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# THE UNNATURAL DISASTER OF INSURANCE, UNDERINSURANCE, AND NATURAL DISASTERS

KENNETH S. KLEIN\*

## ABSTRACT

*This article presents a novel data set describing the frequency of materially inadequate homeowner insurance in the event of a total loss. For decades, after a natural disaster, large percentages of homeowners who have lost their homes report suffering a second devastating loss—that, entirely to their surprise, they are vastly underinsured. These reports provocatively suggest that a large majority of all insured homes in the United States—not just homes destroyed by a natural disaster—might be profoundly, unknowingly, and unintentionally underinsured. Insurance companies reject this possibility. Insurers posit that underinsurance is rare, that other than after natural disasters it may be almost unheard of, and that no matter when it occurs, homeowners are at best complicit. Until now, there has not been robust data that could resolve insurers' and insureds' competing narratives.*

*The novel data set presented in this article may end the ambiguity of data on the frequency of and predominant cause of underinsurance. The new data describes that the point-of-sale algorithms insurers ubiquitously use to estimate how much it would cost to rebuild the insured home, and homeowners then almost inevitably rely upon to identify adequate policy coverage, persistently understate costs.*

*By clarifying the cause of underinsurance, the novel data set also explains why underinsurance persists despite the collective desire of homeowners, insurers, and regulators that homes be fully insured. The data exposing the algorithm error rate heretofore only has been visible to insurers. This heretofore has left insurers with an untenable choice. An insurer who unilaterally corrects for the error also must unilaterally raise coverage and premiums, and so will be at a competitive disadvantage. But antitrust laws put insurers in legal peril if they act collectively.*

*This article, after presenting the data and its implications, ends by proposing a new jurisprudential paradigm allowing insurers to profitably and successfully compete while resolving the ubiquity of homeowners being unwittingly underinsured.*

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## I. INTRODUCTION

This article applies a novel data set<sup>1</sup> to clarify a decades-long, acidic reign of confusion about the adequacy of homeowner insurance. By doing so, this article pulls from the shadows the likely true causes for an unnatural disaster of frequent, profound, unintended underinsurance, and points the way to a new, more equitable jurisprudential resolution.

Insurance is important. Sea levels are rising while almost half of the population of the United States lives in a coastal county.<sup>2</sup> Between wind, water, and wildfire, living inland is not any better.<sup>3</sup> Insurance can't eliminate the carnage, but it can and should speed recovery, improve resiliency, and compensate loss. Most importantly, because insurance is a product most necessary when things have gone horribly wrong, at that moment in particular insurance should be more than a siren song promising safe harbor while delivering insufficient relief.

Unintentional underinsurance serves no one's interests. Post-disaster, homeowners simply want their homes back, and governments want fully rebuilt communities. Pre-disaster, insurance agents and brokers want to sell as much insurance as they can, and insurers want sufficient premiums to protect their portfolios from incurred losses.

Intuitively, it might seem that if both insurers and insureds want fully adequate insurance, then absent something unforeseen and extraordinary, almost all insureds would be fully insured.<sup>4</sup> Yet, despite this coherence of interests across all constituencies, it has been anecdotally reported for years that a super-majority of American homeowners are profoundly and unintentionally underinsured.<sup>5</sup> Seemingly after every fire or flood, State insurance departments have been inundated with homeowner complaints

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<sup>1</sup> See *infra* Part V.

<sup>2</sup> See generally Matthew E. Hauer, Elizabeth Fussell, Valerie Mueller, Maxine Burkett, Maia Call, Kali Abel, Robert McLeman, and David Wrathall, *Sea-level Rise and Human Migration*, 1 NATURE REV. EARTH & ENV'T 28 (2020); Jordan Rappaport and Jeffrey D. Sachs, *The United States as a Coastal Nation*, 8 J. ECON. GROWTH 5 (2003).

<sup>3</sup> See NAT'L ASS'N OF INS. COMM'RS, *U.S. Property and Casualty Insurance Industry* 5–6 (2022), <https://content.naic.org/sites/default/files/inline-files/2021%20Annual%20Property%20%26%20Casualty%20and%20Title%20Insurance%20Industry%20Report.pdf>.

<sup>4</sup> Kenneth S. Klein, *When Enough Is Not Enough: Correcting Market Inefficiencies in The Purchase and Sale Of Residential Property Insurance*, 18 VA. J. SOC. POL'Y & L. 345 (2011).

<sup>5</sup> Kenneth S. Klein, *Minding the Protection Gap: Resolving Unintended, Pervasive, Profound Homeowner Underinsurance*, 25 CONN. INS. L. J. 34, 38–40 (2018).

about profound underinsurance, and lawsuits have followed. Insurers have responded with some combination of ‘it was only an estimate,’<sup>6</sup> ‘we did everything we could do,’<sup>7</sup> ‘no one knows their home better than the homeowner,’<sup>8</sup> ‘we told them that if they wanted more we would sell them

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<sup>6</sup> See, e.g., Administrative Rulemaking File for CAL. CODE REGS., tit. 10, § 2695.183 at 87 (“We do not and cannot agree with your stated contention that the policy forms and disclosures, both those mandated and those actually provided, and all of which have been separately reviewed and approved by the Department, are in any way deficient, vague, or ambiguous. If anything, they are demonstrably quite the opposite, being repetitive and redundant to the point of belaboring the point that the determination of replacement cost for any home is at best, and even under ideal circumstances, only an estimate, not a guarantee.”); see also *id.* at 1198 (“no single formula or set of calculations yet devised can produce a replacement cost figure that will prove accurate in all cases. There are simply too many variables . . . to develop a single calculation that guarantees replacement cost has been accurately projected for a given home. . . . it is probably not realistic to expect that such modelling will EVER produce a replacement cost calculation that is 100-percent accurate”); see also *id.* at 1240 (“an estimate is exactly that – it is an estimate.”); Ass’n of Cal. Ins. Cos. v. Jones, 185 Cal. Rptr. 3d 788 (Cal. Ct. App. 2015), *rev’d*, 386 P.3d 1188 (Cal. 2017).

<sup>7</sup> See, e.g., Administrative Rulemaking File for CAL. CODE REGS., tit. 10, § 2695.183 at 371, 379 (“[O]ur estimated replacement cost is calculated using a component-based tool. Over 27 basic home characteristics are taken into consideration with over 150 options to accurately capture the interior and exterior details of a home. . . . Importantly, the [insureds] also expressly were given the option of choosing their dwelling coverage. . . . The decision regarding the limit applicable to Coverage A – Dwelling Protection is your decision to make, as long as you purchase at least the minimum limit [the insurer] specifies and meet certain other requirements.”); *id.* at 1161–62 (“[I]n order to be able to offer various options, which would extend the coverage, that there’s no way around the agent/broker providing some kind of estimate. Again, ultimately, it is the insured’s choice, but there is just no way around that.”); *id.* at 1198–99 (“[O]nly a local residential building contractor or appraiser is likely to have the detailed experience, information and expertise necessary to express an informed opinion on potential rebuilding costs in the event of a total loss in any specific area.”).

