CURRENT STATE REGULATORY SUPPORT FOR PAY-AS-YOU-DRIVE AUTOMOBILE INSURANCE OPTIONS

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Summary

This paper examines the potential barriers to implementing Pay-As-You-Drive (PAYD) automobile insurance programs through a survey of State Insurance Commissioners. The survey was designed to determine whether state regulations currently prohibit PAYD automobile insurance and identify specific requirements that companies would have to meet to obtain approval for such premium structures. A total of 43 states participated in the survey. The results of the survey indicate that PAYD programs can be implemented in a majority of states under their current regulations. Most states will, however, require a demonstration that the price structure is equitable and transparent before adopting such programs.

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Introduction

Pay-as-you-drive (PAYD) automobile insurance allows consumers to pay for insurance in proportion to mileage driven and risk assumed in the use of their vehicles. The more the consumer drives, and the higher the potential for being involved in a collision, the more they will pay for coverage. Under PAYD programs, drivers would pay only for the insurance coverage or service that they needed. The subsidy of higher-risk drivers by other drivers could be significantly reduced. Conceptually, a wide variety of potential PAYD program structures and implementation strategies are possible. Premiums could be based upon such factors as: types of vehicles covered, driving history of the household, miles driven per vehicle, or even the times of day and route selection for vehicle use. The program structure would depend upon the rate structure elements, the need for accurate collection of data (miles driven, routes selected, etc.), and the means of collecting premiums (at the gasoline pump, private pre-paid debit accounts, direct credit billing, government-run smart card systems, etc.).

Advocates for PAYD insurance come from many backgrounds, from citizen groups lobbying for more equitable auto insurance pricing to environmentalists hoping to improve air quality through more efficient transportation pricing. From a resource economics perspective, PAYD insurance has the potential to significantly improve the efficiency of the transportation system by sending the correct price signal to the consumer. Consumers would begin to treat insurance as a variable out-of-pocket cost that links to their driving behavior, rather than a sunk cost paid every six months that links only to vehicle purchase and home-to-work location decisions that they have already made.

PAYD is not a new idea as evidenced by published references on the subject as early as 1925 (Khazzoom, 2000). However, PAYD insurance has recently become a hot topic in many states (Wenzel, 1995). In some states, PAYD advocates are faced with the need to change state insurance law and regulations. Texas was the first state to proactively change their law and regulations to allow for the implementation of PAYD automobile insurance. This paper reports the results of a brief survey of US State Insurance Commissioners designed to assess state progress toward adopting PAYD as an auto insurance option.

Surprisingly, PAYD programs can already be implemented in many states under their existing laws and regulations. The paper reviews laws and regulations affecting the implementation of PAYD insurance programs, and explores problems and impediments to implementing PAYD programs. It concludes with a discussion of the implications of the survey results with respect to the future of PAYD as a viable automobile insurance instrument.

Legislative Framework for PAYD Automobile Insurance

A few states have been contemplating changes to their state insurance regulations to allow insurance companies to offer PAYD insurance. Legal and regulatory changes in Texas now specifically allow companies to offer cent-per-mile choice for auto insurance, and make offering such programs voluntary. According to Cent-Per-Mile Car Insurance for Texans (2002), the reasons for passing House Bill 45 (the bill that allows PAYD auto insurance pricing) were: 1) constituents were angry at being overcharged for auto insurance, 2) insurance companies would no longer overcharge drivers who travel fewer miles than the average driver in their rate class, and 3) more affordable insurance for low mileage households would reduce the number of uninsured cars in Texas. Households in low-income areas and in census tracts with older heads-of-household, tend to own fewer vehicles, own older vehicles, and drive fewer miles per household (Rajan, 1993; Granell, 2002). Because individuals driving few miles include significant numbers of older and lower-income drivers who tend to be least able to afford insurance, consumer equity may be enhanced through PAYD approaches. Texas was able to pass this legislation because residents were generally in favor of such a pricing structure and there were significant lobbying efforts predominately on the part of the National Organization for Women (NOW).

In the proposed insurance plan for Texas, each consumer would pay for a particular number of miles for their vehicle in advance of driving the miles. Insurance companies would issue an insurance card that expires when the consumer's pre-paid miles are depleted (Cent-Per-Mile Insurance for Texans, 2002). Insurance premiums are established in rate classification tables. The consumer's insurance premium is then established by their assignment to a rate class, based upon household, driver, and vehicle characteristics. The determining variables used in assigning rate classes will include age, gender, marital status, zip code, and other similar defining variables. The rate group's insurance price divided by the group's average mileage per year determines the price per mile (Cent-Per-Mile Insurance for Texans, 2002).

