

California Department of Insurance  
Informational Hearing on Autonomous Vehicle (AV) Insurance Issues  
The Tech Museum of Innovation  
“New Venture Hall”  
201 South Market Street  
San Jose, CA 95113  
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In addition to the comments below, allow me to also include in my comments my law review article addressing some of these issues. It may be found at: <http://digitalcommons.law.scu.edu/facpubs/337>

### ***Regulation of Automobile Insurance***

The business of insurance moves in interstate commerce. It can, therefore, be regulated by the federal government. In 1945 Congress, however, ceded the regulation of insurance to the states in the McCarran-Ferguson Act. With rare exception, Congress has been content to leave regulation of insurance to state regulators. Occasionally Congress exercises its power to intervene. ERISA (at least with respect to self-funded employer health plans) and the Patient Protection and Affordable Care Act (ACA) are two notable examples of federal intervention (although the latter was upheld as a “tax”). After the recent failure of a number of financial institutions, the federal regulation of insurance was again mooted. As part of the Dodd-Frank Wall Street Reform and Consumer Protection Act, Congress established the Federal Insurance Office (FIO) attached to the Treasury Department. The FIO’s role to date has been largely to monitor insurance issues.

The regulation of automobile insurance, therefore, falls within the purview of the individual states. Each state has a commissioner or similar official who oversees insurance regulation. Some are elected (as in California) and some are appointed (as in Nevada). [For a list of states with elected or appointed commissioners, see: [http://www.naic.org/documents/members\\_state\\_commissioners\\_elected\\_appointed.pdf](http://www.naic.org/documents/members_state_commissioners_elected_appointed.pdf)] These officials belong to the National Association of Insurance Commissioners (NAIC). The NAIC meets regularly to consider issues of broad significance to insurance and to develop and propose model laws and regulations to promote consistency among states. The NAIC, however, does not have the power to impose its model rules on states.

All states endorse the rule that insurance rates may not be excessive, inadequate, or unfairly discriminatory. One of the main purposes of insurance regulation is to assure that insurers remain solvent enough to pay claims. This purpose is served by the requirement that rates not be “inadequate.” Regulators regularly review the financial condition of insurers to assure their solvency. In addition, all states have some form of insurance guarantee fund (funded by assessments on insurers) to pay claims should an insurer become insolvent. In the context of insurance, “unfairly discriminatory” means that, so far as practical, rates should reflect risk, expenses and reasonable profit. “Excessive” means that insureds are being overcharged because the rate exceeds these parameters.

In the context of automobile insurance, generally speaking states attempt to achieve these goals using three different models: File-and use, use and file, or prior approval. File-and-use and use-and-file states rely primarily on competition to set rates. In these states insurers may either file, then use their rates, or use their rates provided they, within a specified amount of time, file them. Prior approval states, on the other hand, require that rates be first approved before they can be used. California and New York are examples of prior approval states.

In addition to regulating insurance in different ways, states also differ with respect to other details governing automobile insurance. For example, every state except New Hampshire requires some form of mandatory automobile insurance (usually referred to as Financial Responsibility Laws). These laws are designed to insure that a person injured by an automobile has some recourse against a financially responsible party. The minimum amount of insurance required by states, however, is not consistent. For example, California requires drivers to carry a policy with minimum personal injury limits of \$15,000 per person, \$30,000 per accident, and \$5,000 for property damage (usually referred to as a 15/30/5 policy). This limit has not changed since 1967. Alaska requires liability limits of 50/100. Congress, however, exercised its power under the interstate commerce clause to set a minimum limit of \$750,000 for large trucks.

<http://www.insurancejournal.com/news/national/2014/06/13/331775.htm>

[Compare the personal injury liability limits of Alabama (25/50), Alaska (50/100), Arkansas (25/50), Colorado (25/50), Connecticut (20/40), District of Columbia (25/50), Georgia (25/50), Hawaii (20/40), Idaho (25/50), Illinois (20/40), Indiana (25/50), Iowa (20/40), Kansas (25/50), Kentucky (25/50), Maine (50/100), Maryland (20/40), Massachusetts (20/40), Michigan (20/40), Minnesota (30/60), Mississippi (25/50), Missouri (25/50), Montana (25/50), Nebraska (25/50), New Hampshire (25/50 minimum limits, but coverage not mandatory), New Mexico (25/50), New York (25/50 for bodily injury and 50/100 for death), North Carolina (30/60), North Dakota (25/50), Oklahoma (25/50), Oregon (25/50), Rhode Island (25/50), South Carolina (25/50), South Dakota (25/50), Tennessee (25/50), Texas (30/60), Utah (25/65), Vermont (25/50), Virginia (25/50), Washington (25/50), West Virginia (20/40), Wisconsin (25/50—lowered from

50/100 as of 11/1/11), Wyoming (25/50). In addition, many of these states (e.g., New York and Michigan) are “No-Fault” states, thus adding additional layers of first-party protection. See generally, Gary L. Wickert, AUTOMOBILE INSURANCE SUBROGATION IN ALL 50 STATES, (Juris Publishing 2012).]

### **The Standard Automobile Policy**

The standard automobile policy contains a bundle of coverages. While one thinks of a vehicle being covered, the insurance actually insures a constellation of people who have some relationship with the vehicle. For example, those covered for liability may include the named insured, any family member residing with the insured, and any person driving the car with the permission of an insured. The most common coverages are:

- Liability coverage. This covers the insured’s personal liability should the insured be legally liable for the injury to another person. This is the 15/30 in a 15/30/5 policy.
- Physical damage coverage. This covers an insured person if they are legally liable for damage to another’s property. This is the 5 in a 15/30/5 policy.
- Medical payments. This pays medical expenses for anyone occupying your car or an insured who is struck as a pedestrian. The limit is usually fairly modest—between \$4,000 and \$10,000. Importantly, this coverage attaches whether or not the insured is legally liable for the injuries. The claim is against the insured’s own insurance company, and disputes are usually subject to arbitration rather than court proceedings.
- Uninsured/underinsured motorist coverage (UM/UIM). This coverage attaches when the insured is injured by a legally responsible driver who is either uninsured or who carries limits lower than the UM/UIM limits purchased by the insured. In some states this coverage is required, while in others (such as California) it is optional. Some states require “physical contact” between the insured and the other vehicle, while others merely require some level of corroboration. The insured’s claim is against the insured’s own company, and the claim is subject to arbitration rather than court proceedings.
- Physical damage (collision or comprehensive). Collision coverage pays the insured for damage to the insured’s automobile (subject to a deductible) if the car is either struck by another car or the insured damages the car – even through the insured’s fault. Comprehensive covers an array of other damages, such theft, vandalism, and collisions with falling objects or animals. When the insured’s vehicle is struck by a legally liable party insured by a different insurer, the insurer will first pay its insured under the collision coverage, and then seek reimbursement from the other insurer. Insurance companies have agreed to arbitrate these claims in the event that they do not agree.
- Defense Costs. The insurer agrees to assume all costs of defending the insured should a covered claim be made against its insured. In some cases, the value of the right to a defense may exceed the limits of the policy.

--Personal Injury Protection (PIP or no-fault). In states that have adopted PIP, a party suffering personal injury (up to a modest limit) must first seek recovery from its own insurer regardless of who may be “at fault” for the injury. If injuries exceed the threshold amount, the insured may proceed against the injuring party.