<sup>8</sup> See, e.g., *id.* at 1114 (“[I]t is the insured who has the greatest knowledge of what their property may or may not be worth.”).

more,”<sup>9</sup> ‘it is the homeowner’s responsibility to select coverage,’<sup>10</sup> ‘the estimate is no better than the information they told us about their home,’<sup>11</sup> and ‘this all would have been fine (and usually is) but for the home being lost in a natural disaster causing a spike in costs.’<sup>12</sup> Sometimes insurers have won. Sometimes homeowners have won. The resolutions have solved the singular instance at hand but have made little progress on the problem writ large.

This is a contemporary problem. Homeowner insurance is a more recent product than one might suppose, and the risk to a homeowner of profound, unwitting underinsurance only emerged in the 1990s. The first

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<sup>9</sup> See, e.g., *id.* at 163 (“[The insurer’s] estimated replacement cost based on the information collected is just that, only an estimate. The actual amount it will cost to replace a home cannot be known until after a loss has occurred. The decision regarding the limit applicable to Coverage A – Dwelling Protection is your decision to make, as long as you purchase at least the minimum limit [insurer] specifies and meet certain other requirements. Reducing your Coverage A – Dwelling Protection limit could reduce the premium amount you pay. Because this decision is yours to make, you may also want to consider increasing your coverage limit.”); *id.* at 1195 (“Broker-agents have no motivation to sell a lower amount of coverage than is needed to their customer. The implications that agents and insurers do anything less than try to work with the customer to meet their needs is a constant source of frustration felt by the industry.”).

<sup>10</sup> See, e.g., *id.* at 1133 (“[I]t is the responsibility of the policyholder to make that decision, not just here, but in life in general, you have to be the informed consumer, the old caveat emptor concept.”); *id.* at 1198 (“Consumers are in a substantially better position than insurers or broker-agents to know . . . the value of what they own. It is for this reason that California case law long ago recognized the principle that the primary legal duty to select coverage limits falls upon the applicant for, or buyer of, insurance coverage.”).

<sup>11</sup> See, e.g., *id.* at 469 (“You . . . complain that the coverage afforded by the policy is insufficient to rebuild the home. However, such is no fault of ours. At the time the policy was quoted, we used the construction price per square foot that was standard in the industry at the time for average construction in your area. We used the exact information you provided us concerning the home under your policy. We do not have the ability to alter coverage amounts once information is inputted into the system. While this is of little relevance in light of the fact you had never requested additional; or increased coverage, it goes to show that we, as insurance agents, are not property appraisers or experts in the relevant construction costs in your area; our obligation is to procure the policy of insurance requested by you.”).

<sup>12</sup> See, e.g., Elliot Spagat, *Insurance Calculator Questioned: Homeowners Discover Coverage Was Insufficient*, WASH. POST, Jul. 24, 2006, <https://www.washingtonpost.com/wp-dyn/articles/A9509-2004Jul23.html?n%20redirect=on> (“You have such a demand surge in catastrophes like these that a contractor can charge \$300 (a square foot) when he charged \$150 the day before.”).

multi-peril homeowner policy was issued in 1950. For the next several decades, the insuring promise was a guarantee of reconstruction. The insurer would pay the cost even if a home was so comprehensively damaged that it had to be reconstructed from the ground up rather than repaired. While an underestimate of what reconstruction would cost could imperil the financial viability of an insurer, no financial risk existed for a homeowner. In the 1990s, however, insurers began to impose coverage limits on home reconstruction. By no later than the early 2000s, coverage limits—a hard cap on the amount of money an insurer would pay to repair or reconstruct a dwelling—became the industry standard. What became equally ubiquitous by the 2000s was insurers using point-of-sale algorithms to estimate reconstruction costs, insurers sharing those estimates with their insureds, and insureds relying on those estimates to select coverage limits.

Today, there is near ubiquity within homeowner insurance of a limit on available proceeds in the event of a total loss, and when push comes to shove, if those limits result in inadequate insurance, courts accept the insurer defenses—which largely rely on robust disclaimer language in insurance policies and renewal notices—resulting in inadequate insurance to rebuild.

This outcome makes sense if an underlying assumption is accepted: that, as far as insurers know, the point-of-sale reconstruction cost estimation algorithms are generally accurate most of the time. If the algorithms are generally accurate most of the time, then there should be an insurer-exogenous explanation of underinsurance absolving the insurer of liability. And even if the cost algorithms are not accurate, unless the inaccuracy is known or should be known to the insurer (and not known to the homeowner), there still is not an apparent, sound jurisprudential foundation for the allocation of responsibility to the insurer. But do the algorithms have a recurring, predictable error rate known to insurers but not known to homeowners?

Resolving this inquiry could not be more pressing. As the title and thesis of Jeff Goodell's book *The Water Will Come* portends, climate change has moved the discussion about natural disasters destroying communities from “if” to “when.”<sup>13</sup> Consequently, perhaps huge numbers of homeowners are at risk of learning what most of us have yet to confront—we want to be fully insured; we think we are fully insured; we likely are profoundly underinsured.

This is where the data can advance current understanding. This article applies a novel data set to test the hypothesis that, as far as insurers know, the point-of-sale reconstruction cost estimation algorithms are

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<sup>13</sup> JEFF GOODELL, *THE WATER WILL COME: RISING SEAS, SINKING CITIES, AND THE REMAKING OF THE CIVILIZED WORLD* (Little, Brown & Co. 2017).



generally accurate most of the time. The data describes that the hypothesis is wrong.

While the data has been hidden from view, it has been hidden in plain sight of the insurance industry. For many years, this data has been available to insurers but not to anyone else. Indeed, as long as catastrophes were perceived as infrequent, there was little incentive for an external actor to look closely. Total losses seemingly would almost never happen, and so there could not be broad industry-wide patterns.