In February 2000, the California State Assembly passed Assembly Bill No. 2076. The purpose of the bill was to require the State Energy Resources Conservation and Development Commission to work with the State Air Resources Board and recommend a plan of action to reduce petroleum dependence. One of the recommendations from this venture was a proposal for pay-at-the-pump auto insurance. In pay-at the-pump programs, consumers pay insurance premiums when they purchase gasoline. Assuming that insurance pricing would add approximately $1.00 per gallon to the cost of gasoline, a computer simulation by the California Energy Commission predicted that the total personal vehicle miles traveled would decrease by approximately four percent by the year 2015 (Kavalec, 1996). The simulation results are helping to pave the way for the Commission to consider implementing pay-at-the-pump auto insurance. The California Air Resources Board's final analytical report should be available in July 2002; draft policy recommendations are not expected until November. Once the draft policy document is finalized, it will be transmitted to the Governor and Legislature for consideration (Fong, 2002). If the strategy chosen to reduce petroleum dependence is pay-at-the-pump, then the state's insurance regulations will require significant modification.

Pay-at-the-Pump versus Mileage-Based Auto Insurance

Pay-at-the-pump auto insurance is considered by many to be the easiest PAYD pricing structure to implement. Consumers never have to worry about their insurance expiring because every time they fill up their tank they are paying for their insurance. Paying at the pump also ensures that *all* drivers pay for auto insurance because consumers do so whenever they purchase gasoline. Such a program necessarily reduces the number of uninsured drivers to zero. As such, pay-at-the-pump insurance has the potential to significantly improve the equity and efficiency of the insurance system with respect to uninsured motorists, effectively eliminating the subsidy of these motorists by the insurance-paying public. Pay-at-the-pump programs would be relatively easily to implement if coupled with statewide no-fault insurance programs. However, such programs are not popular with trial lawyers and some industry advocates (as evidenced by previous lobbying efforts against no-fault insurance in California) or the public, for various reasons.

Pay-at-the-pump insurance pricing is based solely upon gallons of fuel consumed (a relatively poor surrogate for miles driven, given the large differences in fleet fuel economy). The basic pay-at-the-pump pricing structure does not account for other important variables in insurance pricing. For example, assessing premiums based on gasoline purchase reduces the relative cost differential for policies between safe and unsafe drivers. That is, previous driving histories cannot be brought into the insurance pricing equation unless implementation involves positive identification of drivers or vehicles at the time gasoline is purchased. Because basic pay-at-the pump insurance programs would still not accurately price risk, such programs would result in safe drivers further subsidizing the travel activities of unsafe drivers. State Insurance Commissioners may not accept pay-at-the-pump programs that do not consider other factors such as driver history and location of vehicle use in calculating the insurance premium. That is, basic pay-at-the-pump programs may violate the general statutory prohibition of insurance pricing that is “unfairly discriminatory.”

Bringing uninsured motorists into the shared risk pool may increase net insurance premium collections. However, even if pay-at-the-pump insurance did pass a state insurance commissioner’s review, it is unlikely that insurance companies would be supportive. Aside from no-fault issues, collection of insurance premiums at the pump also requires a much stronger interface between the consumer, the regulatory agencies, and the private insurance company. The significant increase in oversight regulation has the potential to introduce major system inefficiencies. Pay-at-the-pump programs must overcome considerable implementation obstacles to gain commissioner’s approval and participation of the insurance industry.

Under pay-by-the-mile insurance programs, the insurance premium for each driver (or household) could be calculated and assessed separately. Such a program would allow insurance companies to place each individual in an appropriate cent-per-mile rate group, based upon standard insurance variables. As such, the only additional external variable that must be captured is miles driven per year (or quarter, or even month). The main downside to cent-per-mile premiums has been determining how to track vehicle miles traveled by each driver or household.

There are many different approaches that states may take in implementing pay-as-you-drive insurance. Pay-at-the-pump (PATP) and cent-per-mile insurance structures both have potential limitations that could keep either insurance commissions or insurance companies from approving proposed programs and rate structures. Khazzoom (2000) reviews and addresses several criticisms of PATP, including higher insurance costs, restriction on the household’s choice of insurance company, creation of government bureaucracy, and adverse effect on low-income households. Given the numerous technical and policy issues that must be resolved, it seems important to first understand the current regulatory environment under which insurance companies are operating. Only by understanding the potential regulatory impediments to the implementation of value-priced insurance can policymakers hope to identify and make necessary changes.