Although states have differing minimum financial responsibility requirements, insurance policies that have low limits “adjust” as you cross state lines to conform to the higher limits of the state in which the car is being driven.

### **Automobile Safety**

Although automobile insurance is regulated by each state, minimum levels of safety for automobile design are set at the federal level. The National Highway Traffic Safety Administration (NHTSA) sets standards for the minimum performance of automobiles. NHTSA prescribes standards for, *e.g.*, windshield wipers, trunk releases, seatbelts, airbags, crashworthiness, gasoline mileage and many other aspects of car construction and design. By statute, NHTSA’s regulation of automobile design is governed by rigorous cost/benefit analysis. NHTSA’s requirements preempt any less exacting state standards.

NHTSA has made some broad recommendations with respect to autonomous vehicles (AVs), and, for the convenience of aiding discussion, has described five different levels of automation that have been widely adopted in discussions about AVs.

--Level 0—The driver is in complete and sole control. Think of your 1967 Chevy.

--Level 1—The driver has overall control, but there are one or more features, working independently, that may aid the driver. *E.g.*, electronic stability control and/or dynamic brake support in emergencies.

--Level 2—The car automates two or more primary control functions designed to work in unison. The driver is still responsible for monitoring the roadway and is expected to be in control at all times. Lane maintenance plus collision avoidance/mitigation braking are examples. There are a number of cars on the market today that are at Level 2.

--Level 3—The driver may cede full control of safety-critical functions under certain traffic conditions, but is expected to be available for occasional control with notice and a sufficiently comfortable transition time. These are the cars, such as the Google car, that one sees being tested. This is also the level of automation likely to be available for use by the public in the near future. Google has suggested 2017. Nissan moved its target date from 2020 [<http://nissannews.com/en-US/nissan/usa/releases/nissan-announces-unprecedented-autonomous-drive-benchmarks>]

to 2018 [<http://www.futurecars.com/news/technology/nissan-may-introduce-self-driving-cars-as-early-as-2018>], and some others have announced 2020.

Volvo Developing Accident-Avoiding Self-Driving Cars for the Year 2020.  
<http://www.africatelecomit.com/volvo-begins-testing-self-driving-cars-in-sweden>

--Level 4—The car is fully automated with the expectation that the driver will provide destination navigation input, but the driver is not expected to be available to take control. Indeed, the vehicle could be unoccupied. In May, 2014 Google announced the initial testing of a Level 4 vehicle. [http://www.nytimes.com/2014/05/28/technology/googles-next-phase-in-driverless-cars-no-brakes-or-steering-wheel.html?\\_r=0](http://www.nytimes.com/2014/05/28/technology/googles-next-phase-in-driverless-cars-no-brakes-or-steering-wheel.html?_r=0)

NHTSA has not adopted any standards for the design or safety of AVs. Indeed, NHTSA has stated that “in light of the rapid evolution and wide variations in self-driving technologies, we do not believe that detailed regulation of these technologies is feasible at this time at the federal or state level.” Preliminary Statement of Policy Concerning Automated Vehicles, p. 12-13. [[https://www.google.com/?gws\\_rd=ssl#q=nhtsa+autonomous+driving+level](https://www.google.com/?gws_rd=ssl#q=nhtsa+autonomous+driving+level)]

In this regulatory vacuum, states are moving forward with their own regulations for testing and driving AVs. Thus far, four states (Nevada, California, Michigan and Florida) and the District of Columbia have adopted laws or regulations allowing testing of AVs. Bills are pending in 11 states, and bills have failed in 7 states.  
[http://cyberlaw.stanford.edu/wiki/index.php/Automated Driving: Legislative and Regulatory Acti on#State Bills](http://cyberlaw.stanford.edu/wiki/index.php/Automated_Driving:_Legislative_and_Regulatory_Acti_on#State_Bills)

California Department of Motor Vehicles testing regulations go into effect on September 16, 2014. As mandated by Vehicle Code section 38750, regulations for the operational stage are being drafted and are due to be completed by January 1, 2015. Since no AVs are ready for operation by the public, and the final capabilities of AVs that will be available to consumers are unknown, these state regulations are being adopted in a largely hypothetical mode.

State-by-state regulation and licensing runs the risk of stifling innovation and the deployment of AVs. Programming a vehicle to satisfy 50, possible conflicting, sets of rules and regulations may be difficult, if not impossible. Some federal guidance, and perhaps some preemption, may be helpful. One possible model is the DOT’s Manual on Uniform traffic Control Devices (MUTCD).

Federal Highway Administration (2009). Manual on Uniform Traffic Control Devices. U.S. Department of Transportation. Washington, D.C. <http://mutcd.fhwa.dot.gov/>

This manual promotes consistency among states, while allowing for some limited modifications to suit local needs.

## **How AVs Work**

AVs operate by combining a suite of complementary sensors to “see” the environment around them: lasers (Light Detection and Ranging, or LIDAR), radar, cameras (which, among other things, detect colors which lasers and radar cannot detect), and other technologies. These sensors give the vehicle a 360 degree view of its environment.

When first activated, the vehicle will consult GPS to find its approximate location. It will, then, use the input from its sensors to find its precise location (within 10 centimeters, as explained by one Google official) by feeding the information into a precise, highly annotated mapping program. The car can then drive itself using the maps and the various algorithms designed to insure that it obeys traffic laws and drives safely. They navigate solely based on what they “see” and their programming. The Google car, however, is designed so that it will not engage its self-driving mode until it has received the most recent updated algorithms and mapping. Thus, it is likely that self-driving cars will have a continuing relationship with their manufacturers or programmers that is more extensive and continuous than present automobiles.

At present, self-driving cars in the U.S. do not depend on any communication among cars (Vehicle to vehicle communication--V2V—or vehicle to infrastructure—V2I—communication). In August 2012, the Department of Transportation launched the safety pilot project in Ann Arbor, Mich., where nearly 3,000 vehicles were deployed in the largest-ever road test of V2V technology. In February 2014 NHTSA announced that “it will begin taking steps to enable vehicle-to-vehicle (V2V) communication technology for light vehicles,” including “working on a regulatory proposal that would require V2V devices in new vehicles in a future year . . . .” [NHTSA Press Release: U.S. Department of Transportation Announces Decision to Move Forward with Vehicle-to-Vehicle communication Technology for Light Vehicles (February 3, 2014), available

at: <http://www.nhtsa.gov/About+NHTSA/Press+Releases/2014/USDOT+to+Move+Forward+with+Vehicle-to-Vehicle+Communication+Technology+for+Light+Vehicles>]

[For a more complete presentation on the technology of self-driving cars, see:

[http://forums.xilinx.com/t5/Xcell-Daily-Blog/Must-See-Video-Google-s-self-driving-car-keynote-at-last-month-s/ba-p/473330?goback=.gmr\\_4731574.gde\\_4731574\\_member\\_5885412158535147523](http://forums.xilinx.com/t5/Xcell-Daily-Blog/Must-See-Video-Google-s-self-driving-car-keynote-at-last-month-s/ba-p/473330?goback=.gmr_4731574.gde_4731574_member_5885412158535147523)]

## **Insuring AVs**

How Insurers Create Automobile Insurance Rates

Most insurers create their rates in a two-step process. First they create a “rate plan” to calculate a “base rate.” The insurer looks at the its book of the relevant business and asks the question: How much must the insurer collect in premium to service this book of business over the next rating period, including overhead and profit? For example, if there were 100 insureds all purchasing the same coverage, and it cost \$100 to service this book of business, then the base rate would be \$1. The insurer must collect, on average, \$1 from each policyholder.

