

Is No-Fault Auto Insurance the Answer to Liability Concerns of Autonomous Vehicles?

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Automotive travel will change dramatically as technological advances shift more driver functions to computers, cameras, and sensors. Ultimately, drivers will become a thing of the past and all Americans will become passengers in fully self-driving vehicles. Automobile ownership may decline as ride-sharing services utilizing autonomous vehicles proliferate. Fundamental changes in how Americans get from one location to another necessitate a change in how liability is assessed and damages are paid in the event of automobile accidents. No longer will human error (driver negligence) be the cause of most automobile accidents. Complexities and costs involved with determining who should be responsible for damages may cause regulators, insurance companies, and consumers to reconsider the benefits of no-fault automobile insurance. Revised no-fault automobile insurance can provide fair compensation while keeping uncertainty about liability from deterring the advancement and implementation of autonomous vehicle technologies.

Key Words: No-fault, self-driving vehicles, regulation, liability, insurance


Introduction

Automotive travel is poised to change dramatically as new technology is bringing the prospect of self-driving or autonomous vehicles closer to reality. Anticipated benefits include improved safety, better traffic flow, less congestion, and more effective and efficient transportation options for the traveling public. However, the introduction of autonomous features is not without its challenges. Changes will need to be made in the determination of legal liability for automobile accidents, moving away from human (driver) error, currently estimated to be the cause of more than 90% of automobile accidents, to defective, malfunctioning, or poorly designed equipment or travel management systems.¹ Given the complex nature of autonomous technologies, not only in their design but in how the technologies interact with each other and with humans, the task of assigning liability may be impossible to accomplish in a cost effective way with our current tort system. In addition, potential liability issues and uncertainty over just who may be liable could slow the development and adoption of autonomous driving technologies that offer so many benefits to society. Adoption of a no-fault system to provide for damages resulting from automobile accidents can alleviate concerns associated with assessing blame and facilitate the transition to autonomous vehicle technologies.

Types of Technological Change and Associated Liability Issues

The National Highway Traffic Safety Administration (NHTSA) defines five levels of vehicle automation, ranging from none (Level 0) to full self-driving automation (Level 4).² Current concerns with drivers' relationships with their vehicles and liability results from a transition from Level 2 to Level 3.³ With Level 3 automation, drivers are still expected to monitor vehicle operations and to be ready to resume control if necessary.⁴ Automakers are designing communications systems that can alert drivers whether or not autonomous technologies are engaged and when the human driver needs to reassume control of the vehicle if an autonomous feature becomes disengaged or ineffective. This requires drivers to be familiar with the technology, to be monitoring the systems, and to be capable of reassuming control as needed.

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So, who is liable in the event of an automobile accident? Some legal scholars suggest assessing responsibility using products liability principles and focusing on the driver's level of reliance on the autonomous vehicle.

- In purely autonomous mode, probably the manufacturer is liable based on manufacturing defect or design defect⁵
- If autonomous mode is disabled, probably the driver is liable due to negligence
- When switching in and out of autonomous mode, probably the driver is liable, except manufacturer's liability may be extended even in cases of driver error due to manufacturer's failure to warn, or warning defect (Swanson, 2014; Gurney, 2013).

Determining the driver's level of reliance on autonomous features can be problematic, especially if one debates the appropriateness of driver decisions to engage and disengage autonomous features. Another complication stems from the failure to warn or warning defect, whereby manufacturers have a duty to provide instructions on the safe use of their product and to warn consumers of hidden dangers. Situations that seem to be driver negligence could be turned into manufacturer's liability if it can be shown that manufacturer training programs were inadequate for the general driving population.

Complicated assessments of liability continue even as automation moves to Level 4: Full Self-Driving Automation. The occupants of the vehicle should not be liable for an accident if they have no control of the vehicle's operation. However, what if passenger delays getting in or out of the vehicle contribute to an accident occurring? What responsibility does the owner of the vehicle have for proper maintenance of the autonomous systems? There will likely not be a single manufacturer to hold responsible either. "The list of potential parties includes the vehicle manufacturer, the manufacturer of a component used in the autonomous system, the software engineer who programmed the code for the autonomous operation of the vehicle, and the road designer in the case of an intelligent road system that helps control the vehicle."⁶ Attorneys in California even suggest it may become necessary to examine what ethical guidelines were incorporated into the vehicle's software!⁷