Survey of State Insurance Commissioners

Each state received a seven-question survey (Appendix A) designed to determine whether state regulations currently allow (and do not prohibit) PAYD insurance and to identify specific State Insurance Commissioners' Office requirements that companies must meet to obtain approval for such premium structures. A list of the survey respondents is included in Appendix B. The survey focused on cent-per-mile insurance as opposed to pay-at-the-pump insurance. As discussed earlier, the survey team assumed that state regulations would not currently allow pay-at-the-pump insurance due to the potential restructuring that would be required within both industry and the regulatory agencies. Surveys were administered by telephone (17), fax (2), and e-mail (24). The survey questions and responses are described in detail in the following sections.

Question 1: Current PAYD Legal Status

The first question in the survey asked if the state's regulations currently allow insurance companies to offer cent-per-mile-insurance, and, if so, if any company had submitted a cent-per-mile pricing structure. The purpose of this question was to determine which states currently have laws and regulations that would allow the new pricing structure. When developing the survey, the researchers assumed that a change in state regulations would likely be necessary to allow companies to charge on a cent-per-mile basis. With the background knowledge that Texas had already changed their regulations, the second part of the question determined whether the regulations encouraged any companies to offer the new price structure or if any structures were currently pending review.

The results of the first question were surprising. It appears that very few states would have to change their laws and regulations to allow companies to offer PAYD insurance in their state. There were a total of 43 responses to the question. Sixty three percent of the respondents indicated that state regulations did not prohibit PAYD auto insurance or that nothing in state regulations specifically prohibited PAYD. Of those states answering positively to the question, none had had any companies submit a pricing structure for PAYD insurance. All the remaining states (37 percent) indicated that state regulations would not allow PAYD insurance in their state.

New York's respondent indicated that PAYD would not be feasible because their regulations require companies to take into account past experiences with losses. However, as discussed earlier, PAYD structures can allow companies to take into account past losses. West Virginia indicated that their state wants to ensure that the new structure will keep its customers insured at all times. Michigan requires an upfront statement of the premium charge. Also, the policy must have an expiration date and must be renewable. The representative for the state of Georgia indicated that there are no regulations to prohibit PAYD insurance, but that companies would need to ensure that their policy required a down payment to cover sixty days of coverage and that the minimum insurance term was not less than six months. For most states, there appear to be few regulatory barriers that would prevent the implementation of cent-per-mile insurance rates.

Table 1 summarizes the states' responses to Question 1 of the survey.

TABLE 1
PAYD Legal Status in the States

Legal Status	**Do not Prohibit PAYD Insurance**	**Do Not Allow PAYD Insurance**
States	AZ, AL, CO, FL, GA, ID, IL, IA, KS, KY, MD, ME, MI, NV, OH, OK, OR, PA, SC, SD, TN, TX, UT, VA, WA, WV, WI	AR, CA, DE, IN, LA, MA, MN, MS, MO, NC, ND, NE, NH, NM, NY, WY
Number of states	27	16
Percent of states	63%	37%

Survey responses were not received from AK, CT, DC, HI, MT, NJ, RI, and VT. The eight non-respondents are generally less-populous states. Hence, additional data from these states might affect the above percentages, if their responses tend to be correlated.

Question 2: Specific Prohibitions

The second question asked if there are any specific prohibitions to insurance companies desiring to offer insurance on a cent-per-mile basis, or if the laws currently allow companies to sell cent-per-mile insurance with the Commissioner's approval. Given the assumption that changes in state law would likely be required to implement cent-per-mile insurance, the intent of this question was to find out exactly what restrictions prohibited implementation of PAYD insurance in each state. Given that most states already allow cent-per-mile insurance, and because many of the surveys did not have a personal contact, and the survey assumed that states would have laws against PAYD, many responders appear to have misinterpreted the question. Thinking that it was a restatement of the first question, most respondents did not answer the second question. Given the lack of response, question two is omitted from the analysis.