Insurers, however, do not charge all policy holders the same amount. This is because policy holders, even if purchasing the same coverage, do not present the same risk of loss. If the insurer charged the same amount, than those who present lower risk would pay too much. Not only would this be “unfairly discriminatory,” but they would, unless mandated to carry coverage, likely drop out of the pool because they are not getting appropriate value for their premium. This would leave the insurer with a group of policyholders who present a greater risk than the \$1 base rate. If they paid only \$1 for their policies, but on average cost \$1.20 in losses, the insurer would soon be out of business. To avoid this outcome (known in the industry as “adverse selection”), the insurer creates a “class plan.”

The class plan applies “rating factors” to adjust the base rate depending on the risk presented by the policyholder. With respect to automobile insurance, many of the rating factors are familiar: age, sex, driving record, miles driven, location, accident history, vehicle class, credit score (where permitted). California’s regulations permit the use of 19 rating factors for automobile insurance. Many of these rating factors include a welter of subdivisions.

Applying some rating factors to the above example, A’s rate calculation might look something like this. Ms. A is a female, and females as a group have fewer accidents than males. A neutral rating factor has a relativity of 1, but as a female, she may have a relativity of .90. Thus, her rate would be \$.90. If the average person drives 12,000 miles per year, then 12,000 miles per year would have a relativity of 1. Ms. A, however, drives 20,000 miles per year. This increases the likelihood of an accident and may yield a relativity of 1.10. This would offset the benefit Ms. A received because of her gender and move her back to a rate of \$1. Sadly, Ms. A also has a poor driving record, having been convicted of three moving violations in the past three years. This driving record may yield a relativity of 1.20. Now Ms. A’s premium would move from \$1 to \$1.20. Ms. A may, however, enjoy some downward adjustments if the automobile is garaged in an area with fewer claims or (if her state permits its use) she has a good credit score. The combination of all of the rating factors and their relativities yields the ultimate rate Ms. A must pay for her policy.

Formulating a class plan is largely a zero-sum game. If a relativity lowers a rate for some policyholders, that lower rate must be balanced by a higher rate for some others in the class plan.

Thus, a lower rate for a low mileage driver would likely be balanced by higher rates for higher mileage drivers. When done correctly, the net rate over the book of policies will equal the base rate (\$1 in the above example).

Calculating appropriate relativities is a very sophisticated undertaking. It involves analyzing large amounts of data collected by insurers from their own loss experiences and from other sources. This information is then utilized by actuaries to predict the frequency and severity of future losses over the policy period for each of the characteristics evidenced by the insured. This includes predicting future trends in losses. It is possible, for example, that medical or repair costs are predicted to rise over the policy period. It is also possible that gasoline prices may spike, causing less driving and fewer accidents over the policy period. Trend is one of the most difficult factors to predict and, where insurance rates are subject to prior approval (as in California), disputes over the future trend for losses occupy much of the regulator's attention.

### **Emerging Issues for Insuring AVs**

NHTSA estimates that 93.3% of accidents are caused, at least in part, by human error. If correct, this figure suggests that the elimination of human error can substantially reduce injuries and deaths caused by automobile accidents. NHTSA also estimates that automobile accidents cost \$871 billion in economic and societal impact losses per year in the U.S. alone. This suggests substantial economic advantages can flow from eliminating a large number of these accidents.

It is likely that self-driving cars will not be totally autonomous for a number of years. They will operate in a shared driving mode (NHTSA Level 3) in which the driver may trust the driving to the car, but must be available on adequate notice to take over the driving. In addition, there will be circumstances, such as the present inability to drive in snow, where the vehicle must be driven by the operator. Thus, there are parts of the country where the benefits of self-driving vehicles will not be as great as in others. It is unlikely, therefore, that the savings from self-driving vehicles will match, or come close to matching, NHTSA's estimates of the current costs of accidents.

For that portion of the shared driving experience in which the operator manually drives the automobile, insurance and the calculation of insurance rates should be fairly straightforward. There will be some adjustments that will account for the fact that the automobile, when in manual mode, will more frequently be driven in more dangerous circumstances. Urban driving, driving in construction zones, driving in snow or inclement weather are examples. The Casualty Actuarial Society is presently studying how much potential savings may be expected as self-driving cars are introduced. [Contact Michael Stienstra, Chair: [michael.stienstra@us.qbe.com](mailto:michael.stienstra@us.qbe.com)]



To the extent that these losses are presently insured (some, such as the cost of congestion, are not), and the cars are moving in self-driving mode, the cars should enjoy lower insurance rates. One study suggested an average saving of \$475/driver/year. [Princeton Autonomous Vehicle Engineering (PAVE)]. These savings will either flow to the insurer's bottom line, or, either because of competition or rate regulation, will be savings to the policyholder. One would expect regulators in prior approval states, such as in California, to make every attempt to pass these savings on to policyholders.

Passing these savings to the policyholder has two principle benefits. It helps consumers with lower rates, and it will encourage drivers to purchase these vehicles. There are differing estimates as to the cost of equipping an automobile to drive itself. Some are concerned that the higher price will deter many from purchasing the automobile, or create a class difference between those who can afford a self-driving vehicle and those who cannot. If, however, insurance savings over the life of the vehicle off-set the additional cost of equipping the vehicle, cost should neither deter acceptance nor create two classes of drivers.

Creating an awareness in consumers of the interplay between the added vehicle cost and the lower insurance costs is a marketing issue. One model is that used to inform consumers of the energy efficiency of some appliances, such as water heaters and refrigerators. In that context, consumers are now accustomed to pricing an appliance with its future costs in mind. The same could be applied to vehicles.

Having in mind that rates must be neither excessive, inadequate, nor unfairly discriminatory, regulators and insurers will face some new challenges as these vehicles are introduced. Automobile insurance rates are based on extensive data bases. Apart from testing data, which may or may not be available to insurers or regulators (OEM's and others may treat this information as a trade secret), there will be a considerable amount of guesswork going into initial rate making. In addition, the added technology may raise repair costs. Perhaps they will be offset by lower frequency, perhaps not. Insurers would be inclined to play it safe by estimating higher rates, while regulators may be inclined to protect consumers and encourage adoption of this safer technology by estimating lower rates. Similar challenges have been confronted when new safety measures, such as rear-window mounted tail lights, were introduced. Some insurers are working with OEMs to insure that they understand the new technology well enough to propose realistic insurance products and rates.