No-Fault Automobile Insurance: A New Beginning

The concept of no-fault auto insurance was introduced in the 1960's and implemented in the 1970's.⁸ The purpose of no-fault auto insurance is to reduce (or eliminate) the amount of money going to administrative and legal fees spent in the tort liability system to determine

who is at fault in an accident. Instead, those dollars can be used to pay for actual damages incurred in automobile accidents, resulting in more equitable compensation for economic losses paid, and with compensation paid in a more timely manner. Two elements must be present in no-fault automobile regimes: (1) payment of no-fault first party benefits (called personal injury protection or PIP), and (2) restrictions on the right to sue, or limited tort options. States adopting no-fault laws utilize either verbal thresholds that determine under what circumstances an injured party may sue for non-economic damages (often called pain and suffering), typically limiting lawsuits to cases in which serious and permanent injury occurred, or monetary thresholds, limiting lawsuits to cases in which damages exceed a specified dollar amount. After an initial burst of state adoptions of no-fault laws in the early 1970's, use of no-fault auto insurance has declined. Reasons for the failure of no-fault auto insurance plans to proliferate include opposition from trial lawyers and the failure of no-fault plans to lower premiums.⁹

Why should no-fault auto insurance be reconsidered given its presumably less than stellar past? (O'Connell, Kinzler, and Miller, 2011) present an excellent argument that the shortcomings of no-fault insurance have more to do with how no-fault statutes are structured by state legislators and less to do with the concept itself. The PIP benefits mandated under state laws are not balanced with stringent enough verbal and monetary thresholds. Easy to reach thresholds result in an insufficient reduction in tort claims to offset the PIP benefits provided. Even with such imbalance, their review of forty years of state experimentation with no-fault insurance shows that "data support the notion that no-fault is a far better compensation system than tort: it succeeds in paying more people faster and more in line with their economic needs" (O'Connell, Kinzler, and Miller, 2011 p.13). Their analysis also estimates a savings of over \$30 billion if all motorists elected to forego suits for pain and suffering.¹⁰

Options for Dealing with Changing Liability Issues

Merging Driver Negligence Tort Liability with Products Liability

As noted earlier in this paper (Types of Technological Change and Associated Liability Issues), an argument can be made that existing legal doctrines of liability, namely negligence and products liability, are sufficient to handle the changing nature of liability caused by the introduction of autonomous vehicles. (For example, see Swanson, 2014; Gurney, 2013.) This approach could result in an explosion of claims costs due

to complications surrounding the assessment of liability for automobile accidents, especially during the transition period from full driver control to fully automated control. In addition, uncertain and potentially high products liability claims could slow the introduction of autonomous technologies.¹¹

Federal Intervention with a Fund to Pay Claims Resulting from Automobile Accidents

Concerns that liability exposure will slow the development and introduction of autonomous vehicle technology have resulted in proposals to provide protection for manufacturers of the technology through the use of Federally-mandated claims funds to compensate injured parties in automobile accidents. (Turner, 2013) suggests the use of a system similar to the National Vaccine Injury Compensation Program, that evaluates, processes, and pays claims resulting from injuries caused by vaccines. The program is administered by the Department of Health and Human Services and the Justice Department. The claims fund is financed with a \$0.75 per dose excise tax on vaccines. The social good associated with the development and use of vaccines warranted liability protection for the vaccine manufacturers. Turner does not provide details on how the claims fund will be financed. It is a more complicated task to determine who is at risk and who may benefit from a claim settlement with autonomous vehicles than it is with vaccines. The population of vaccine users is easily identified with the cost almost imperceptibly added to the price of each dose. Those not receiving vaccines are not subsidizing those who do receive vaccines. Insulating manufacturers from liability can also create an incentive for manufacturers to take excessive risks and bring products to market too early for competitive advantage.

In similar fashion, Schroll, (2015) advocates for the elimination of liability for any accidents involving self-driving automobiles along with the creation of a National Car Insurance Fund to pay for all damages resulting from those accidents. The proposal calls for elimination of punitive damages and leaves to Congress the task of determining which losses (economic and noneconomic) the Fund will cover. A government agency will be in charge of both processing and paying claims. Schroll believes this structure will make compensatory damages more uniform and less excessive than the current damage awards made by juries. The Fund will be financed by contributions from car manufacturers based on how many autonomous vehicles they produce in a given year, by ride-sharing companies based on the size of their autonomous fleet, and by riders based on their frequency of use, resulting in those who are most likely to receive compensation from the fund paying the most in taxes into the fund¹².

