big Three indicate that while increasing gasoline prices may have had some impact on the mix of vehicles sold between 1968 and 1980, large vehicle sales have been largely unresponsive to gasoline price increases thereafter. The increase in the sales after 1980 would seem to imply that the greater society in the US did not place as much emphasis on fuel economy as one might expect in the face of increasing fuel prices. The two distinct reactions by society to increasing fuel costs (a sharp decline in large vehicle sales, then an even greater increase), and the subsequent reactions by the firms in terms of product mix do not appear to make sense unless the firms' fleet mpg is taken into account which we illustrate in Figures 3a, 3b and 3c.

FIGURE 2a
FORD SALES BY MARKET SEGMENT, 1968-2008

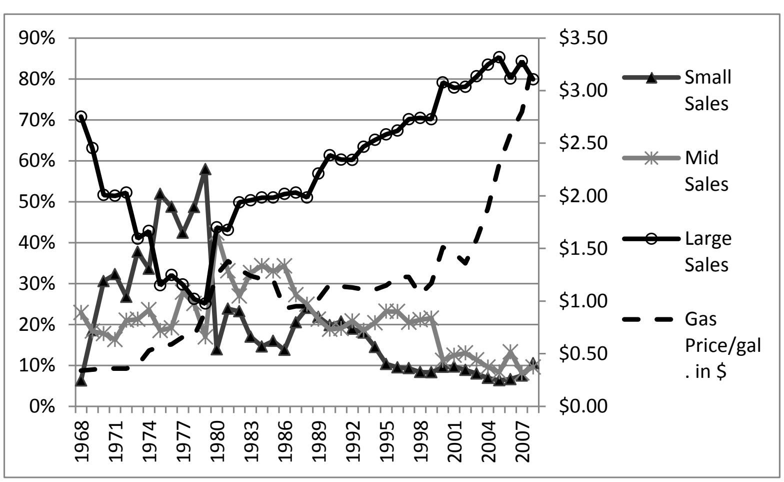


FIGURE 2b
GM SALES BY SEGMENT, 1968-2008

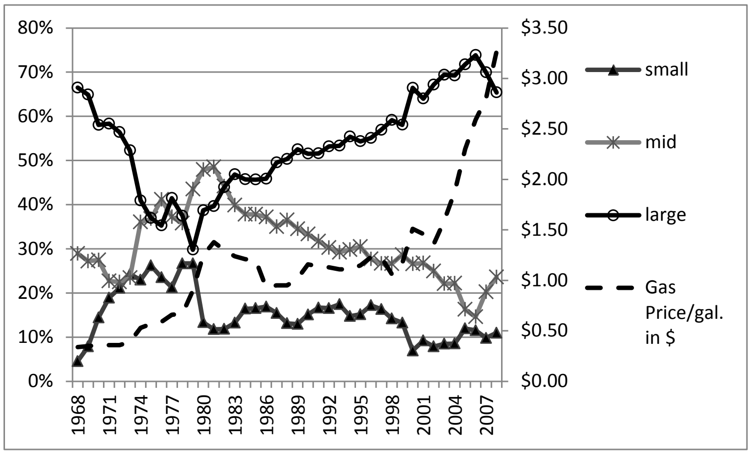


FIGURE 2c
CHRYSLER SALES BY SEGMENT, 1968-2008

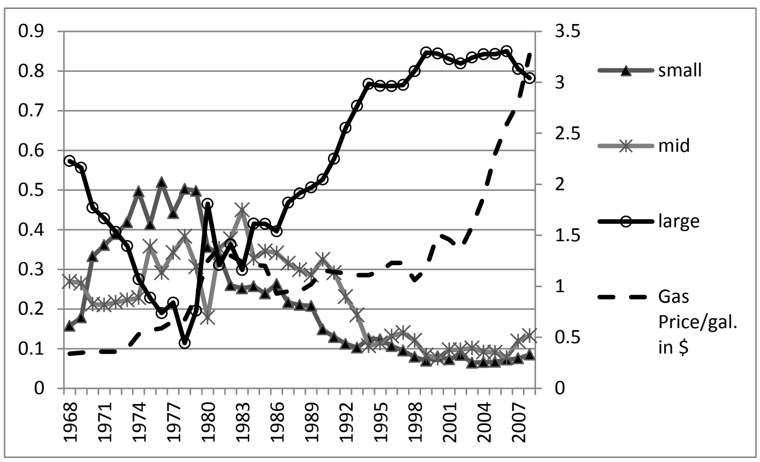


FIGURE 3a
FORD FLEET MPG AND CAFE STANDARD, 1968-2008

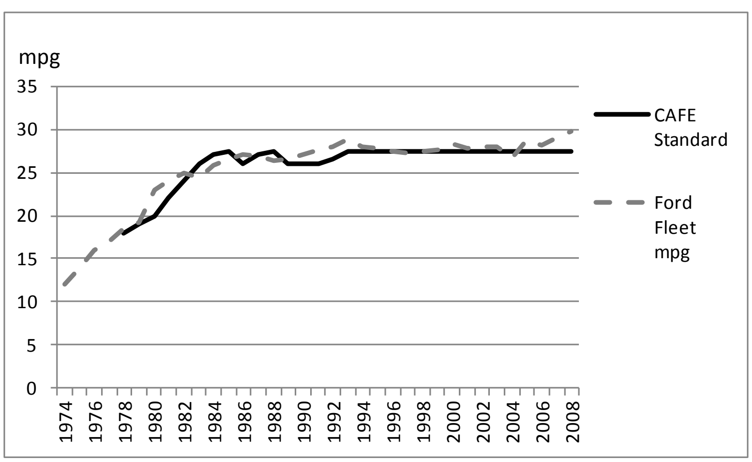