Question 3: Premium Structure Approval Requirements

This three-part question was designed to determine what each state requires from insurance companies to approve a new pricing structure. The first part asked if the creation of a new and separate company would be required.[6] The second part of the question asked if actuarial data would be required for approval, and the third part asked if a driver's current annual fees and reported annual mileage could be used to implement a cent-per-mile insurance structure. The first two parts gave a general idea of how each state approves its price structure. The third part was a hypothetical question to determine if state insurance commissioners find the simple methodology justifiable as basis for pricing cent-per-mile insurance. Unfortunately, the third part of the question was not phrased using insurance industry language and should have clearly asked if reported average annual mileage within a "rate group" and the "rate group's annual

[6] Prior to administering the survey, the research team had been erroneously informed by a major insurance carrier that a new company must be formed before a new pricing structure could be offered to Georgia residents.

premium" could be used to determine a cent-per-mile price for these customers. Even with the wording employed, respondents still provided enough explanation in their answers to enable determination of whether this calculation method is considered acceptable. Although not every state answered every part of the question, the answers from the states were similar.

New and independent companies were not required by any of the states responding to the survey, but 8 percent of the states preferred that a new company be created. For example, Georgia responded that they do not specifically require a new company to be created to offer this insurance although it would be the easier and preferred alternative. In 24 percent of the states responding, the regulatory agency specifically mentioned that companies could simply create a new tier within the company. Half of the respondents said it was not necessary to set up a new company. The remaining 18 percent of respondents provided other answers such as legislation was needed, no comment until program is submitted, not applicable because bureau state (North Carolina), and some were use and file states. Actuarial data proving that the new pricing structure is fair and equitable must be provided in 91 percent of the responding states. Many agencies base their determination of whether the structure is fair and equitable on the number of years of data used for determining the average mileage. For example, New Mexico reportedly would need at least three years of data to develop a fair and equitable structure.

To the question on whether state insurance regulations would allow a company to begin offering PAYD insurance based on the driver's current annual fees and reported mileage, there were 25 useful responses: 40 percent would allow such development of cent-per-mile-rates and 36 percent would not. Of the remaining 6 states, three said they would require actuarial data, one would use the average miles of the group, and two would require some criteria but did not specify what criteria they would require.

Tennessee was one of the states that indicated that they would not accept a cent-per-mile structure based upon the miles driven in a baseline year, because the structure constitutes a retrospective rating scheme, which their regulations do not allow. If a vehicle accrued an unusual amount of mileage in a subsequent year, the annual insurance premium would rise significantly, which would not happen under the current pricing structure. Notwithstanding Tennessee's interpretation of their regulation, an increase in annual insurance payment under conditions of increased activity is a desired goal of value priced insurance. Because the driver increases their assumed risk by increasing vehicle activity, an increase in insurance payments is economically rational.

Question 4: Legislative Proposals

The fourth question asked if the state legislature had proposed or passed any legislation, or if any legislation was pending, that would allow cent-per-mile insurance. This question identifies which states have previously introduced bills but did not have enough support to pass the bills and identifies states that are currently considering the new pricing option. The question also asks for the bill numbers to determine the details of the proposed legislation.

Keeping in mind that 63 percent of the responding states already indicated that their state regulations did not prohibit PAYD auto insurance; it should not be surprising to find that few states are specifically proposing to change their regulations to allow PAYD implementation. Five states (12 percent of respondents) responded that cent-per-mile insurance language had been proposed or passed in their legislature: Texas, Arkansas, Oregon, Maine and Georgia. Of these states, only Arkansas responded (in Question 1) that it actually needs legal and regulatory changes to allow PAYD pricing. The legislative proposals would however clarify that such pricing is allowed.

To date, Texas is the only state that has actually changed their laws. Arkansas, Oregon, and Maine said propositions for PAYD came to committee or to debate at some point, but the proposals did not make it past the floor. These proposals did not pass, but they are a step towards allowing PAYD insurance. The Oregon Environmental Council's PAYD Insurance Bill was re-introduced and passed by the House of Representatives on June 4, 2002. Georgia proposed House Bill 1491 in the 2002 legislative session. The Georgia House of Representatives did not pass the bill, but Representatives Benfield and Drenner attempted to include the words 'mile-based' and 'time-based' into their regulations. The Georgia proposal did not change any regulations that would prevent the adoption of PAYD insurance, but simply tried to make it more evident that it is an alternative rate structure available to companies. Louisiana expressed interest in PAYD as noted that if PAYD works well in other states, they might introduce PAYD in the 2003 Regular Session. Given the large number states that already allow the implementation of PAYD structures (seen in the response to question 1), and the number of states are already considering legislative changes, there seems to be little nationwide limitation to widespread adoption of PAYD insurance structures.