In 2010, however, the California Department of Insurance (CDOI) looked for and believed it found broad industry-wide patterns of underinsurance. In 2022, as part of the regulatory response in the wake of that finding, the CDOI completed validation of its first large tranche of collected, raw insurance claims data about incurred losses in wildfires. From that information, the author of this article has analyzed “aggregated wildfire risk information received from CDOI on November 9, 2022, pursuant to California Public Records Act requests.”<sup>14</sup>

The conclusions that emerge describe an underinsurance crisis that has been entirely foreseeable, but until now not fully seen. The data describes that after a catastrophe, the likelihood that an insurer’s point-of-sale reconstruction cost estimate will be less than the homeowner’s post-event incurred loss is close to a certainty, and when there is a shortfall, it is by an average of 57%. A homeowner buying 20%, 25%, or even 50% extra coverage doesn’t solve the problem. Many homeowners do buy these extensions (called Extended Replacement Cost coverage, or ERC). Sixty percent of homeowners with ERC who lose their homes in a catastrophe are insured below the insurer’s point-of-sale reconstruction estimate, with the average shortfall at 30%. And while a catastrophe exposes and exacerbates profound underinsurance, apparently, it doesn’t cause it. Rather, when the cause of a destroyed home is *not* a catastrophe, 77.4% of homes will incur a loss greater than the insurer’s point-of-sale reconstruction estimate, with an average shortfall of 35.5%.<sup>15</sup>

Which is not to say that insurers are intentionally defrauding consumers. Rather, one must posit: what should an insurer do with such information? If an insurer acts unilaterally to adjust its point-of-sale estimates, then it will become the highest-priced product on the market; if an insurer acts in concert with its competitors, then it could be exposed to antitrust liability.

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<sup>14</sup> E-mail from Chao Lor, Senior Staff Att’y, Cal. Dep’t of Ins., to Kenneth S. Klein, Louis and Hermoine Brown Professor of L., Cal. W. Sch. of L. (Nov. 30, 2022, 13:55 PST) (on file with author).

<sup>15</sup> See *infra* Part V.

The data suggests a new paradigm is needed for addressing underinsurance. All the extant jurisprudence is in harmony with the presumably uncontroversial principle that an insurer cannot present to an insured what is denominated as ‘an estimate of reconstruction cost’ if the insurer knows the estimate likely is materially understated.<sup>16</sup> The data strongly suggests that is exactly what insurers know (even if they do not know why). Jurisprudence now needs to define a way that insurers can profitably sell insurance intended and likely to be adequate without frequent exposure to losses from lawsuits or to competitors.

These are the matters this article addresses. Part II of this article will briefly trace “the history of underinsurance.” Part III will review competing narratives homeowners and insurers have post-loss when insurance is inadequate to rebuild a lost home. Part IV will review the current jurisprudential landscape sorting through these narratives. Part V will present the novel data set. Part VI will propose a new jurisprudential paradigm for addressing underinsurance.

## II. A BRIEF HISTORY OF UNDERINSURANCE

In the United States, many take it for granted that if they own a home, they have to have homeowner insurance. They assume that if their home is destroyed, they have enough insurance to rebuild it. All of this may be wrong.

### A. THE SURPRISINGLY RECENT HISTORY BOTH OF HOMEOWNER INSURANCE AND OF DWELLING RECONSTRUCTION COVERAGE LIMITS IN THAT INSURANCE

Today, homeowner insurance is ubiquitous. Over 90% of owner-occupied homes in the United States have homeowner insurance.<sup>17</sup> Yet, the ubiquity of homeowner insurance is a relatively contemporary phenomenon. The first homeowner insurance policy was not introduced in the United States until 1950.<sup>18</sup>

The reason that so many homes today nonetheless have homeowner insurance is that a clause in virtually every mortgage requires it.<sup>19</sup> And the reason that mortgages require it is that otherwise, a mortgage without

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<sup>16</sup> See *infra* Part IV.

<sup>17</sup> See Kenneth S. Klein, *Ashes to Ashes: A Way Home for Climate Change Survivors*, 63 ARIZ. L. REV. 679, 693 (2021).

<sup>18</sup> Frederic J. Hunt Jr., *Homeowners – The First Decade*, XLIX PROC. OF THE CAS. ACTUARIAL SOC’Y 12, 12 (1962).

<sup>19</sup> See Klein, *supra* note 17, at 693–97.

insurance would not comply with the guidelines of the Federal National Mortgage Association (FNMA) or the Federal Home Loan Mortgage Corporation (FHLMC).<sup>20</sup>

FNMA and FHLMC requiring homeowner insurance also may be a more recent development than one might think. In 1938, Congress chartered FNMA with the primary purpose of providing stability in the secondary market for residential mortgages.<sup>21</sup> In 1970, Congress likewise chartered FHLMC with the same primary purpose.<sup>22</sup> It is unclear precisely when FNMA or FHLMC guidelines first required a “compliant” mortgage have property insurance. But it can be dated at least to after 1962 since such a sentinel event was not even alluded to in Frederic Hunt’s 1962 paper, *Homeowners – The First Decade*.<sup>23</sup>

Today, standard homeowner insurance covers some but not all perils. The HO-3 Special Form is the most common type of homeowner insurance policy (roughly 82% of all owner-occupied homes nationwide), and covers all perils *except* “flood, earthquake, war, nuclear accident, intentional loss, collapse, mold, wear and tear, seepage, settling, and other perils specifically excluded.”<sup>24</sup> Consequently, most homes are insured for fire and wind perils, but most are not insured for flood.<sup>25</sup> Homes that are insured for flood generally are insured under the National Flood Insurance Program (NFIP).<sup>26</sup>

This distinction between flood and fire matters for understanding the unwitting underinsurance problem. NFIP insurance limits coverage to

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<sup>20</sup> FANNIE MAE, SERVICING GUIDE FANNIE MAE SINGLE FAMILY 173–79 (2022); FREDDIE MAC, SINGLE-FAMILY SELLER/SERVICER GUIDE 4703-1 to 4703-11, 8202-1 to 8202-12 (2023).

<sup>21</sup> *Fannie Mae and Freddie Mac*, FED. HOUS. FIN. AUTH., <https://www.fhfa.gov/about-fannie-mae-freddie-mac>; FED. HOUS. FIN. AUTH., A BRIEF HISTORY OF THE HOUSING GOVERNMENT-SPONSORED ENTERPRISES 2 (2011), <https://www.fhfaoig.gov/Content/Files/History%20of%20the%20Government%20Sponsored%20Enterprises.pdf>.

<sup>22</sup> Federal Home Loan Mortgage Corporation Act, Pub. L. No. 91-351, § 301, 84 Stat. 450 (2010); *Fannie Mae and Freddie Mac*, *supra* note 21; FED. HOUS. FIN. AUTH., *supra* note 21, at 3.

<sup>23</sup> Hunt Jr., *supra* note 18.

<sup>24</sup> FED. INS. OFF., U.S. DEP’T OF THE TREASURY, REPORT PROVIDING AN ASSESSMENT OF THE CURRENT STATE OF THE MARKET FOR NATURAL CATASTROPHE INSURANCE IN THE UNITED STATES at 15–17 (Sept. 2015); *accord* NAT’L ASS’N INS. COMM’RS, A CONSUMER’S GUIDE TO HOME INSURANCE at 7–9, 11 (2022), <https://content.naic.org/sites/default/files/publication-hoi-pp-consumer-homeowners.pdf>.