FIGURE 3b
GM FLEET MPG AND CAFE STANDARD, 1968-2008

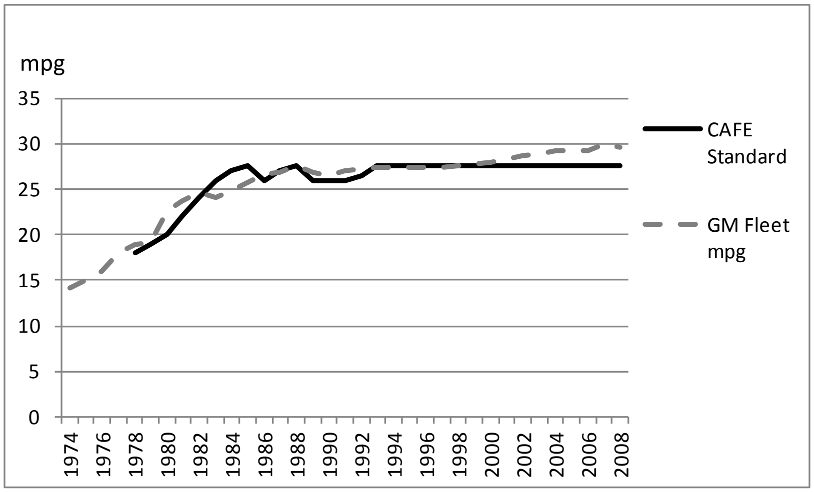
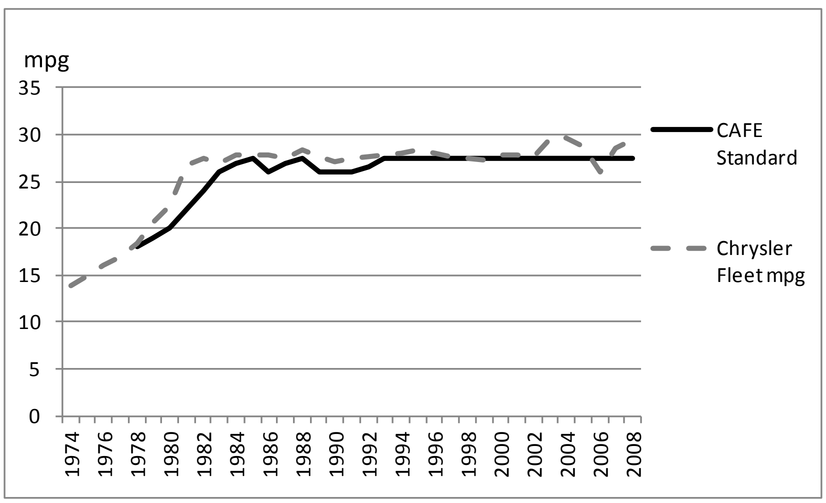


FIGURE 3c
CHRYSLER FLEET MPG AND CAFE STANDARD, 1968-2008



These figures clearly show a rapid increase in fuel economy between 1974 and 1982, at which point the firms' fleet mpg averages closely mirror the CAFE standards until approximately the year 2000, after which the firms generally increase mpg ratings over the CAFE requirements, with brief exceptions by Ford and Chrysler due to mergers and acquisitions with other companies. The rapid increase in production and sales of large cars in the early 1980s, while maintaining and increasing fleet mpg ratings indicate a struggle to cater to two distinct and conflicting parties of stakeholders: government regulators and their customers. Subsequent increases in large car production and continued small improvements in fleet mpg suggest that the firms had reached a level of technological competency where they had the luxury of balancing improvements in fuel economy with increases in engine power.