Question 5: Current Lobbying Efforts

The fifth question asked if any public or private interest groups are currently lobbying for the passage of cent-per-mile insurance. As mentioned earlier, the National Organization for Women (NOW) has historically been a nationwide advocate for PAYD programs nationwide. Texas reported that NOW was the predominate supporter of the legislation in their state. The intent of this question was to identify any other advocacy groups supporting cent-per-mile insurance.

The state of Washington's Governor's Commute Trip Reduction Task Force highlighted mileage-based insurance as their top choice for reducing commuter trips and proposed this option to the legislature. In April 2002, the task force met with staff of the Insurance Commissioner's Office and reviewed their insurance regulations pertaining to a pay-by-the-mile insurance. The Insurance Commissioner's office highlighted two key regulations that may prohibit a pilot program in their state. The issues related to a company not being able to offer two different price structures for the same group of people and the requirement for open competition between the companies. Because the state has open records provisions, one company could collect activity data, conduct analysis, determine a price structure, receive approval, and then another company could simply view their records and use the results to compete with the first company. Recently, the Commissioner's office reviewed these regulations and determined that the regulations do not need to change for companies to offer a pilot program.

Washington State's Commute Trip Reduction Task Force is now focusing on finding interest among the insurance industry to offer the new price structure. The program will track mileage by taking odometer readings during semi-annual safety inspections. Because the state regulations prohibit insurance from canceling policies, consumers would still be insured even when they travel over the pre-paid mileage, and would be required to reimburse the company for the additional miles traveled. There is no deadline for the beginning of the program, but the involved parties are working to get started as soon as possible.

The Conservation Law Foundation in Massachusetts is currently studying the topic and lobbying for implementation in their state. The Conservation Law Foundation is also trying to sell insurance through its Environmental Insurance Agency. They are offering safe drivers the option of saving on insurance when they use vanpools, bicycles, or their feet to reduce the number of miles they drive (CLF). Although this form of insurance program is not the same as a pay-by-the-mile, it does allow drivers to save by driving less. Acceptance of this alternative form of insurance, and the willingness of the Conservation Law Foundation to find the funding and personnel to offer this insurance program in Massachusetts, is a positive sign for other states interested in pursuing such options.

Kentucky pointed out that there has been lobbying for PAYD on a national level by the National Association of Insurance Commissioners (NAIC), the Office of Transportation and Air Quality at the US EPA and the FHWA. Colorado also noted there as been no lobbying in their state, but some inquires to news media. Maine indicated that there is one individual trying to get a bill through. The remaining 37 states did not note any lobbying efforts in their state.

Question 6: Impact on Consumer Equity

The sixth question asked if the insurance commission has a stance on whether PAYD insurance pricing positively or negatively affects consumer equity. There are indications that equity within insurance pricing can be enhanced under PAYD structures (for a detailed literature review, see Wenzel, 1995). The intent of the question was to determine if any states generally oppose the new pricing structure on equity grounds. The vast majority of the states did not have a position because it was not an issue in their state or they did not have enough information to form an opinion. Four states (9 percent) indicated that PAYD programs might be more equitable, but stated that they would like to see evidence based on empirical data. Wisconsin did not feel it would help in their state because they already have comparatively low rates and because mileage is not a big factor in their state.

The New York respondent did not feel that cent-per-mile programs would be equitable in their state because the upstate drivers tend to drive more than the downstate drivers do. The general perception seems to be that PAYD insurance in New York would result in higher prices for upstate drivers. Accordingly, it is expected that while downstate drivers would lobby for such programs, upstate drivers might lobby against them. Not surprisingly, the New York insurance commissioner's office also felt that citizens would fight strongly against the implementation of PAYD insurance in their state. Interestingly, the concept of equity in the New York response focused completely upon the total amount that a household pays for insurance and not upon whether the premiums would be proportional to household driving risk. The net change in annual insurance premiums for New Yorkers really depends upon relative mileage as well as the difference in cent-per-mile rates across these areas of New York. Current cross-subsidies in the insurance system (e.g., the potential cross-subsidy of high mileage drivers by low mileage drivers) might actually be reduced or eliminated under PAYD programs. Even in states with more uniform driving behavior, the benefit in consumer equity may not be large but should still be present.

Question 7: Additional Comments

The final question asked if the respondents had any comments that could add useful information to the study. This question allowed the insurance agencies to include any additional constraints or reservations that their commission may have on cent-per-mile insurance or anything else that might hinder the implementation of PAYD insurance. Washington State's representative brought up the issue of invasion of customer privacy. A few of the states also mentioned that changes occur in state law only when sufficient numbers of people take their issues to court and raise complaints. West Virginia noted that commercial auto policies already have a similar program based on mileage driven every month, drawing attention to the fact that mileage driven is commonly used as an exposure measure for commercial vehicles.