<sup>25</sup> NAT’L ASS’N INS. COMM’RS, *supra* note 24; Klein, *supra* note 17, at 693.

<sup>26</sup> NAT’L ASS’N INS. COMM’RS, *supra* note 24, at 11; Klein, *supra* note 17, at 691.

\$250,000 for the reconstruction of a single-family dwelling or a two-to-four-family building.<sup>27</sup> In studying how homes become underinsured, the coverage cap presents both an opportunity and a challenge. All NFIP policies are identical except for the selected coverage limit. For homes with an estimated reconstruction cost under the cap, NFIP policies are a useful template for testing the frequency of a homeowner's intended selection of partial, full, or over insurance. However, as a data set for testing the frequency of the adequacy of a homeowner's intended full insurance, NFIP policies are not the richest potential data source. Consider, for example, hurricane-prone and highly populated Florida, which is the State with the most storm surge risk measured either by number of single-family homes or by reconstruction value.<sup>28</sup> Sources like *HomeAdvisor* report that \$295,000 is the average cost to build a home in Florida,<sup>29</sup> which is 18% above NFIP coverage limits.<sup>30</sup> Further, flood insurance is only mandatory for mortgaged homes in designated flood plains.<sup>31</sup> The *voluntary* take-up rate of flood coverage is only 9–10%,<sup>32</sup> and the overall take-up rate is less than 15%.<sup>33</sup> For these reasons, places like flood-prone Florida do not provide an ideal template for studying the frequency and depth of homeowners thinking they are fully insured when they are not. Most homes in Florida don't have flood coverage, and homes that do may not have the option to fully insure.

As a template, wildfire-prone California solves both of these problems. Coverage for fire is quite different from flood as it is part of every standard insurance policy, and over 90% of homes have standard homeowner insurance.<sup>34</sup> Further, there is no NFIP-like, policy-exogenous cap on

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<sup>27</sup> FEMA, NATIONAL FLOOD INSURANCE PROGRAM. FLOOD INSURANCE MANUAL 3.2 to 3.3 (Apr. 2021), [https://www.fema.gov/sites/default/files/documents/fema\\_nfip-all-flood-insurance-manual-apr-2021.pdf](https://www.fema.gov/sites/default/files/documents/fema_nfip-all-flood-insurance-manual-apr-2021.pdf).

<sup>28</sup> INS. INFO. INST., 2021 INSURANCE FACT BOOK at 93–94 (2021), [https://www.iii.org/sites/default/files/docs/pdf/insurance\\_factbook\\_2021.pdf](https://www.iii.org/sites/default/files/docs/pdf/insurance_factbook_2021.pdf).

<sup>29</sup> *Average Costs to Build a House in Florida*, HOMEADVISOR, <https://www.homeadvisor.com/cost/architects-and-engineers/build-house-florida/> (last visited Oct. 7, 2023).

<sup>30</sup> INS. INFO. INST., *supra* note 28, at 113.

<sup>31</sup> See *Flood Insurance*, FEMA, <https://www.fema.gov/flood-insurance> (“Homes and businesses in high-risk flood areas with mortgages from government-backed lenders are required to have flood insurance.”) (last visited Oct. 7, 2023).

<sup>32</sup> Klein, *supra* note 17, at 692.

<sup>33</sup> *Id.*

<sup>34</sup> JAY M. FEINMAN, *DELAY, DENY, DEFEND: WHY INSURANCE COMPANIES DON'T PAY CLAIMS AND WHAT YOU CAN DO ABOUT IT* 122–23 (Portfolio Hardcover, 2010).

adequate insurance. Finally (sadly), there is a large-frequency fire loss data set in California.<sup>35</sup>

Neither flood nor wildfire insurance is new. But the need to study underinsurance is new (relatively). Until the 1990s, not only was almost every home covered for fire, but there was also no possibility of being underinsured. Homes had Guaranteed Replacement Cost coverage (GRC). GRC is what its name suggests—a destroyed home will be reconstructed no matter the cost.<sup>36</sup> While an insurer writing GRC faced financial risk, a homeowner did not.<sup>37</sup> A homeowner with GRC could not be underinsured for a covered peril. By contrast, Replacement Cost Value coverage (RCV) not only imposes upper limits on the financial risk an insurer faces from inaccurately setting premiums for coverage of dwelling reconstruction, but also creates financial risk for the insured.

In the second edition of his book, *Insuring to Value*, Peter Wells recounts the timing of when the industry standard shifted from GRC to RCV:

The era between 1988 and 1997 saw a large number of insurance companies fail, property insurance being the culprit, and owners like Sears, Xerox, and ITT that had purchased insurance entities for cash-flow advantages vacated their holdings. As a result, there was a flurry of activity by homeowner policy writers. They looked for new ways to *cap* replacement cost options in order to reduce the overall risk they insured.<sup>38</sup>

Of course, hand in glove with that shift was the possibility of homeowners having coverage limits that resulted in the homeowner having inadequate funds to reconstruct a home—what this article denominates as “underinsurance.”

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<sup>35</sup> INS. INFO. INST., *supra* note 28, at 155, 158–59 (“Most of the large fires with significant property damage have occurred in California, where some of the fastest developing counties are in forest areas that were once largely uninhabited.”).

<sup>36</sup> NAT’L ASS’N INS. COMM’RS, A SHOPPING TOOL FOR HOMEOWNERS INSURANCE 11 (2014), [https://content.naic.org/sites/default/files/inline-files/committees\\_c\\_trans\\_read\\_wg\\_related\\_shopping\\_tool\\_singles.pdf](https://content.naic.org/sites/default/files/inline-files/committees_c_trans_read_wg_related_shopping_tool_singles.pdf).

<sup>37</sup> PETER M. WELLS, *INSURING TO VALUE: MEETING A CRITICAL NEED* 49–52 (2d ed. 2007).

<sup>38</sup> *Id.* at 53.