In time, there will be a growing data base, however it will likely be much less static than data bases for current vehicles. OEMs will continually improve and update their algorithms, and these will be downloaded to all of the vehicles in the fleet. This could happen daily, or perhaps on a virtually continuous basis. As a consequence, yesterday's self-driving car will not be the

same as today's or tomorrow's. Given the rapid advances of technology in other areas, one can expect the safety of these vehicles to rapidly improve. An insurance system that can respond to these improvements with similar alacrity will deliver numerous benefits. Many regulatory systems in prior approval states, however, are not presently equipped to quickly adjust rates. In California, for example, an insurer may not change a rate either up or down without filing a complete rate application. Many other states allow some degree of flexibility without prior approval. For a list of states and their regulatory framework, see: <http://www.iii.org/issue-update/regulation-modernization>. This regulatory challenge is only just beginning to be confronted.

### Liability Related Insurance Issues

Liability issues drive automobile insurance issues because a major function of automobile policies is to insure against liability of the insured or (in the case of uninsured/underinsured motorist coverage (UM/UIM)) the liability of another. A typical insuring clause in the liability portion of a policy insures the "insured" for any amounts up to the policy limits for which the insured may become "legally liable." UM/UIM coverage compensates those injured by UM/UIM drivers up to the policy limits of the UM/UIM coverage only if the insured is "legally entitled to recover" from the uninsured or underinsured driver. Thus, legal responsibility is the lynchpin of both of these important coverages.

Self-driving vehicles will challenge these traditional insurance models for several reasons. To the extent self-driving vehicles are driven in manual mode, one would expect liability and insurance to look much as it does at present. In order accurately to rate this portion of the driving, insurers will need to know how many miles the car is driven in manual mode and what the nature of this driving is (snow, urban, construction, etc.). This may present some privacy issues.

If the vehicle causes an accident while operating in self-driving mode, under present products liability law the responsibility would be allocated to those in the commercial chain (dealer, OEM, possible the programming entity if different, etc.) rather than the driver. [See *Fluor Co. v. Jeppesen & Co.*, 170 Cal. App.3d 468 (1985)(air chart treated as "product" when error in map contributed to crash)]. If the operator were sued, the automobile insurer would have a duty to defend under the policy. However, once it is shown that the operator was not "legally liable" for the accident, the traditional policy should not pay for the damages.

Similarly, if a person were hit by a UM/UIM vehicle, there would be coverage if the uninsured or underinsured vehicle were driven in manual mode. If in self-driving mode, however, then the injured party would not be "legally entitled to recover" from the operator of the uninsured or underinsured vehicle. Therefore, under present policies, the UM/UIM coverage

would not apply. Rather than a UM/UIM claim against the insured's own insurance company, the insured's claim would be a products liability claim against those in the commercial chain.

A product's liability claim has the potential of being much more complex. It may also present special challenges if the manufacturer is no longer solvent or available. Although "New GM" established a fund and process to compensate those injured by its defectively designed ignition switches, its official position is that it is not legally responsible for Old GM's defective products. Those liabilities were discharged in bankruptcy. [For a colorful commentary on this issue, see: <http://thenecessaryandproperblog.blogspot.com/2014/06/further-on-effect-of-gm-bankruptcy-on.html> See also: <http://www.insurancejournal.com/news/national/2014/03/20/323778.htm>] Unlike insurance companies, at present there is no guarantee fund to insure that those injured by insolvent OEMs are compensated.

Given the shift in responsibility to the commercial marketers of self-driving vehicles, one would also expect that the insurance burden (to the extent they choose to insure) would also shift to commercial policies covering dealers, OEM's and others. Although physically injured parties may have claims against a number of parties in the commercial enterprise, the commercial parties may bargain to distributed any losses (which, with respect to them, are purely economic), among themselves as suits their commercial interests. *Philippine Airlines, Inc. v. McDonnell Douglas Corporation*, 189 Cal. App.3d 236, 234 Cal. Rptr. 423 (1987)

#### Imposing Some or All of the Initial Liability on the Operator

As accidents increasingly become the responsibility of the commercial supplier, policy makers may not be content to make every fender-bender a products liability case. Products liability cases can be complex. While claims against other drivers can be adjusted at an average cost of 5-6%, products liability claims may average as high as 40%. It may be possible to make the vehicle's performance a "non-delegable duty" for which the operator is responsible regardless of the lack of fault. There is some precedent for this approach with respect to brake failure. *Maloney v. Rath*, 69 Cal.2d 442 (1968). If, however, liability remains on the operator for accidents caused by a failure of the product, many will be deterred from purchasing the safer vehicles.

One possible compromise may be to fasten the initial responsibility on the operator up to the minimum financial responsibility limits set by the state. Fault on the part of the driver would be required for any claim beyond the minimum. This would give an injured party a convenient source for compensation for the majority of claims that fall within these limits.

If an insurer paid a claim for which its insured was not at fault, the insurer would have the right to pass the loss to the commercial suppliers. Unlike the insured, it may be possible for insurers to consolidate similar claims against a manufacturer, thus making the processing of the

claims much more efficient. Insurers and manufacturers may even find it in their interest to agree to arbitrate disputed claims. There is an existing model for mutual arbitration agreements. When an insurer pays a collision claim for which another insured may be responsible, insurers have agreed to arbitrate the claims with the responsible party's insurer. These claims are processed very quickly and at minimal expense. A similar model may emerge for dealing with subrogation claims. Insurers' rates should be net of any subrogation recovery (less expenses), so rates should still be lower than at present.

### **Product Liability and Higher Per Claim Costs**

Under the present system, insurance payouts do not accurately reflect insurable losses. It is not uncommon for more serious injuries to go under compensated because insurance coverage is inadequate to compensate for serious injuries. Setting aside possible coverage for health care costs from health insurance or public sources, if a responsible driver carries a minimal policy (e.g., 15/30/5 policy, another policy at the state minimum, or no insurance at all), a seriously injured party is likely to settle with the driver for far less than the party's actual injuries. Sadly, adequacy of compensation for serious injuries depends on the financial sufficiency of the injurer.

This dynamic changes if other sources of coverage or assets become available. As responsibility shifts from drivers to commercial suppliers, more injuries will be compensated at rates closer to their true value because commercial suppliers will have adequate assets or insurance. These injury costs will be passed to vehicle owners in the cost of the car. Passing the true cost of a product, including injury costs, to those who use the product is one of the aims of "strict liability" under products liability tort law. [*Greenman v. Yuba Power Products, Inc.*, 59 Cal.2d 57, 27 Cal.Rptr 697, 377 P.2d 897 (1963), *Phipps v. General Motors Corp.*, 278 Md. 337, 363 a.2d 955 (Ct. App. 1976)(good discussion of rationale for strict liability)]. It is also fairer to innocent injured parties if they must bear fewer of their injuries. It does mean, however, that the reduction in the frequency of accidents with self-driving cars may not net a linear savings to car owners. This is because injuries that would be under or uncompensated now will be compensated at closer to their actual value.

Claims costs may also rise because self-driving cars will likely be more expensive to repair. At the same time, however, costs attributed to assigning responsibility should decrease. Both California and Nevada require the trip data recorder ("black box") to preserve all of the data for the last 30 seconds prior to an accident. With some retraining, adjusters and lawyers should be able to assign responsibility among the driver, the vehicle, or others with relative ease.

Whether the higher claims value and higher repair costs will be off-set by the lower claims frequency and lower adjustment costs remains to be seen.