Discussion and Conclusions

The survey questions described here were designed to identify relevant state laws and regulations pertaining to PAYD insurance and to assess the status of PAYD in each of the states. The most important survey finding is that it is apparently possible for PAYD programs to be implemented in the majority of states under their current laws. However, most regulatory respondents wanted to ensure that the price structure is equitable and clearly delineated, before adopting such programs.

Even in those states that appear reluctant to consider cent-per-mile insurance (mainly due to concerns over keeping customers insured at all times) PAYD can apparently be implemented. Interestingly, respondents in some states were under the mistaken impression that a cent-per-mile rate structure was incapable of incorporating driving history and previous loss claims. On the contrary, cent-per-mile rates that are specific to a claims or risk group would simply be higher for households with a track record of higher risks, much the same manner as the factors are incorporated into current semi-annual pricing structures.

In those states that do require a change in their regulations, public pressure and program information are likely to be the keys to the successful adoption of cent-per-mile insurance programs. The key to passage of the Texas law to facilitate cent-per-mile insurance appeared to be pressure from NOW on the Legislature. Massachusetts offers an alternative insurance, and it became possible through the action of an active environmental group looking for a way to encourage people to drive less and therefore pollute less. The states that have considered PAYD insurance, but have yet to modify their regulatory structure, are currently not under much political pressure to make the change. However, this is likely to change as the lobbying efforts of NOW and other interested activist groups in these states begin to increase.

Educating the public and regulatory staff may also be an important factor in implementing PAYD insurance. The survey revealed that some states had never heard of pay-as-you-drive insurance, requiring the surveyor to explain the basic concepts. Detailed studies on PAYD insurance should be conducted with the results widely disseminated to citizens and state Insurance Commissioners. Only when the public begins to see the potential benefits of pay-as-you-drive insurance will they become more committed to seeing such programs implemented in their states. Insurance Commissioners are more likely to be accepting of cent-per-mile programs when they discover that they have the potential to improve consumer equity. Downstate drivers in New York may surprise their own Insurance Commission by lobbying for cent-per-mile programs if they have reason to believe that their insurance payments could decline when their fellow upstate residents' payments increase.

State regulations do not currently hinder companies in most states from offering PAYD insurance. However, private insurance companies must be convinced that PAYD will be worthwhile before they will seek approval for new pricing structures. The rules for submitting the price structure remain the same, with more than 90 percent of states requiring actuarial data to justify the rate structure being requested. However, private insurance companies currently lack the data necessary to develop efficient pricing structures that link actual onroad travel to loss risk. Data from instrumented vehicles (vehicles equipped with black boxes for extended periods of time) are needed before insurance companies can accurately develop fair and equitable premium structures based upon real world risk and loss data.

Insurance companies must also see the profit in offering PAYD programs. Without better data, companies are reluctant to abandon their current price structures that have proven to be profitable. Adopting new pay-by-the-mile options might decrease profits (until the companies make premium adjustments based upon solid actuarial data) and may require significant restructuring of corporate business plans. Texas is currently waiting for a company to offer the new price structure and Washington is waiting for a company to offer PAYD mileage as a pilot program. According to NOW's website (http://www.centspermilenow), the organization is encouraging citizens to pressure their insurance companies to offer the new rate plan. As instrumented vehicle data become available, research to determine how insurance companies might profit through pay-by-the-mile-insurance could significantly increase the industry's interest in such premium structures.

For insurance companies interested in offering cent-per-mile rate plans, determining how to measure the miles traveled presents challenges. Advocates of pay-at-the-pump insurance argue that integrating insurance premiums into the gasoline prices makes their option attractive. However, as discussed earlier, lower income households with older (less fuel efficient vehicles) will tend to pay more per mile and the no-fault programs generally proposed to implement pay-at-the-pump insurance are not politically palatable. Taking odometer readings each year when a car goes in for inspection is a simple alternative for collecting data on vehicle miles traveled (VMT), but would either require companies to charge at the end of every year or to reimburse their customers. [7]

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[7] This sort of "settling up" after an audit that verifies the actual units of insured exposure is very common in business insurance.