B. A BRIEF HISTORY OF POINT-OF-SALE ALGORITHMS TO ESTIMATE RECONSTRUCTION COSTS

In the early decades of homeowner insurance, insurers assumed homes largely were fungible, so reconstruction costs of a home anywhere could confidently be projected at point-of-sale of insurance through a single, simple, per-square-foot calculation with minimal risk of error.<sup>39</sup> As homes became more bespoke, a market opportunity emerged for an algorithm that could more accurately predict construction costs at the time coverage limits were set. Peter Wells saw that opportunity and, in his words, invented “the ‘total component’ methodology and all of its many sophistications built in.”<sup>40</sup> Marshall & Swift/Boeckh (MSB), the company where Wells was President,<sup>41</sup> “coined” the term “total-component cost estimating” to describe its “proprietary component-based valuation system” to estimate reconstruction costs by accounting for all location specific, line-item, labor, materials, profit, overhead, and fees idiosyncratically involved in reconstructing a particular, identified house.<sup>42</sup> The total component methodology is an abandonment of estimating reconstruction cost on a generic per square foot calculation, instead trying to model each cost component of a specific house in a specific location to determine the home’s likely unique reconstruction cost.<sup>43</sup>

The contemporary iteration of the MSB point-of-sale algorithm can be traced back to at least 1991. One month after the Oakland Hills Fire, Wells announced in the trade magazine, *National Underwriter*, a “new and expanded version” of MSB’s “80 Series program for estimating residential and commercial building costs . . . .”<sup>44</sup> By focusing on accurate estimates for high-value homes, Wells said the new version accounted for interior finishes “such as terra cotta tile, marble, and stone finishes for custom rooms such as

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<sup>39</sup> *Id.* at 7–10, 15–18.

<sup>40</sup> E-mail from Peter Wells, Founder and Managing Partner, Peter M. Wells Bus. Grp. L.L.C., to Kenneth S. Klein, Louis and Hermoine Brown Professor of L., Cal. W. Sch. Of L. (Mar. 1, 2023 16:18 EST) (on file with author).

<sup>41</sup> WELLS, *supra* note 37, at *ix*.

<sup>42</sup> *Id.* at 141–46.

<sup>43</sup> *Id.* at 2. *Accord* VERISK ANALYTICS, GET RELIABLE REPLACEMENT COSTS FOR EVERY PROPERTY IN YOUR PORTFOLIO 2 (2022) (“[R]eplacement cost estimates account for the costs needed to reconstruct a property to its original condition—down to the screws and nails.”), <https://www.verisk.com/siteassets/media/downloads/underwriting/360value/get-reliable-replacement-costs-for-every-property-in-your-portfolio.pdf>.

<sup>44</sup> Editorial, *Automation Update: Expanded Building Replacement Cost Software from Marshall & Swift*, NAT. UNDERWRITER, Nov. 4, 1991, at 35.

kitchens, bathrooms, and specialty rooms.”<sup>45</sup> It seems that before 1991, the MSB algorithm accounted for more detail about a house than just the home’s address, age, and square footage but didn’t dig nearly as deep into the precise details of a house as the algorithm did after 1991. Accounting for that level of detail in estimating is perceived to be the conceptual key to total component estimating.<sup>46</sup>

As mentioned earlier, 1996 is toward the tail end of the timeframe when insurers were moving *en masse* from GRC to RCV. In his 2007 book, Wells reflected that the 1996 edition of *Insuring to Value* was also when he and MSB made the pitch for all homeowner insurers to adopt the total component methodology for point-of-sale estimating the reconstruction cost of a home.<sup>47</sup> That pitch apparently worked. Total component cost estimating became standard industry practice, and MSB’s algorithm was used. A 2008 CDOI Market Conduct investigation of the California wildfires of 2007 and 2008 found every insurer it investigated had a replacement cost estimating software tool.<sup>48</sup> Wells asserts, “[b]y 2007, with the exception of a small number of property insurance writers, the homeowner’s insurance market, the entire homeowner’s insurance market . . . was using the MSB RCT tool.”<sup>49</sup> Indeed, as early as 2004, a *Washington Post* report quoted an executive at a rival company saying, “[e]verybody uses Marshall & Swift. They have a monopoly.”<sup>50</sup> Six years later, in 2010, a non-profit focused on underinsurance noted, “[MSB] continues to be the hands-down market leader in providing the software that most insurers require[] agents to use at the point of sale.”<sup>51</sup>

The 2003 Cedar Fire exposed a potential problem for the MSB algorithm. MSB’s software had a “Quick Quote” function that could generate estimates based on *de minimus* inputs, and homeowners alleged that consequently the tool, when used in this way, routinely estimated too low.<sup>52</sup> The explanation was plausible. As noted above, the quality of component

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<sup>45</sup> *Id.*

<sup>46</sup> Scott Amussen & Mike Fulton, *A Balancing Act: Homeowners Writers Strive for Underwriting Efficiency Without Sacrificing Reliable Replacement-Cost Estimates*, BEST’S REV., Nov. 2010, at 41, 42.

<sup>47</sup> WELLS, *supra* note 37, at v, 2.

<sup>48</sup> Administrative Rulemaking File for CAL. CODE REGS., tit. 10, § 2695.183 at 1029.

<sup>49</sup> E-mail from Peter Wells, Founder and Managing Partner, Peter M. Wells Bus. Grp. L.L.C., to Kenneth Klein, Louis and Hermoine Brown Professor of L., Cal. W. Sch. Of L. (Feb. 21, 2023, 05:22 PST) (on file with author).

<sup>50</sup> Spagat, *supra* note 12.

<sup>51</sup> Administrative Rulemaking File for CAL. CODE REGS., tit. 10, § 2695.183 at 1175.

<sup>52</sup> Spagat, *supra* note 12.

cost estimating is dependent upon the details, and for reasons of algorithm design, the less inputs, the less accurate and lower the estimate.<sup>53</sup> This last bit bears repeating—the errors do not distribute neutrally; the software biases low.<sup>54</sup>

The potential problems with Quick Quote are remediable. A California regulation addressed the problem by eliminating the use of Quick Quote; the regulation, effective June 27, 2011, requires that an insurer estimating reconstruction costs must account for, at a minimum, fourteen delineated factors/features of the home.<sup>55</sup>

Just before CDOI began looking closely at the MSB-dominated market, a new player entered the point-of-sale reconstruction estimating business. On October 29, 2007, Verisk Analytics announced its product launch of 360Value, which would (like MSB) be a point-of-sale total component cost algorithm used to estimate Coverage A limits (“Coverage A” is the coverage in a homeowner insurance policy for the repair or reconstruction of the dwelling; it is the coverage that could be either RCV or GRC and could be supplemented by ERC).<sup>56</sup> Verisk touted that the advantage of 360Value over competitor’s products (meaning MSB) was, in no small part, that the core data in 360Value was component price data from actual claims settlements of home repair and reconstruction, which Verisk had through its subsidiary, Xactware.<sup>57</sup> Beginning in 1989, Xactware had “pioneered” a post-loss total component cost algorithm for use in claims adjusting.<sup>58</sup> That post-loss algorithm is called Xactimate. As a post-loss algorithm, Xactimate is the standard—used by twenty-two of the top twenty-five U.S. property insurers, 80% of insurance repair contractors, and seven of the top ten U.S. independent adjusting firms.<sup>59</sup> Verisk was promising the seamless integration of Xactimate into 360Value, which is important because Xactimate takes great expertise and time to accurately input

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<sup>53</sup> Klein, *supra* note 5, at 65–67.