Manufacturer and ride-sharing company contribution rates per car could initially be the same for all entities, but then be adjusted in the future based on actual loss experience. This level of underwriting may provide incentives to manufacturers to make safety improvements and to ride-sharing companies to purchase the safest autonomous vehicles for their services. Schroll's National Car Insurance Fund structure is designed for a future time when all vehicles are autonomous.

Revised No-Fault: The Best Choice

Schroll, (2015) likens the structure of the National Car Insurance Fund to Social Security Disability Insurance and to the Affordable Care Act's provision requiring health insurance for all citizens. She notes that the larger the pool, the lower the premium payment will be for each insured. Perhaps these comparisons are not the best choices when advocating for a Federally-run National Car Insurance Fund. The Social Security Disability Trust Fund will soon be insufficient to pay promised claims,¹³ while large insurance companies are exiting the health insurance exchanges of the Affordable Care Act due to significant losses resulting from insufficient numbers of younger and healthier enrollees. While it may be altruistic for those at lower risk to subsidize those at higher risk, it may not be feasible in the United States. This is especially true in the next few decades as autonomous vehicles are likely to become more prevalent, but during which time conventional vehicles will still be on the roads. A social insurance program depends on participants facing similar risks and expecting similar rewards. It is expected that fully-autonomous cars will be much more expensive and perhaps viewed by many as only for the wealthy. Getting the support of large segments of the population today to shield manufacturers from uncertain liability costs so they will introduce technologies that are likely to be seen by many as beneficial only in some futuristic time is difficult at best. Schroll herself states that many barriers exist to creating a new, large-scale government program such as she is proposing, and that it will be more feasible when all automobiles are autonomous.

A revised no-fault system run by private insurance companies can provide similar benefits and avoid some potential problems. Revisions to existing no-fault statutes, however, will require a shift in the public's view of the pervasiveness of the benefits provided by autonomous technology. Consumers need to be willing to accept restrictions on their rights to sue in the event of an automobile accident. Consumer education is necessary to highlight the potential for lower

insurance premiums if verbal thresholds are sufficiently stringent to save expenses associated with tort liability lawsuits. Balance has to be achieved between promised PIP benefits and tort limitations.

No-fault insurance provided by private insurers avoids many political and perceptual problems which would be present with a Federally-run insurance fund. The current distrust of the government and huge national debt makes it unlikely that a Federal Fund plan could be passed. Voters are likely to be suspicious of how effectively and efficiently a government agency could administer their automobile insurance claims, and whether or not benefit levels may become politicized. Would democratic administrations try to increase benefits while republican administrations try to limit benefits to reduce deficits? Can consistency be maintained in a government run program?

Private insurance companies are better equipped to assess risk and determine premium levels. The mixture of autonomous vehicles with conventional vehicles is likely to vary in different parts of the country and between rural and urban areas. The use of ride-sharing services is also likely to vary significantly based on population density. Insurance customers should be able to decide on the level of PIP benefits they desire and the amount of risk they are willing to retain. Insurance companies are better able to provide a variety of options than a one-size-fits-all government program. Insurance companies are already experimenting with paying insurance premiums by the mile when involved in ride-sharing services.¹⁴ Innovations such as these could work well in a world of more autonomous vehicles.

Conclusion

Autonomous vehicle technology is rapidly advancing and fully self-driving cars are inevitable. The potential benefits to society of this advanced transportation technology are tremendous, especially in the reduction of automobile accidents and the saving of thousands of lives each year. No matter how good the technology becomes, however, accidents will occur. And more accidents will occur in the early transition period from conventional to autonomous vehicles as new equipment, software, and intelligent transportation systems are developed, tested, and deployed. Autonomous vehicles will mix with conventional vehicles across America's highways. The level of driver awareness, training and sophistication with autonomous systems will vary and change during the implementation period, which could last for decades. Uncertainty regarding liability for damages resulting from automobile accidents involving autonomous vehicles, how-

ever, could deter manufacturers and delay advancements in this area. Automobile liability reform is necessary to avoid delays, and also to fairly compensate accident victims in a new world shifting from driver negligence to product malfunction, defect, or design flaw.

Different approaches to the liability issue have been proposed, but revised no-fault automobile insurance maintained in the private sector offers the most benefits and the best chance of becoming a reality. Adoption of revised no-fault insurance will require action by state legislatures and insurance departments, passing laws that include a balance between PIP benefits and restrictions on tort liability. Adherence to the principles first outlined in the Uniform Motor Vehicle Accident Reparation Act should be maintained to ensure the benefits of no-fault are provided in all jurisdictions.¹⁵ Consumer education programs will be necessary to convince Americans of the benefits of a no-fault system that can facilitate a shift to more autonomous vehicles and still compensate accident victims in a fair manner. America is a litigious society and one in which the party at fault is required to pay. As the determination of who is at fault becomes more difficult and costly, Americans need to accept a no-fault solution.