Furthermore, the risk of odometer fraud is significant. Reimbursing customers or charging extra for miles over the pre-paid amount would not work in Michigan, and any other state with similar regulations that require upfront statement of premiums. Charging at the end of every year would not be beneficial for the companies if the majority of company profits come from financial investment of collected premiums. Collection of fees at the beginning of the year and reimbursement of excess premiums at the end of the year is feasible, but may be hectic and costly for each company to undertake at the end of every year. Installing GPS on each vehicle is an easy method for tracking mileage continuously, but it is also somewhat costly and would involve overcoming privacy issues. The use of electronic monitoring devices is technically feasible and may be the best and most accurate means of implementing fair and equitable distance based premiums. Even so, security of data and prevention of electronic fraud would need to be addressed.

Enforcement would be a key to successful implementation. Every state would like all drivers to have insurance coverage at all times. Current enforcement comes through periodic checks during vehicle registration and license renewal, and routine traffic stops. The same procedures could be used with cent-per-mile insurance. The proposed cent-per-mile structure in Texas would always keep customers insured because they must pay ahead of time for their insurance and when it runs out, i.e., they must purchase coverage for additional miles. However, a linkage between insurance data and licensing data would need to be created.

Another important consideration is incorporating comprehensive coverage in these programs (the portion of the policy that covers such perils as theft or hail damage). Payment of comprehensive coverage in Texas is expected on an annual basis to allow the car to remain covered (Cent-Per-Mile Car Insurance for Texans, 2002). The result should be an increase in the percentage of insured drivers because low-mileage insurance should become more affordable.

Finally, if the public does not show interest in pay by the mile insurance, companies will not offer this coverage, nor will state legislatures and insurance commissioners support implementation. An insurance company's primary objective is to profit, and the only way to profit is in a market with customers. Ultimately, the profitability of companies will largely drive their decision to adopt and support cent-per-mile insurance. If companies find this insurance option to be profitable, they would have a clear incentive to overcome the other obstacles to offering cent-per-mile insurance to their customers. The willingness of the insurance industry to innovate based on competitive strategy is well demonstrated by Progressive Insurance's highly unusual claims process and the adoption of web based marketing of coverage. Ongoing research efforts should target the collection and analysis of data designed to support the development of fair and equitable price structures and analyze the impacts that such programs will have on consumer equity and corporate profitability.

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APPENDIX A
SURVEY INSTRUMENT FOR STATE INSURANCE COMMISSIONERS

Name:
Title:
State:
Phone #:
Email:
Date:

Request for Interview Prompt:
The Georgia Institute of Technology is currently undertaking research to examine the potential effects that payment of insurance on a per-mile basis might have on travel behavior, vehicle activity, air quality, and crash risk. As a part of this study, we are required to determine if there is currently any activity on pay-as-you-drive insurance in other states. To accomplish this, we are interviewing appropriate managers in state insurance commissioners' offices to ask a set of seven questions on pay-as-you-drive insurance programs. This interview should take less than 15 minutes.

1. Do your state regulations currently allow insurance companies to offer policies that specifically charge consumers for insurance on a cent-per-mile basis, as opposed to annual or semi-annual premiums?
    a. If your state currently allows pay-as-you-drive insurance, have any companies submitted price structures for this form of insurance?
2. Are insurance companies specifically prohibited from offering cent-per-mile insurance, or do the existing law and regulations currently allow the companies to create such a structure if the Insurance Commissioner approves?
3. What would it take for the companies to receive approval?
    a. Creation of a new and separate company?
    b. Provision and approval of actuarial data (statistical analyses of crash data to assess risk) to demonstrate a fair and equitable structure?
    c. Would your state's insurance regulations allow a company to begin pay-as-you-drive insurance based upon the driver's current annual fees and reported mileage?
4. Has your State Legislature ever introduced a bill that would permit insurance companies to implement pay-as-you-drive insurance pricing?
    a. Is a bill currently pending?
        i. Do you have a bill number, website address, or contact name and phone number where we could get more information?
    b. Have bills been introduced in previous legislative sessions?
        i. Do you have any bill numbers, website addresses, or contact names and phone numbers where we could get more information?
5. Are you aware of any private or public interest groups that are currently lobbying the legislature or state agencies to allow for implementation of pay-as-you-drive insurance programs in your state?
6. Does the agency have a position on whether pay-as-you-drive pricing will have a positive or negative impact on consumer equity considerations in insurance pricing?
    a. Please provide any details to help explain your position above.
7. Do you have any additional information that you believe would be relevant to this study?