<sup>54</sup> *Id.* See also Kenneth S. Klein, *Is Fire Insurable? Insights from Bushfires in Australia and Wildfires in the United States*, in CLIMATE, SOCIETY AND ELEMENTAL INSURANCE 117 (Kate Booth, Chloe Lucas & Shaun French, eds., Routledge 2022).

<sup>55</sup> CAL. CODE REGS. tit. 10, § 2695.183 (2011).

<sup>56</sup> *ISO, Xactware, and AIR Worldwide Announce 360Value, the Next-Generation Replacement-Cost Estimation*, VERISK ANALYTICS (Oct. 29, 2007), <https://www.verisk.com/archived/iso-xactware-and-air-worldwide-announce-360value-the-next-generation-replacement-cost-estimation/>.

<sup>57</sup> *Id.*

<sup>58</sup> XACTWARE, PRICING RESEARCH METHODOLOGY 2 (2018), <https://eservice.xactware.com/esc/showme/PDF/2021/2441PricingResearchMethodology3a.pdf>.

<sup>59</sup> VERISK ANALYTICS, GET RELIABLE ESTIMATES FOR EVERY PROPERTY IN YOUR BOOK OF BUSINESS 8 (2016) (on file with author).



hundreds of data points to estimate a reconstruction cost;<sup>60</sup> while 360Value empowers a lightly trained insurance agent or broker to input perhaps a couple of dozen “prefills” and the algorithm then would generate an estimate.<sup>61</sup> Verisk believed that 360Value allowed an insurer to “[m]atch the front end to the back end” because “[c]onsistency across your underwriting and claims means no surprises for underwriters or policyholders in the event of a total loss.”<sup>62</sup>

The first reported significant customer of 360Value was in July of 2008, when Verisk announced, “The Farmers Insurance Group of Companies®, the third largest home and auto insurance group in the United States, has selected 360Value™ ([www.360-value.com](http://www.360-value.com)) to estimate reconstruction costs for its high-value home program.”<sup>63</sup>

From there, Verisk’s market penetration appeared to be slow going. Over a year after the Farmers’ press release, when Verisk was making an initial public offering of its common stock, Verisk still was identifying 360Value as a “development initiative” and was not yet seeing itself and MSB as competitors.<sup>64</sup> But in July of 2011, nine days after the effective date of the new California regulation, Verisk announced the Farmers Group of Insurance Companies more broadly had selected 360Value as its tool for all of its “main street” homes in California, reporting:

We have been very pleased with the use of 360Value on our high value book of business,” said Susan Bithell, Vice President of Personal Insurance and Chief Underwriting Officer for Farmers Insurance. “In addition, by capturing the essential details of the home and applying the detailed building costs embedded in 360Value, we are able to

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<sup>60</sup> Klein, *supra* note 5, at 75 –76.

<sup>61</sup> VERISK ANALYTICS, *supra* note 43, at 4, 6 (“Its advanced algorithm chooses the most accurate, up-to-date information . . . to populate each field; Flexible, one-stop, web-based system. You can easily integrate the web-based 360Value replacement-cost estimation system into virtually any underwriting environment. . . . User proficiency in no time. 360Value is easy to learn and use. Agents, underwriters, and others involved in the underwriting process can become proficient in no time; and Speed and reliability.”).

<sup>62</sup> VERISK ANALYTICS, *supra* note 59, at 8.

<sup>63</sup> *Farmers Insurance Selects 360Value to Estimate Reconstruction Costs for High-Value Homes*, VERISK ANALYTICS (July 14, 2008), <https://www.verisk.com/archived/farmers-insurance-selects-360value-to-estimate-reconstruction-costs-for-high-value-homes/>.

<sup>64</sup> Verisk Analytics Inc., Prospectus filed pursuant to Rule 424(b)(4) (Form 424B4) 69, 70 (Oct. 9, 2009).

provide our customers with a reconstruction cost estimate that satisfies the new ITV regulation in California.<sup>65</sup>

That may be all it took for 360Value to gain momentum in the market. While there is no public-facing information about the relative market shares of Verisk and CoreLogic (the company that purchased MSB in 2014<sup>66</sup>), by 2018, the two companies dominated the market.<sup>67</sup> CoreLogic apparently felt the pressure from Verisk, because in the fall of 2018, CoreLogic acquired Symbility, which gave CoreLogic access to claims adjusted reconstruction data just as Verisk had.<sup>68</sup> Nonetheless, by 2022 Verisk claimed “360Value is the most widely used reconstruction cost estimator in the United States.”<sup>69</sup>

There is at least one other entity that offers a point-of-sale algorithm for estimating reconstruction costs. On May 13, 2008, the United States Patent and Trademark Office issued Patent No. 7,373,303 to George Moore and Todd Rissel for a method and system for “estimating building reconstruction costs.”<sup>70</sup> The e2Value methodology assumes the predominant drivers of replacement cost are where a house will be built and what the quality/prestige expectations of builders are for that neighborhood, and is based on algorithms that analyze data on the premise that this dimension is more predictive of accurate costs than detailed component-based price lists.<sup>71</sup> There is no evidence, however, that e2Value has made significant inroads into the market share dominance of Verisk and CoreLogic.

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<sup>65</sup> *Farmers Insurance Selects 360Value for Residential Replacement Cost Estimates*, VERISK ANALYTICS (July 6, 2011), <https://www.verisk.com/archived/farmers-insurance-selects-360value-for-residential-replacement-cost-estimates/>.

<sup>66</sup> *CoreLogic Completes the Acquisition of Marshall & Swift/Boeckh and DataQuick Information Systems*, CISION PR NEWswire (Mar. 25, 2014, 4:05 ET), <https://www.prnewswire.com/news-releases/corelogic-completes-the-acquisition-of-marshall--swiftboeckh-and-dataquick-information-systems-252311851.html>.

<sup>67</sup> Klein, *supra* note 5, at 34, 59.

<sup>68</sup> Caitlin Hotchkiss, *CoreLogic's Acquisition of Symbility Now Complete*, BETAKIT (Jan. 9, 2019), <https://betakit.com/corelogics-acquisition-of-symbility-complete/>.

<sup>69</sup> VERISK ANALYTICS, *Get Reliable Replacement Costs for Every Property in Your Portfolio* 3 (2022), <https://www.verisk.com/siteassets/media/downloads/underwriting/360value/get-reliable-replacement-costs-for-every-property-in-your-portfolio.pdf>.

<sup>70</sup> U.S. Patent No. 7,373,303, at [21] (issued May 13, 2008).