Notes

1. (Schroll, 2015, p.805): "...the use of AVs will, at a minimum, decrease the percentage of accidents caused by humans while increasing the percentage of accidents caused by product defects and malfunctions. In the current system, approximately 94% of accidents are caused by human error and less than 6% are caused by product defects, but, in a new system dominated by AVs, those numbers are likely to reverse."
2. (NHTSA, 2013, pp. 4-5). No Automation (Level 0): The driver is in complete and sole control of the primary vehicle controls – brake, steering, throttle, and motive power – at all times. Function-specific Automaton (Level 1): One or more specific automated control functions, such as electronic stability control or pre-charged brakes. Combined Function Automation (Level 2): Automation of at least two primary control functions designed to work in unison to relieve the driver of control of those functions, e.g., adaptive cruise control in combination with lane centering. Limited Self-Driving Automation (Level 3): Automation to cede full control of all safety-critical functions under certain traffic or environmental conditions...and to monitor for changes in those conditions requiring transition back to driver control. The driver is expected to be available for occasional control but with sufficiently comfortable transition time. Full Self-Driving Automation (Level 4): The vehicle is designed to perform all safety-critical driving functions and monitor roadway conditions for an entire trip. The driver will provide

- destination or navigation input, but is not expected to be available for control at any time during the trip.
3. Almost all vehicles on the road today fall into Levels 0, 1, or 2, with human error causing the vast majority of accidents. Thus, the current tort liability system can be used to assign liability to the negligent driver.
 4. Experts believe that drivers will continue to be essential to overall safe operation of semi-autonomous vehicles. Although “cars with the right sensors are becoming really good at monitoring the outside world and have quicker response times than humans....People are much better at making decisions under uncertain circumstances” (Pritchard, 2015, p. 4). There must be an efficient and effective interface between technology and human that will allow control of the vehicle to be passed back to the human driver when the technology fails or when outside conditions do not allow the technology to operate as designed. Dan Gage, of the Alliance of Automobile Manufacturers stated, “as an industry...most of us suspect that there will always be someone in that driver’s seat” (Turner, 2013, p.2). State regulations in four states that allow the testing of autonomous vehicles require that “test drivers must be able to resume immediate control at any time in the event of an AV failure or emergency, which requires two things: there must be a driver’s seat with a steering wheel and pedals, and the driver must be in the driver’s seat and monitoring safe operation at all times” (Technology Law and Policy Clinic, 2015, p. 4).
 5. Even desirable innovations could result in lawsuits for design defects, and hence hinder the adoption of beneficial technologies. (Nidhi and Wachs, 2009, p30) provide the following example: “Current liability law on design defects may hinder the efficient adoption of autonomous vehicle technologies. Suppose that a particular type of ‘autobrake’ crash-avoidance technology works to prevent crashes 80 percent of the time. The other 20 percent of the time, however, the technology does not work and the crash occurs as it would have in the absence of the technology. Victims in those crashes may sue the manufacturer and argue that the product was defective because it failed to operate properly in their crashes. Under existing liability doctrine, they have a colorable argument: The product did not work as designed (manufacturing defect), as advertised (tortious misrepresentation), and as warranted (breach of the implied warrant of merchantability). A manufacturer facing a decision as to whether to employ such a technology in its vehicles might very well decide not to, purely on the basis of expected liability costs.
 6. Marchant and Lindor, 2012, p. 1328).
 7. Legal Resources Association, 2015, p. 3: “It may become necessary to determine what ethical guidelines have been incorporated into a computer’s software. If a child runs out into the street, will the self-driving car’s computer risk injury to the vehicle’s occupants to avoid injury to the child pedestrian? What if there is another car in the way? Will the self-driving vehicle’s computer risk injury to that vehicle’s occupants as well or the risk of causing a multi-vehicle accident to save the life of the child in the street.”
 8. (O’Connell, Kinzler, and Miller, 2011, p.3): “...the modern no-fault concept can be traced to a 1965 book titled *Basic Protection for the Traffic Victim: A Blueprint for Reforming Automobile Insurance*, authored by Professor Robert E. Keeton and Jeffrey O’Connell. Between 1971 and 1975, 16 states and the District of Columbia enacted no-fault laws.”
 9. For an excellent review of the history of no-fault auto insurance, see (O’Connell, Kinzler, and Miller, 2011). “Since 1975, however, no state has adopted a no-fault law, due in substantial part to the opposition of the trial bar and the failure of no-fault to lower premiums. Four states and the District of Columbia have repealed their laws. Today, the idea seems almost forgotten” (p.1). Also, see (Insurance Information Institute, February 2014, p. 1): “Currently 12 states and Puerto Rico have no-fault auto insurance laws. Florida, Michigan, New Jersey, New York, and Pennsylvania have verbal thresholds. The other seven states – Hawaii, Kansas, Kentucky, Massachusetts, Minnesota, North Dakota and Utah – use a monetary threshold. Three states have a “choice” no-fault law. In New Jersey, Pennsylvania and Kentucky, motorists may reject the lawsuit threshold and retain the right to sue for any auto-related injury.”
 10. (O’Connell, Kinzler, and Miller, 2011, p.17. Whether motorists will be willing to give up their right to sue for pain and suffering in return for lower premiums has always been a stumbling block for adoption of stringent thresholds. However, evidence from New Jersey suggests that motorists may be willing to agree not to sue if the premium benefits are high enough and if the statute is worded in a way that makes the surrender of pain and suffering claims the default option. “With a surrender of such pain and suffering claims as the default position (i.e., applicable to those who fail to make a choice), nearly all motorists (94.6 percent) have chosen to forego less serious claims for pain and suffering in return for lower premiums. In Pennsylvania, where the default position retains full tort rights, ...the percentage of motorists waiving claims for pain and suffering under a threshold has risen every year since the law was enacted in 1992, such that in 2010, 57 percent made that choice statewide with a much higher percent in Philadelphia” (where premiums tend to be much higher). (O’Connell, Kinzler, and Miller, 2011, p. 15).
 11. (Marchant and Lindor, 2012, pp. 1329-30) illustrate how automobile manufacturers could see much higher numbers of lawsuits with autonomous vehicles: “One other dynamic that may be different in autonomous vehicle crashes is the “who is liable” category in the context of multi-vehicle crashes. In conventional vehicle accidents, an injured person usually sues the manufacturer of his or her own vehicle for failing to provide a crashworthy vehicle....In a crash between two or more vehicles – where at least one vehicle is an autonomous vehicle, and a malfunction or ill-advised maneuver by that vehicle allegedly contributed to the accident – all injured persons in the accident are likely to sue the manufacturer of the autonomous vehicle.”