### **Adoption of Self-Driving Cars**

For reasons stated above, the adoption of self-driving cars will present serious challenges to companies writing traditional personal automobile policies. The threat to their premium base

and business model has been noted. At the same time, the public has much to gain by the adoption of self-driving cars. These challenges and benefits depend to a large extent on the rate at which self-driving cars are adopted.

The average life of a car in the current fleet is approximately eleven years. Thus, if all cars were required to be self-driving cars, one would expect one half of the fleet to be self-driving in approximately eleven years. Electronic Stability Control (ESC) has been required on all light vehicles since 2011, yet the Insurance Institute for Highway Safety (IIHS) and Highway Loss Data Institute (HLDI) estimate that there will not be 95% penetration of ESC until 2030. [See “Advanced Safety Technologies and Other Guideposts on the Road to Vision Zero” at: <http://www.iihs.org/iihs/topics/presentations>] Some manufacturers represent that they will have NHTSA Level 3 self-driving cars available by 2017 or 2018. Others expect theirs to be available by 2020. Since self-driving cars are not mandated and will not be available for several years, one might expect the penetration of self-driving cars to take even longer than ESC.

There are some good reasons to believe that significant penetration may arrive sooner than these estimates. Safety features short of Level 3, such as ESC, do not drive the car to the extent that the driver may put driving time to other productive uses, whether that be texting, reading, or consulting with clients. Adding productive value to driving time should be a substantial incentive for many to adopt self-driving cars. This will especially be so if the insurance savings substantially off-set the added cost of the self-driving components.

Since there are also benefits to the public in general (*e.g.*, less congestion, fewer accidents, better fuel economy, etc.) there will be sound reasons for the public to offer incentives to adopt self-driving automobiles. Tax credits, as apply to electric vehicles, is one approach. Offering money to retire older cars (“Cash for Clunkers”) is already an incentive in place in some states. Air Quality Control Districts in California offer \$1,000 to retire older cars simply because they pollute more than newer ones. Driving in the car-pool lane might also be offered as an incentive, along with, perhaps, a higher legal speed limit. Where trucks are currently limited to 55mph and cars are limited to 65mph, perhaps self-driving cars, because of their enhanced safety features and better reactions, could be permitted an official 75mph limit. There may be other incentives to more quickly introduce self-driving cars.

### **New Models of Insurance**

As mentioned above, under the current legal regime, the role of traditional automobile liability insurance will decrease as the number and severity of accidents decreases and the legal responsibility for accidents shifts away from drivers or operators. Commercial insurance for those in the commercial chain will increase in importance. One would not expect this to present

any special challenges, as commercial insurance has been available for thousands of products in the market place.

Nevertheless, this shift may create an opening for some new and innovative insurance products. Rather than pursuing a products liability claim against a commercial supplier, people may prefer to insure themselves against injury from self-driving cars. Such a policy might resemble UM/UIM insurance (first-party insurance) or health insurance. The insured would have a claim against the insured's own insurance company. The difference would be that the ability to recover would not turn on whether the other driver was liable to the injured person (this will seldom be the case). A first-party claim would be far more convenient and efficient than pursuing a claim directly against the commercial suppliers of the vehicle. Health insurance, which may soon be universal, is of that kind. Even in the event of an automobile accident, the insured's health costs, less any deductibles or co-pays, are covered by the insured's own health insurer without regard to the legal responsibility of any other party. Indeed, health costs, which are often a significant part of an automobile accident injury claim, are covered regardless of fault. The health insurer, however, may or may not have a subrogation claim against the injuring party. For a recent decision discussing the controversial area of subrogation by a health insurers in the context of ERISA, see *Wurtz v. The Rawlings Co.*, \_\_\_ F3d\_\_\_ (2<sup>nd</sup> Cir. 2014) WL 3746801]

If insurers were to employ the UM/UIM or health insurance model to offer a policy covering, for example, pain and suffering, it might be offered as a stand-alone policy or as an endorsement to some other existing policy (*e.g.*, auto policy, homeowners policy or rental policy).

### **The Future of Mandatory Automobile Insurance**

As the dangers of automobiles became apparent, many states adopted some form of mandatory insurance. Having in mind that at one time automobiles were causing approximately 55,000 fatalities per year, some form of mandatory coverage seemed imperative. Eventually every state except New Hampshire adopted some form of mandatory automobile insurance, along with some form of either mandatory or optional UM/UIM insurance.

Much has changed since those days. With far greater population, far more cars, and far more miles driven, the rate of fatalities has declined to approximately 33,000 per year. [See "Advanced Safety Technologies and Other Guideposts on the Road to Vision Zero" at: <http://www.iihs.org/iihs/topics/presentations>] This is still a significant number. Over 10 years this is 40,000 more deaths than the population of Saint Paul, Minnesota. Nevertheless, the introduction of self-driving cars offers the prospect of dramatically reducing this toll, along with the related injury rate.

This raises the question whether it will be necessary to continue mandatory insurance requirements. Although many choose to insure against liability for non-auto related injuries,

usually through endorsements on their homeowners or renters policy, there is no requirement that they do so even though they may engage in any number of dangerous activities. Accidents arising from boating, ATVs, firearms, scalding water, power tools, play equipment, swimming pools, lawnmowers and many other hazards are but a few examples.

Looking further into the future, there will likely be a time when vehicle-to-vehicle (VtoV) and vehicle-to-infrastructure (VtoI) communication play a very important role in transportation and road safety. In February of 2014 the Department of Transportation notified the public that they were beginning the process to require all cars to be VtoV enabled.

Once most or all cars are communicating with one another, it may be almost impossible to assign responsibility for any particular accident. Moreover, it may not be worth the effort. This would suggest that it may be appropriate to consider an entirely different compensation system for those, hopefully rare, accidents. Since the many benefits flowing from such an integrated system accrue not only to the individual driver, but the public in general, a more publicly oriented compensation method may work best.

One possible model is that designed for the rare adverse side effects that flow from vaccines. A \$0.75 tax on each dose of the vaccine funds the National Vaccine Injury Compensation Program. [National Childhood Vaccine Injury Act of 1986 (Public Law 99-660)] Within some limits, those injured by vaccines may recover for their injuries without showing fault, defect, or any other responsibility other than cause. The program is administered by the Federal Court of Claims.

### **Some Different Models for Compensating Those Injured by Self-Driving Cars**

Automobile insurance is not the only way to protect the public with respect to accidents. Automobiles are “goods” under the Uniform Commercial Code and they are “Products” for products liability purposes. Apart from any express warranties, as goods they come to the consumer with implied warranties of merchantability and fitness for purpose. As products, they must be free of defects in design and manufacture (including, in California, satisfying the reasonable expectations of a consumer). In addition, they must be accompanied by adequate warnings. Moreover, claims under the UCC and products liability may be asserted against the OEM and all in the commercial chain of distribution. [*Henningsen v. Bloomfield Motors, Inc.*, 32 N.J. 358, 161 A.ed 69 (1960)]. This may include the entity programming the “map” for the vehicle. [See *Fluor, supra.*]

These rules were developed for the purpose of protecting consumers in much the way insurance protects the consumer. They also fold the costs of injuries into the cost of the goods, thus encouraging the development of safer goods and influencing rational consumer choices by reflecting injury costs in the price.