<sup>71</sup> E-mail from Todd Rissel, Chairman and CEO, E2Value, to Kenneth S. Klein, Louis and Hermoine Brown Professor of L., Cal. W. Sch. of L. (Mar. 3, 2018, 11:56 PST) (on file with author).

C. THE EMERGENCE OF APPARENTLY PERSISTENT AND PERVASIVE UNDERINSURANCE

As discussed above, until RCV became the standard, underinsurance really couldn't happen; the promise of Verisk and MSB (and later of CoreLogic) was that properly using their algorithms, underinsurance generally shouldn't happen.

According to Wells, 73% of homes before 2002 were undervalued compared to their reconstruction cost, with an average undervaluation of 35% per home.<sup>72</sup> Wells contended, however, that MSB's algorithm, when used correctly, essentially solved the underinsurance problem.<sup>73</sup> In the second edition of his book, he attributed to his MSB algorithm the explanation for why (by his calculations) by 2006 the pre-2003 frequency of underinsurance had fallen by 15% and the average depth of underinsurance had fallen by 14% (finding as of 2006, underinsurance 58% of the time, and by an average depth of 21%).<sup>74</sup> This may not sound like a solved problem, but Wells believes any lingering underinsurance largely is explained by the failure of insurers to regularly update their estimated reconstruction costs, and the failure of homeowners to update their policies after home remodeling.<sup>75</sup> Verisk projects similar confidence in their algorithm, touting 360Value as providing a "true" replacement cost.<sup>76</sup>

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<sup>72</sup> WELLS, *supra* note 37, at 46.

<sup>73</sup> See Administrative Rulemaking File for CAL. CODE REGS., tit. 10, § 2695.183 at 1236 ("MSB enables insurance professionals to generate complete and accurate replacement cost estimates. . . . Accurate estimating from MSB, proven in the many validation programs we perform serve to protect policyholders from underinsurance situations, while simultaneously enabling the insurance provider to determine the appropriate premium required to mitigate the exposure of risk.").

<sup>74</sup> WELLS, *supra* note 37, at 46, 68, 82, 113.

<sup>75</sup> E-mail from Peter Wells, *supra* note 49. Accord Administrative Rulemaking File for CAL. CODE REGS., tit.10, § 2695.183 at 745 ("Homesite states that it uses the 1.8 version of the Marshall & Swift/Boeckh replacement cost calculator to develop dwelling replacement cost estimates, which it presents to insureds as be an acceptable basis, from Homesite's perspective, upon which to establish dwelling limits. The 1.8 version . . . is designed to give accurate replacement cost estimates if it is used as designed."); FRANK NOTHAFT, AMY GROMOWSKI, ANNETTE TIERNEY, DENISE MOORE, & GUY KOPPERUD, 2019 INSURANCE COVERAGE ADEQUACY REPORT (2019) (on file with author).

<sup>76</sup> See VERISK ANALYTICS, *supra* note 56 ("[A] unique offering that provides true component-based replacement cost estimates and a number of associated underwriting solutions for residential, commercial, and agricultural properties."); VERISK ANALYTICS, *supra* note 59, at 2 ("360Value replacement cost estimates account for all costs needed to reconstruct a property to its original condition—down to the screws and nails. This component-based approach [for residential,

Both Verisk and CoreLogic disclaim that underinsurance is explained either by post-catastrophe demand surge or by more ordinary persistent inflation of the costs of reconstruction. Rather, Verisk and CoreLogic contend that their estimates account for both price demand surge post-disaster and more ordinary annual inflation of building costs.<sup>77</sup>

By 2007, was underinsurance a solved problem but for failures in updating? The numbers suggest not. A consumer-advocacy non-profit, United Policyholders, conducts post-disaster surveys of disaster survivors.<sup>78</sup> Some “key findings” of the United Policyholders surveys have been:

- Twenty-four months after the 2007 Southern California wildfires:
  - “66% of respondents reported being underinsured.”
  - “The average amount by which people reported being underinsured was \$319,500.”<sup>79</sup>
- Twelve months after the 2010 San Bruno Gas Explosion/Fire:
  - “50% of respondents reported being underinsured on their dwelling by an average of over \$200,000.”<sup>80</sup>
- Twelve months after the 2010 Fourmile Canyon Wildfires:
  - “64% of respondents reported being underinsured on their dwelling by an average of over \$200,000.”<sup>81</sup>
- Twelve months after the 2011 Central Texas Wildfires:

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commercial, and agricultural properties] is what sets 360Value apart from other cost-estimating tools.”).

<sup>77</sup> See Trish Hopkinson & Louis Vuksinick, *Current Cost Estimates Key to Manage Lumber’s ‘Demand Surge’*, VERISK ANALYTICS (Aug. 30, 2021), <https://www.verisk.com/insurance/visualize/current-cost-estimates-key-to-manage-lumbers-demand-surge/> (discussing how Verisk tracks and incorporates demand surge into its algorithm for component-level pricing in underwriting); CORELOGIC, 2020 STORM SURGE REPORT 19 (2020), <https://www.nature.org/content/dam/tnc/nature/en/documents/Corelogic-Storm-Surge-report-20200528.pdf> (“CoreLogic uses its RCV methodology, which estimates the cost to rebuild the home in the event of a total loss. . . . Reconstruction cost estimates more accurately reflect the actual cost of damage or destruction of residential buildings that would occur from hurricane-driven storm surge . . . .”); see also NOTHAFT ET AL., *supra* note 75, at 8; WELLS, *supra* note 37, at 151–52; *How Demand Surge After Natural Disasters May Impact the Cost and Timing of Recovery*, CORELOGIC (Oct. 28, 2019), <https://www.corelogic.com/intelligence/how-demand-surge-after-natural-disasters-impacts-the-cost-and-timing-of-recovery/>.

<sup>78</sup> *Data Collection Surveys: Roadmap to Recovery Surveys*, UNITED POLICYHOLDERS <https://uphelp.org/media/surveys/> (last visited Oct. 7, 2023).