Results from Congressional Hearings

As would be expected in congressional hearings, Ford, GM, and Chrysler put up very strong opinions on their stances on this issue of increases in required fuel economy. Through the hearings which occurred in 1975 and 1979, all three automakers were adamantly against increased requirements in fuel economy, citing conflicting regulations on pollution and safety, while claiming that technologies necessary for increases in fuel economy were out of reach. These results are reflected in Table 1.

In 1985 Chrysler briefly stepped out of line with Ford and GM, having invested hundreds of millions into upgrading its factories to produce smaller and more fuel efficient cars, the firm supported increasing fuel economy requirements and held itself up as an example of how it was possible for the other two companies to continue to raise their fleet fuel economies. Upon finding that Congress did not have the votes to uphold the CAFE standards, however, Chrysler realigned its strategies to meet consumer demands and produce more large cars.

Congress' views through 1985 were mixed. Those in favor of the new regulations argued: 1) that car makers had increased fuel economy dramatically over recent years, and should therefore be expected to continue to do so, and 2) that car makers could not be trusted to police themselves in this matter, making the new laws necessary. Those opposed to the regulations suggested new regulations would hurt the economy, penalize the American automobile makers for complying with pollution and safety regulations, and put the American car makers at a disadvantage to foreign imports. Much steeper gas price increases beginning in 2001caused the American public to become extremely concerned with the price of gasoline, this concern changed the mood of congress to favor increased fleet mpg. Congress did not manage to increase the CAFE requirements, however, until after the time period of this study.

TABLE 1
TABULATED RESPONSES FROM CONGRESSIONAL HEARINGS

Certainty	1975	1979	1985	1995	2002	2007	2008
Ford	Certain	Certain	Certain	N/A	N/A	N/A	N/A
GM	Certain	Certain	Certain	N/A	N/A	N/A	N/A
Chrysler	Certain	Certain	Certain	N/A	N/A	N/A	N/A
Congress*	7/1/2	N/A	4/0/0	N/A	3/0/1	4/0/0	5/0/0
NHTSA/EPA	N/A	Certain	Certain	Uncertain	N/A	N/A	Certain
Other Government	N/A	Certain	N/A	N/A	N/A	N/A	Certain
Lobbyist, FOR	Uncertain	N/A	N/A	N/A	Certain	Certain	Certain
Lobbyist, AM	Uncertain	N/A	N/A	Certain	N/A	Certain	Certain
Other Lobbyist	N/A	Certain	Certain	Certain	Certain	Certain	Certain
*Views were split in these groups and were broken out according to their views of Certain/Uncertain							

Controllability	1975	1979	1985	1995	2002	2007	2008
Ford	Uncontrollable	Uncontrollable	Uncontrollable	N/A	N/A	N/A	N/A
GM	Uncontrollable	Uncontrollable	Uncontrollable	N/A	N/A	N/A	N/A
Chrysler	Uncontrollable	Uncontrollable	Controllable	N/A	N/A	N/A	N/A
Congress*	5/5/0	N/A	2/0/1	N/A	1/2/1	4/0/0	4/0/1
NHTSA/EPA	N/A	Controllable	Uncontrollable	Uncontrollable	N/A	N/A	Controllable
Other Government	N/A	Controllable	N/A	N/A	N/A	N/A	Controllable
Lobbyist, FOR	neutral	N/A	N/A	N/A	Uncontrollable	Controllable	Controllable
Lobbyist, AM	neutral	N/A	N/A	Controllable	N/A	4/0/1	N/A
Other Lobbyist	N/A	N/A	Controllable	Controllable	Controllable	Controllable	Controllable
*Views were split in these groups and were broken out according to their views of Controllable, neutral, or uncontrollable							