Since those in the commercial chain are likely to “own” responsibility for injuries caused by cars in self-driving mode, one would expect funding this liability will shift also to the business judgment of those in the chain. OEM’s, for example, may self-fund, retain some of the risk, insure, insure through a captive, or adopt some other model. Since some surveys suggest that drivers believe that they are safer than a self-driving car, marketing self-driving cars with an express warranty of their safety may be an effective marketing tool. If the OEM “owns” the responsibility anyway, there would be little cost to them in making their existing responsibility express.

In addition, it is unlikely that purchasers of automobiles will own the software which drives the car. Like most other computer programs, ownership will remain in the OEM, and the program will be licensed to the operator. In order to keep mapping and algorithms up to date, there will be a constant flow of information between the supplier and the self-driving car. Although there will be some privacy concerns, some flow in information will doubtless be necessary in order to keep self-driving cars as safe as they may reasonable be made.

This flow of information will create a repository of information in the OEM that will be useful both for maintaining and improving the driving of the car, but also for pricing risk. The OEM may use this information for insuring its own risk, but it also presents an opportunity for the OEM to accurately price whatever insurance remains to be purchased by the owner. This may make insurance marketed by an OEM equally or more competitive than marketed by others. In Sweden for example, Volvo markets insurance through its subsidiary, Volvia Insurance.

Ownership of and use of this information, beyond what is reasonably necessary for maintaining and improving the safety of the car, may present some serious privacy issues. California does not permit collection of information beyond mileage.

Licensing, rather than selling, the programs also helps address a separate issue – how to address aging technology. Computers, including personal computers, age and become outdated even with the benefit of updates. Although many cars sold today will run for 20 years, it is doubtful that the technology behind a self-driving car will last that long. Ownership of the program by the OEM will allow the OEM to “retire” dated technology. The OEM could disable technology that is not updated or has become inadequate. This may compel the owner to return to the dealer for the installation of a new processor or program, or return the car to manual mode, or, perhaps, force retirement of the vehicle (with some attendant marketing issues presented by forced retirement).

### **Guarantee Funds for OEMs**



Assuring the solvency of insurers is a primary function of state insurance regulators. When an insurer becomes insolvent, all states also have guarantee funds covering some of the liability for insolvent insurers. Guarantee funds usually have caps on coverage - *e.g.*, \$500,000 in California, although the guarantee is unlimited for workers compensation claims.

There is no similar guarantee fund for suppliers of automobiles. As responsibility for injuries shifts from drivers to OEMs and others in the commercial chain, injured parties must look there for compensation. The financial condition of those in the commercial chain is not regulated or vetted like insurance companies. There are any number of auto manufacturers who have disappeared, and even the well known brand, General Motors, is no longer the same company that bore that name a few years ago. There are also mergers and acquisitions that will raise questions of responsibility for injuries.

This raises the question whether it would be in the public interest to look into ways to guarantee some protection when injured parties may no longer look to the commercial chain for compensation. Much like the National Vaccine Injury Compensation Program, it might be funded with an assessment on sales or licenses. Regulations for the testing of self-driving cars in California have taken a small step in that direction. Testers must maintain \$5 million in insurance, bonds, or audited net worth in order to test self-driving cars on California's public roads.

### **Insurance Issues Unique to California—Proposition 103**

California is the largest insurance market in the United States and also has the largest number of cars on the road of any state. In 1988 California voters adopted Proposition 103. Proposition 103 changed the regulation of insurance in a number of significant ways. California's Commissioner of Insurance would be elected rather than appointed. Policies and rates for many insurance lines, including automobile insurance, would be subject to prior approval. The proposition authorized broad public participation in regulation and rate making and authorized the payment of advocacy fees in appropriate cases. The proposition may be amended only by a 2/3 vote of the legislature, and then only if the changes "further" the purposes of the proposition.

There is little doubt that the voters did not contemplate self-driving cars when they adopted Proposition 103. Nevertheless, there are some mandatory provisions in the Proposition that may prove awkward or hostile when applied to insuring self-driving cars.

#### **Mandatory Rating Factors**

As mentioned above, after establishing a "base rate," insurers adjust the base rate by applying rating factors to each insured. Rating factors match premium more closely to the risk presented by each insured. Matching rates to risk also avoids unfair discrimination and adverse selection.

Proposition 103 established two categories of rating factors. There are three “mandatory” rating factors. Other rating factors, which must be approved by the insurance commissioner, are “optional” rating factors. For automobiles there are 16 optional rating factors.

The mandatory rating factors are

1. Drivers driving record (*e.g.*, accidents and convictions for moving violations)
2. The number of miles driven per year
3. The number of years of driving experience

Regardless of their actual weight compared to other rating factors, each mandatory rating factor must be weighted more than any other optional rating factor. In addition, with respect to each mandatory rating factor, it must be weighted in the above order, with driving record as the most weighty.

Note that the kind of automobile and its capabilities are not among the mandatory rating factors, therefore it must be weighted less than any of the three mandatory rating factors. Thus, even if the self-driving capabilities of an insured vehicle are the most important factors affecting risk, they can be rated no better than fourth in this hierarchy.

For illustration purposes, assume that a car is driven on average 10,000 miles per year. A driver’s driving record and number of years driving experience may have some bearing on the risk presented by driving each of the 10,000 miles. Now assume the same number of miles traveled in a Level 3 vehicle, but the vehicle travels 9,000 miles in self-driving mode and only 1,000 miles in manual mode. Now, for the risk presented by each of the 9,000 miles per year, the capabilities of the vehicle, rather than the driving record or experience of the driver, are far more significant.

### Pumping and Tempering

When a rating factor is forced to bear more or less significance than it deserves, then the rating factor must be “pumped” or “tempered” in order to fit into the regulatory scheme. Thus, if the capabilities of the vehicle are more significant than the driver’s record, the importance of the driver’s record must be “pumped” – *i.e.*, raised in weight - or the vehicle’s capabilities must be “tempered” – *i.e.*, lowered in weight. When rating factors are pumped or tempered, some insureds pay more and others pay less than the risk they present. This creates cross-subsidies among consumers which benefit some and burden others. Whether these cross-subsidies are unfairly discriminatory or the social benefits that flow from the cross-subsidies are sufficiently beneficial is a matter of political debate. Unless the insurance is mandatory, cross-subsidies that are palpable will also encourage those benefited to purchase more insurance and those burdened to purchase less or drop out of the pool. This presents the dangers of adverse selection and moral hazard.

In the example of the automobile driven 9,000 miles in self-driving mode, applying the mandatory rating factors to the 9,000 self-driven miles will likely require pumping driving

record and years of driving experience or tempering the capability of the car. This will distort rates for self-driving cars because owners will not be able fully to benefit from the lower risks they present. If this is so, then it will be reflected in the operating cost of the vehicle and will likely chill, to some degree, their introduction. To the extent that the vehicles are safer than ordinary drivers, this is poor public policy. This is likely to be especially so for a driver with a poor driving record. One would expect poor drivers to be among the group that public policy should encourage to operate self-driving vehicles. Charging higher rates to them for the 9,000 self-driving miles is like charging a poor driver more for a train ticket.