APPENDIX B
STATE INSURANCE DEPARTMENT RESPONDENTS

Baker, Tom, 2002. Phone Interview, Minnesota Department of Commerce: Insurance, April 3.
Baughman, Aaron, 2002. Email Survey, The State of West Virginia Insurance Commission, April 2.
Brown, Vista, 2002. Email Survey, Arizona Department of Insurance, April 1.
Caruso, Dee, 2002. Email Survey, State of Illinois Department of Insurance, March 27.
Cotter, Wayne, 2002. Phone Interview, New York State Insurance Department, April 9.
Cox, Bernard, 2002. Email Survey, North Carolina Department of Insurance, March 22.
Daniel, Donna, 2002. Fax Survey, State of Idaho Department of Insurance, April 16.
Diez-Arguelles, 2002. Fax Survey, State of Florida Department of Insurance, April 18.
Duncan, John, 2002. Phone Interview, Tennessee Department of Commerce and Insurance, March 26.
Fong, David, 2002. Personal Interview, California Air Resources Board, Sacramento, CA, June 3.
Frick, Myra, 2002. Phone Interview, State of Alabama Department of Insurance, March 27.
Freidman, Robert, 2002. Phone Interview, Maryland Insurance Administration, March 22.
Hanna, Mark, 2002. Phone Interview, Texas Department of Insurance, March 19.
Hart-Bertone, 2002. Email Survey, Oklahoma Insurance Department, March 21.
Hawk, Shawn, 2002. Email Survey, Kentucky Department of Insurance, March 27.
Hawkins, Greg, 2002. Fax Survey, State of Georgia, Office of Insurance and Safety, Fire Commissioner, April 15.
Holland, Chuck, 2002. Phone Interview, Montana State Auditor's Office, April 15.
Johnson, Dick, 2002. Phone Interview, Maine Bureau of Insurance, April 16.
Johnson, TJ, 2002. Phone Interview, Washington State Department of Transportation, May 1.
Kendall, Keith, 2002. Email Survey, Indiana Department of Insurance, April 4.
Klausmeier, Tracy, 2002. Email Survey, Utah Insurance Department, April 15.
Kress, Philip, 2002. Email Survey, State of Wisconsin, Office of the Commissioner of Insurance, March 22.
Kruger, Dean, 2002. Email Survey, South Carolina Department of Insurance, March 25.
Lee, Ramona, 2002. Phone Survey, Iowa Insurance Division, April 16.
Lesh, Roy, 2002. Phone Survey, Wyoming Insurance Department, March 22.
Lyon, Ann, 2002. Email Survey, Delaware Insurance Department, April 2.
Maddox, Brenda, 2002. Email Survey, Missouri Department of Insurance, March 19.
Manders, Steve 2002. Phone Survey, Georgia Insurance and Safety Fire Commissioner, April 15.
Maslowski, Larry, 2002. Phone Interview, North Dakota Department of Insurance, March 22.
Mason, Maureen, 2002. Email Survey, California Department of Insurance, April 3.
Matson, Gail, 2002. Email Survey, State of New Hampshire Insurance Department, March 22.
McVay, Gary, 2002. Email Survey, Arkansas Department of Insurance, March 21.
Moskowitz, Janice, 2002. Email Survey, Nevada Division of Insurance, March 28.
Newins, James, 2002. Email Survey, Kansas Insurance Department, March 28.
Nichols, Rebecca, 2002. Phone Interview, Virginia State Corporation Commission: Bureau of Insurance, April 1.
Parlor, Randy, 2002. Email Survey, Official of Financial and Insurance Services, March 22.
Pedrick, John, 2002. Email Survey, Ohio Department of Insurance, April 16.
Perkins, Wayne, 2002. Email Survey, Massachusetts Division of Insurance, March 18.
Quirk, Molly, 2002. Email Survey, Louisiana Department of Insurance, March 22.
Rivenes, Vicki, 2002. Email Survey, South Dakota Division of Insurance, March 25.
Romberger, Chuck, 2002. Phone Interview, Pennsylvania Insurance Department, April 4.
Smego, Lisa, 2002. Email Survey, Washington State Insurance Commissioner, April 2.
Szczesniak, Christel, 2002. Phone Survey, State of Colorado Division of Insurance, March 21.
Thiel, David, 2002. Email Survey, North Carolina Department of Insurance, March 22.
Vitus, Jan, 2002. Phone Interview, Oregon Department of Consumer and Business Services: Insurance Division, March 21.