12. The NHTSA will be responsible for administering the program and for determining contribution rates for the Fund.
13. The following conclusion was made in The 2015 Annual Report of the Board of Trustees of the Federal Old-Age and Survivors Insurance and Federal Disability Insurance Trust Funds, July 22, 2015: "The DI Trust Fund reserves become depleted in the fourth quarter of 2016, at which time continuing income to the DI Trust Fund would be sufficient to pay 81 percent of DI benefits. Therefore, legislative action is needed as soon as possible to address the DI program's financial imbalance."
14. (Taylor, 2016, p. 7): In addressing the need for both personal and commercial coverage for Uber drivers, an auto insurance startup named Metromile introduced a usage-based product. "It offers usage-based insurance in California, Illinois, and Washington (states that have ride-share legislation). Metromile places a device into a car to track how far it is driven. The more miles driven, the more that is paid for insurance. Metromile has partnered with Uber to provide a unique type of insurance. By matching the device with the Uber app, Metromile can determine what miles were personal and what miles were business."¹
15. (O'Connell, Kinzler, and Miller, 2011, p. 3) describe the basic provisions of the Uniform Motor Vehicle Accident Reparation Act (UMVARA), which was developed by the National Conference of Commissioners on Uniform State Laws in August 1972. Although dollar thresholds need to be updated, the main tenets of the UMVARA are still applicable today. "It contained recommendations for the two key components of no-fault – the level of PIP benefits that an injured person was entitled to, regardless of fault, and the threshold restriction on tort suits needed to keep auto insurance premium costs in line with costs under the tort system. UMVARA called for the payment of all 'reasonable charges incurred for reasonably needed products, services, and accommodations' for all medical care and rehabilitation, ...called for a threshold that permitted lawsuits for noneconomic damages only if economic damages were in excess of \$5,000 and only 'if the accident causes death, significant permanent injury, serious permanent disfigurement, or more than six months of inability of the injured person to work in an occupation.'"

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