### The Good Driver Discount

In addition to mandating that a driver's driving record and years of driving experience be weighted more than any other rating factor, Proposition 103 also requires all auto insurers to offer a "Good Driver Discount." Insurers are to offer those who qualify a discount of "at least 20% below the rate the insured would otherwise have been charged for the same coverage." Ins. Code sec. 1861.02(b)(2). Since insurance is a zero sum game, any discount to one group must be netted out with a surcharge to another group. With respect to those who benefit from the discount, the difference will likely be made up from those who do not qualify for the discount – *i.e.*, the Not Good Drivers. Like the first mandatory rating factor, the discount turns on the driver's record of accidents or traffic violations. It has been reported that loss of the discount, combined with the impact on the first mandatory rating factor, may raise one's insurance in California by more than 60%.

Since the discount must be offered to all insureds who qualify, a driver with a good driving record may be entitled to a 20% discount when insuring a self-driving car. One with a poor driving record would not only lose the discount but, by dint of the first mandatory rating factor, have to pay even more. If this is correct, then the impact of these mandatory provisions in Proposition 103 will substantially distort insurance rates for self-driving cars. As the manual portion of driving moves ever closer to zero, charging different rates for different driving records or different years of driving experience becomes nonsensical. The "driver" of the car is not the passenger, but the computer and its program. Indeed, at Level 4 there may be no one in the car.

As the pool of self-driving cars increases, there will be more and more operators who qualify for the Good Driver Discount. Very few will suffer accidents or receive citations. If they are entitled to a 20% discount, from whom will the difference be collected? Will it be the increasingly shrinking pool of those with poor driving records? In addition, assume one owns an ordinary car and a self-driving car. Is it sensible for a poor driving record accumulated while driving the ordinary car to cause higher rates on the self-driving car? Artificially high rates on the self-driving vehicles would, again, discourage the penetration of self-driving vehicles, with the concomitant increase in needless injuries and deaths.

### Lowering Insurance Rates

Proposition 103 does not allow insurers to change a rate without filing a "complete rate application." This prohibition applies to both raising and lowering rates. A complete rate

application is both costly and time consuming. It is likely that this prohibition will burden consumers because self-driving cars, which are really computers with wheels, are likely to improve in safety at a rate more consistent with computer development than with Detroit design. As each automobile in a fleet incorporates the most recent download, its safety profile improves. Indeed, in a very real sense a self-driving car that has been updated with an important safety download is not the same car that it was on the previous day. A nimble rate approval system that reflects this would both benefit consumers and encourage the adoption of self-driving vehicles.

Although insurance regulators attempt to insure that rates are not excessive, inadequate or unfairly discriminatory, a number of states allow some degree of flexing up or flexing down without prior approval. This is usually within a range of 5%, 7% or 15%. [For a list of states and their regulatory framework, see: <http://www.iii.org/issue-update/regulation-modernization>] It is likely that the introduction of self-driving cars will encourage states to revisit the alacrity with which insurers should be allowed to flex rates to reflect these rapidly changing safety parameters. At present, Proposition 103 may restrict those options in California.

#### The Insurance Merry-Go-Round

To the extent manual driving and self-driving may be reliably distinguished in the context of accidents, policymakers may be content to require auto insurance only for manually driven miles. To the extent, however, that responsibility, along with defense costs, will alight on the owner or the owner's insurer, insurers will likely pass those costs to the commercial chain. These costs will, then, be reflected in the cost of the car. Although the costs may have initially been incurred in the context of automobile insurance to which Proposition 103 applies, those costs will be passed back to auto purchasers free of any of the Proposition 103 mandated factors. All will pay the same bill in "insurance" cost when purchasing the car – men, women, good drivers, not-good drivers, low mileage drivers, high mileage drivers (although these may expect to replace the car sooner), etc.

Thus, whatever purposes may be served by the mandatory factors, or many other rating factors for that matter, will no longer be achieved. The car will present a risk profile over the fleet, and that will be reflected in the cost of the car free of Proposition 103. Thus, attempting to force self-driving cars into the Proposition's mold is likely to be a futile exercise.

#### Must Proposition 103 Apply to Self-Driving Cars?

It is apparent that the voters did not have self-driving cars in mind when adopting Proposition 103. Must Proposition 103 apply to self-driving cars?

Proposition 103 applies its automobile insurance provisions to "an automobile insurance policy, as described in subdivision (a) of Section 660" of the Insurance Code. Section 660(a) provides as follows:

(a) “Policy” means an automobile liability, automobile physical damage, or automobile collision policy, or any combination thereof, delivered or issued for delivery in this state, insuring a single individual or individuals residing in the same household, as named insured, and under which the insured vehicles therein designated are of the following types only:

(1) A motor vehicle of the private passenger or station wagon type that is not used as a public or livery conveyance for passengers, nor rented to others; or

(2) Any other four-wheel motor vehicle with a load capacity of 1,500 pounds or less; provided, however, that this chapter shall not apply (i) to any policy issued under an automobile assigned risk plan, or (ii) to any policy insuring more than four automobiles, or (iii) to any policy covering garage, automobile sales agency, repair shop, service station, or public parking place operation hazards; or

(3) A motorcycle. [Emphasis added]

This is a very broad definition. Note, however, that section 660 does not use the term “automobile insurance policy.” This may leave some scope for interpretation.

Section 660 does not define “automobile.” When a car is moving as a robot, it is very different from what was considered an “automobile” in 1988. Self-driving cars existed only in fiction, and the technology and insurance issue they present bear little resemblance to those presented by the standard automobile of 1988. Neither “autonomous vehicle” nor “self-driving car” even uses the word “automobile.”

Section 660 speaks only of “insurance.” It does not mention bonds, yet bonds are another way to satisfy financial responsibility requirements and to cover liability. Again, perhaps there is some scope for using these products instead of standard insurance contracts.

Section 660 also exempts “livery vehicles” from its coverage. When in self-driving mode (and certainly when completely autonomous), these vehicles are not driven by the owner. They are driven by a computer which is programmed by others. The others are also paid for the service. There is no doubt that personal automobiles can also be “livery vehicles” during some or all of their driving history. The livery exclusion in most personal auto policies confirms this dual status, and recent legislation governing insurance requirements for Transportation Network Companies (TNC’s) confirms this. Indeed, up until the final amendments, AB 2293 (Bonilla) described cars being driven in TNC mode as “livery vehicles.”

In addition, self-driving cars are regulated by the Department of Motor Vehicles under a completely independent statutory and regulatory scheme. [Vehicle Code section 38750]. Regulations for testing them have been adopted and go into effect on September 16, 2014. Regulations governing the operational stage are presently being drafted and are due to go into effect on January 1, 2015. Self-driving cars are simply “different.” As robots, they fall within an independent and unique legislative and regulatory regimen.

Classifying self-driving cars as livery vehicles may require modification of policies and code sections that presently exclude livery vehicles from liability and UM/UIM coverage. See, e.g., Insurance Code sec. 11580.2(b)—“insured vehicle’ shall not include any automobile while used as a public or livery conveyance.”