Support/Resist	1975	1979	1985	1995	2002	2007	2008
Ford	Resist	Resist	Cautious Resist	N/A	N/A	N/A	N/A
GM	Resist	Resist	Resist	N/A	N/A	N/A	N/A
Chrysler	Resist	Resist	Support	N/A	N/A	N/A	N/A
Congress*	5/2/1/0/2	N/A	2/0/0/0/2	N/A	2/1/0/0/1	4/1/0/0/0	4/0/0/1
NHTSA/EPA	N/A	Support	Resist	Neutral	Certain	N/A	N/A
Other Government	N/A	Support	N/A	N/A	N/A	N/A	support
Lobbyist, FOR	0/2/0/0/1	N/A	N/A	N/A	Resist	conditional support	Support
Lobbyist, AM	Uncertain	N/A	N/A	Resist	N/A	conditional support	N/A
Other Lobbyist*	Conditional Support	N/A	Support	Resist	3/1/0/0/0	2/0/0/1/0	Support
*Views were split in these groups and were broken out according to their views of support/conditional support/neutral/cautious resistance/resistance							

Results from Trade Journals

In spite of concerns voiced in Congress, statements attributed to American manufacturers in Ward's Automotive Yearbook painted a very different picture as indicated in Table 2. While only a small number of comments between 1968 and 1973 were relevant to the discussion of fuel economy, in general the majority were in favor of increasing fuel economy, and this trend grew stronger in the period between 1974 and 1985. The trend reversed itself for the period between 1986 and 2005, but returned again for 2006 – 2008, reflecting a managerial belief that the American public would revert to its historical preference for larger, more powerful vehicles once fuel concerns abated. The vehicles they produced were becoming much more fuel efficient as time went on, but all three car makers diverted the efficiencies gained into greater horsepower or larger vehicle size.

TABLE 2
TABULATED RESPONSES ON FUEL ECONOMY FROM COMPANY STATEMENTS

		1968-1973		1974-1977		1978-1985	
		Articles Coded: 56		Articles Coded: 72		Articles Coded: 67	
		Pro fuel economy	Anti fuel economy	Pro fuel economy	Anti fuel economy	Pro fuel economy	Anti fuel economy
Ward's	Rate per 100 articles	18	0	21	3	16	1
	actual count	3	0	15	2	11	1
Chrysler	Rate per 100 articles	2	2	35	1	27	6
	actual count	1	1	25	1	18	4
Ford	Rate per 100 articles	13	4	42	3	51	22
	actual count	7	2	30	2	34	15
GM	Rate per 100 articles	9	4	69	4	76	30
	actual count	5	2	50	3	51	20
General Auto Industry	Rate per 100 articles	NA	NA	1	3	NA	NA
	actual count	NA	NA	1	2	NA	NA
Totals	Rate per 100 articles	44	10	168	14	170	59
	actual count	17	5	121	10	115	25

		1986-2001		2002-2005		2006-2008	
		Articles Coded: 40		Articles Coded: 27		Articles Coded: 44	
		Pro fuel economy	Anti fuel economy	Pro fuel economy	Anti fuel economy	Pro fuel economy	Anti fuel economy
Chrysler	Rate per 100 articles	35	55	37	30	9	9
	actual count	14	22	10	8	4	4
Ford	Rate per 100 articles	35	70	26	37	27	5
	actual count	14	28	7	10	12	2
GM	Rate per 100 articles	35	80	74	44	16	2
	actual count	14	32	20	12	7	1
General Auto Industry	Rate per 100 articles	3	45	19	44	7	20
	actual count	1	18	5	12	3	9
Totals	Rate per 100 articles	105	250	156	155	61	16
	actual count	42	100	42	42	27	7

Hypothesis 1 proposes that in times when regulations become increasingly demanding, but market stakeholders act in ways that oppose this regulation, the firm will conform with the regulations in order to continue to survive, but will do so grudgingly. The period of time between 1973 and 1985 was such a time in the auto industry, as congress set and maintained a schedule which mandated a sharp increase in fuel economy. As expected, the firms resisted such regulation, and did so in a variety of ways including testifying against such regulation in congressional hearings, developing a product mix which was aimed meeting the CAFE regulations, as opposed to exceeding them, failing to meet the regulations until they were scheduled to be enforced, and claiming that compliance with such regulations was beyond their control. The firms' product mixes were restricted by the requirements of the CAFE, but the firms continued to produce as many large vehicles as they could while remaining near the regulatory requirements.

When fuel economy became a desirable feature to general society, as indicated through testimony by members of congress, and lobbyists as well as independent speakers, as well as by product sales mix changes over the years, conditions consistent with H2a, the firms also appear to have changed their cognitions in regards to fuel economy. This shift likely began around the year 2000, but was most noticeable after 2006, when the firms not only changed their production mix, but also began to produce new technologies, such as hybrids, for sale to the general public.