The legislature could also amend section 660. If the amendment were interpreted as amending Proposition 103, it must pass by a 2/3 vote. In addition, the legislature may not amend the proposition “except to further its purposes.” See *Foundation for Taxpayer and Consumer Rights v. Garamendi*, 132 Cal. App.4th 1354, 34 Cal. Rptr.3d 354 (2005) (amendment allowing portable persistency invalidated because, although passed by the requisite 2/3 majority, it did not further the purposes of Proposition 103). Since the voters did not have self-driving cars in mind when adopting Proposition 103, it could be argued that excluding self-driving cars from the mandatory rating requirements furthers the purposes of Proposition 103 by allowing its provisions to affect only those who remain in the pool of traditional drivers.

The Commissioner of Insurance enjoys considerable discretion to interpret the optional rating factors in ways that alter their overall relationship with the mandatory rating factors. This discretion was upheld with respect to territorial rating in *Spanish Speaking Citizens’ Found., Inc. v. Low*, 85 Cal. App. 4th 1179; 103 Cal. Rptr. 2d 75 (2000) (discretion in Commissioner to integrate mandatory and optional rating factors with respect to territorial rating). There may be scope for the Commissioner to massage the factors relating to the capabilities of self-driving cars to ameliorate the dislocation cause by applying the mandatory rating factors to them.

Proposition 103 allows insureds to pool themselves into affinity groups. [Insurance Code sec. 1861.12]. While there is some controversy over what relationships constitute an affinity group, including self-driving cars in an affinity group would at least insure that the overall loss experience on which rates are based is directly related to self-driving cars.

Policymakers might require that OEMs assume responsibility for accidents while vehicles are in self-driving mode, and then remove them (much like livery vehicles) from liability coverage under the standard liability policy. This would leave in the pool only those to whom Proposition 103 presently applies.

There would remain some awkward issues with respect to whether the owner should have taken over control and was properly notified to do so. There may also be some owners who will test the technology in foolish ways. A recent on-line video shows passengers and the driver filming their Infiniti, a Level 2 vehicle, in automatic cruise control with no driver in the front seat. While climbing back into the front seat, the video shows the driver accidentally bumping the steering wheel. This maneuver alone could have disastrous consequences!

[ <http://news.yahoo.com/idiot-thinks-infiniti-self-driving-car-does-exactly-172033903.html> ]

If state insurance regulation causes unfairly discriminatory rates to be charged to self-driving cars, the situation may invite federal intervention. Automobile safety and highway safety are important federal concerns. California has more cars on the road than any other state. It California proves to have boxed itself in to a regulatory platform that impedes the penetration of

much safer vehicles, the federal government might be asked to step in. Although the federal government has traditionally left the bulk of insurance regulation to the states, there may be support for a law or regulation insuring that insurance rates do not unfairly discriminate against self-driving cars by artificially raising rates for them. The argument would be especially powerful if the higher rates are, in effect, a cross-subsidy that encourages “good drivers” to continue driving less safe vehicles. The consequences of federal intervention, however, may be unpredictable. Once the issue is on the table, one might expect other stakeholders to use the opportunity to advance broader ends.

## **Conclusions**

Whether rating self-driving cars under a personal liability regime or a products liability regime, insurers will be challenged by lack of data. Testing data and simulations are helpful, but they are a poor substitute for actual data generated by the driving of these vehicles in the hands of the public.

Much of this data, such as it is, may be reported to the DMV under its testing regulations, but it may not be available to insurers or others because it is considered a trade secret by those reporting. Some insurers are working closely with product developers to develop a sufficient understand of the technology and the risks to make an educated guess at appropriate rates. It would be helpful to insurers, and regulators who must assure that rates are not inadequate, excessive, or unfairly discriminatory, if the insurance industry were more closely integrated in the development and approval process.

As self-driving cars move into the market place, they will begin to generate frequency/severity data. Unlike data generated from manually driven vehicles, the credibility of this data may rapidly change. The programs, algorithms and maps driving the automobiles are likely to be updated frequently, if not continuously. Thus, yesterday’ rates may no longer be appropriate for tomorrow’s vehicle. Assuming that self-driving cars will prove much safer than manually driven cars, reducing the insurance burden on owners should increase acceptance of the vehicles. Unfortunately, the regulatory systems of many states, including California, are not geared to nimble rate adjustments. Some states do, however, allow insurers to flex within a range without approval.

While lower frequency and ease of assigning responsibility because of information stored in the black box should push rates lower, two factors push in the opposite direction. As responsibility moves from individuals (who may be underinsured) to the commercial side, the more serious injuries are likely to be adjusted at closer to their actual value. In addition, self-driving cars will likely be more expensive to repair. How these two vectors will interact remains to be seen.

California is in a unique position because of Proposition 103.

Proposition 103 is driver-centric, not vehicle-centric. Two of the three mandatory rating factors (driving record and years of driving experience) assume that there is a driver who is legally responsible for operating the vehicle. Likewise, the Good Driver Discount assumes that there is a driver who, if good, deserves the discount, and if “not good,” then not. These rating factors and the Good Driver Discount would do little mischief if they were not mandatory.

As responsibility for accidents moves from the driver to the commercial side, the attributes of the driver begin to fade in significance. In the fullness of time when Level 4 cars are on the road, there may be occasions when there is no one in the vehicle.

With respect to that portion of driving when the driver is relieved of the duty to drive the car, as the driver will be when Level 3 self-driving cars are introduced in a few years, the mandatory rating factors and Good Driver Discount may cause unreasonable variations in rates. A driver with a good record may pay less for insurance even though the car is seldom driven by the driver. A driver with a poor driving record – the very people who should be encouraged to adopt self-driving cars – may have to pay more. This is both unfairly discriminatory and poor public policy.

There are a number of possible ways to avoid this result:

--Interpret or amend Insurance Code sec. 660 to exclude that portion of policies that cover self-driving miles. The present “livery exclusion” and insurance legislation relating to TNC’s may present a model. Applying the mandatory rating factors to liabilities generated by the vehicle rather than the driver is a pointless exercise because, one way or another, the costs of these accidents will fall on the commercial suppliers. They will simply incorporate those costs into the cost of the vehicle free of any of the restraints imposed by Proposition 103’s mandates.

--Create affinity groups of self-driving cars so that only self-driving cars are rated in the pool.

--Use the Commissioner’s discretion over rating factors to raise the capabilities of the vehicle to a more significant level.

--Recognize that policies today (including UM/UIM) cover only injuries for which the driver is legally liable. Exclude products claims from the calculation (other than defense costs necessary to demonstrate that the driver is not responsible).

--Automobile safety is a federal concern. NHTSA sets standards for vehicle safety design and will, no doubt, participate in issues relating to self-driving cars. These standards preempt state law. To the extent that state insurance regulations impede the introduction of safer vehicles, there may be an incentive for federal intercession.

--In the more distant future, as self-driving cars begin to dominate the market, the public may prefer to insure itself against injuries caused by faulty cars and faultless drivers. There may be a market for first party insurance (something like UM/UIM) to compensate for these kinds of



claims. Health care costs, which are a large part of claims for more serious injuries, are of this kind.

--As we move even further into the future, it is likely that automobiles will both communicate with each other (VtoV) and communicate with the infrastructure (VtoI). With dozens of cars communicating with each other, when an accident does occur in this space, it may be impossible to resolve fault, or even cause. It may be appropriate, then, to move to an entirely different system for compensating injuries. Something along the lines of the National Vaccine Injury Compensation Program may be appropriate.