Consistent with H2b the firms appear to have changed their strategies to accommodate such changes in societal norms and cognitions, *however,* the adopted strategies seem to be a compromise between regulatory requirements, market demands for large vehicles, and the influences of past strategic decisions.

DISCUSSION

The results of this study affirm many of the tenets of both cognition and institutional theory. Among them are the importance of regulations as a coercive force on the firm, the importance of top management in decision making, and the influence of cognitive frameworks on strategic decisions. Throughout this study, regulations played a major role in the behavior of the firm, whether through the relaxation or strengthening of said regulations, firm decisions were made with these restrictions in mind. In 1968 gas was cheap, and general society and Congress were not at all concerned with fuel economy. In the absence of regulations on fuel efficiency, the automakers were free to indulge the public's attraction to size and power. The gasoline price shocks in 1973 and 1978 temporarily changed the mood of the public and congress enacted CAFE standards bringing up fuel economy as a factor in car production for the first time. The stubborn resistance against accepting fuel economy as an inherent part of the salability of American automobile exhibited in this period and throughout the study demonstrates the difficulty executive management has in changing its strategic views when they do not fit into the existing cognitive frameworks of the firm (Gioia & Thomas, 1996).

A main theme of this study is the fluctuating relative importance of regulative legitimacy as opposed to legitimacy through alignment with market stakeholders, and the effects that fluctuations between the relative importance of these sources of legitimacy have upon the strategic decision making of the firm. There is no doubt that the CAFE regulations played a part in the actions of the firms, particularly between 1973 and 1985, the period in which the greatest year to year increases in mandated fleet mpg averages occurred. The differences in strategies employed during this time, particularly after 1978, illustrate the strong effects that the interpretation of the environment by top management, and the strategies employed as a result, can have upon the fortunes of the firm.

What is more interesting is the reaction of the firms from 1986 through 2008, as this is when the firms had the most flexibility in deciding what their actions would be in regards to fuel economy. Having met the mandated requirements, none of the firms continued to improve their fleet mpg ratings. Fuel efficiencies of engines produced continued to improve, but were negated by further development of greater engine power. It appears as if once having met what was required by law, the firms felt that fuel efficiency was no longer an issue to be considered, as witnessed by several instances in which the American automakers failed to meet the requirements. All three firms reacted in this manner, including Chrysler, which had been so reluctant to risk dipping below the CAFE standards in the early years of the fuel efficiency regulations. It seems that when regulations are above current performance, it serves as a goal, if only a goal to be resisted. Once regulations have been met, however, the perceived norms and cognitions of the market stakeholders take precedence. Regulations seem to be followed due to necessity, while market stakeholder norms and cognitions are sought after and embraced, and it is the interpretation of stakeholder norms and cognitions by top management which guides the firm in the interpretation of these norms and cognitions and the strategies consequently enacted.

There are limitations to this study. First, all of the subjects of this paper were US manufacturers in a single industry in the US market, so generalizability is limited. Second, many other environmental variables could have had effects on the cognitions and norms of society and the cognitions, norms and strategies of the firm, such as the state of the economy, government limitations on imports and union/firm interactions.

CONCLUSION

This paper makes two significant contributions to the literature. First, it begins to fill an empirical gap in the literature concerning relations between the normative and cognitive bases of legitimacy (Greenwood et al., 2008: 27). It examined how the regulative forces affecting the automotive firms interact with the societal norms and cognitions, and the resulting strategic changes made by the firm. It suggests that the firms will seek to exceed regulatory requirements only if the firm sees benefits that exceed the costs incurred in doing so. The study also suggests that while regulatory statutes may compel a firm to meet such guidelines, societal norms and cognitions, as expressed through consumer decisions may compel it to either actively resist or to exceed what is required. So while regulations provide a basis for action, market factors determine the spirit of compliance, and the quality of performance of said compliance.

Second, this work helps to bridge the gap in the literature between institutional cognition and the strategy cognitive literature (Greenwood et al., 2008: 27). Through the examination of the historical data of the auto industry this paper provides a much needed empirical study on the nature of the relationship between institutions and strategic action. Specifically, this paper suggests that changes in societal norms and cognitions alter environmental demands upon the firm, and since it is market stakeholders within society which provides the organization with the means to survive (Preston & Post, 1975), the firm must also change its own cognitions and norms to match those of society (Dowling & Pfeffer, 1975), and it is this change in firm norms and cognitions that instigates adjustments firm strategy.

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