<sup>79</sup> *Id.*

<sup>80</sup> *Id.*

<sup>81</sup> *Id.*

- “56% of respondents reported being underinsured on their dwelling by an average of over \$110,000.”<sup>82</sup>
- Twelve months after the 2012 Colorado Wildfires:
  - “In the High Park and Woodland Heights Fires, 54% of survey respondents reported being underinsured on their dwelling by an average of \$101,000.”<sup>83</sup>
  - “In the Waldo Canyon Wildfires, 27.2% of survey respondents reported being underinsured on their dwelling by an average of \$77,000.”<sup>84</sup>
- Twelve months after the 2013 Black Forest Fire:
  - “46% of survey respondents do not have enough insurance to cover the cost of repairing, replacing or rebuilding their house.”<sup>85</sup>
- Six months after the 2015 Valley Fire:
  - “53% of survey respondents do not have enough insurance to cover the cost of repairing, replacing or rebuilding their house by an average of \$103,000.”<sup>86</sup>
- Twenty-four months after the 2017 North Bay Fires:
  - “64% of survey respondents reported they do not have enough insurance to cover the cost of repairing, replacing or rebuilding their home by an average amount of \$367,000.”<sup>87</sup>
- Twenty-four months after the 2018 Camp Fire:
  - “66% of survey respondents reported they do not have enough insurance to cover the cost of repairing, replacing or rebuilding their home.”<sup>88</sup>
- Twelve months after the 2020 Colorado Wildfires:
  - “72% of survey respondents reported that their insurer’s estimates of loss and/or claim payments do not reflect current building costs in the area.”<sup>89</sup>
  - “64% of survey respondents reported they do not have enough insurance to cover the cost of repairing, replacing or rebuilding their home. The average amount survey respondents reported being underinsured by is \$355,000.”<sup>90</sup>

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<sup>82</sup> *Id.*

<sup>83</sup> *Id.*

<sup>84</sup> *Id.*

<sup>85</sup> *Id.*

<sup>86</sup> *Id.*

<sup>87</sup> *Id.*

<sup>88</sup> *Id.*

<sup>89</sup> *Id.*

<sup>90</sup> *Id.*

- Twelve months after the 2020 California Wildfires:
  - “18% of survey respondents reported they have enough insurance to cover the cost of repairing, replacing or rebuilding their home. (42% of survey respondents reported being underinsured and 40% of survey respondents do not know if they have enough insurance to rebuild or replace their home).”<sup>91</sup>
  - “The average amount people reported being underinsured by is \$375,000.”
- Six months after the 2021 Marshall Fire:
  - “A substantial number of households are underinsured and do not have adequate dwelling insurance limits to cover the actual cost of replacing their destroyed assets. This is true despite the fact that the majority of surveyed households reported having “extended replacement cost coverage” which theoretically should have protected them from being underinsured. This finding is supported by the Marshall Fire Claims Data Analysis conducted by the Colorado Division of Insurance.”<sup>92</sup>

As the last of these survey findings references, after the Marshall Fire, the Colorado Division of Insurance engaged directly in trying to quantify the frequency and depth of underinsurance. This was the second time regulators engaged in trying to quantify industry-wide underinsurance, the first being in California after the cumulative experience of the 2003, 2007, and 2008 fire seasons.

In 2022, the Colorado Division of Insurance analyzed 981 total loss claims (8% with GRC, 9% with only RCV, and 83% with both RCV and ERC), and found:

- At a rebuild cost of \$250 per square foot, a total of 344 (36%) policies are underinsured. At \$300 per square foot, 523 (55%) policies are underinsured. At \$350 per square foot, 639 (67%) are underinsured.
- At \$250 per square foot, for the 344 policies, the average amount of underinsurance per policy is estimated at \$98,967. At \$300 per square foot, for the 523 policies, the average amount of underinsurance per policy is estimated at \$164,855. At \$350 per

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<sup>91</sup> *Id.*

<sup>92</sup> *Id.*

square foot, for the 639 policies, the average amount of underinsurance per policy is estimated at \$242,670.<sup>93</sup>

In California in 2010, CDOI reported on a market conduct investigation of underinsurance, explaining,

In 2003, and again in 2007 and 2008 California has experienced significant wildfires leading to the loss of a high number of residential structures. After each of these fires, fire survivors complained about problems including their experience that after the fire they learned that the replacement value estimates made in setting coverage limits for their homes were incomplete or too low, causing underinsurance issues to arise during efforts to rebuild or replace their residences.<sup>94</sup>

As part of the investigation, CDOI commenced an examination of four insurers who together constituted 50% of the homeowner insurance in California: “[t]hese examinations targeted the claim-handling practices related to total losses that resulted from the wildfires, and underwriting practices related to insurance to value and the customer’s selection of coverage limits....”<sup>95</sup> After observing certain underwriting practices, the CDOI provided the following summary:

Similar processes surrounding the estimation of dwelling replacement cost and the selection of Coverage A dwelling limits were observed in each of the four examinations. In general, each insurer had its own replacement cost estimating tool and the value generated by this tool was considered (from the insurer’s perspective) to be the minimum Coverage A limit for which the policy could be issued. Each insurer stated that the insured was responsible for making the limit selection based on his or her knowledge regarding the home, but was able to make use of the

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<sup>93</sup> *Division of Insurance Releases Initial Estimates of Underinsurance for Homes in the Marshall Fire*, COLO. DEP’T OF REGUL. AGENCIES, DIV. OF INS. (Apr. 26, 2022), [https://doi.colorado.gov/news-releases-consumer-advisories/division-of-insurance-releases-initial-estimates-of?utm\\_medium=email&utm\\_source=govdelivery](https://doi.colorado.gov/news-releases-consumer-advisories/division-of-insurance-releases-initial-estimates-of?utm_medium=email&utm_source=govdelivery).

<sup>94</sup> Administrative Rulemaking File for CAL. CODE REGS., tit. 10, § 2695.183 at 1410, 1431, 1474–76.

<sup>95</sup> *Id.* at 1029.

insurer's tool to assist with this selection. There were varying degrees of communication and disclosure to the insured regarding what the estimate generated by the insurer's tool represented, and regarding the insured's duty to determine the amount of coverage he or she determined to be appropriate.<sup>96</sup>

The CDOI examined 188 policies. In 126 of these, the Coverage A limit matched the figure produced by the insurer's tool. In these 126, the Coverage A limit was lower than the cost to rebuild (underinsurance) in 81% of the files. "When factoring in any extended replacement cost coverage that applied, [57%] continued to be underinsured for the total loss."<sup>97</sup> CDOI reached the conclusion these were "representative figures . . . at each insurer and across the four exams."<sup>98</sup>

In tracing the persistence and pervasiveness of underinsurance, one other data set on underinsurance merits mention. In 2020, CDOI published a Market Conduct Examination of insurer, CSAA, and the experience of its insureds in "major-property wildfires during 2015 and 2017" in Northern California.<sup>99</sup> The examination "reviewed 111 claims files and their associated underwriting files selected at random from the Companies' listing of total losses occurring during these fires."<sup>100</sup> Among the findings of CDOI were:

- "Of the 49 claims reviewed from the 2015 wildfires, 18 of those (37%) had insufficient dwelling limits available to rebuild the dwelling even after application of the 50% extended replacement cost coverage to the Coverage A limits. Nine were underinsured by an amount of 10% or more over the Coverage A plus the 50% extended replacement cost coverage."<sup>101</sup>
- "For the 2017 wildfire sample of 62 policy files and their associated claims files, the majority of the claims were still open at the time of examination. Of those containing either an insured's contractor estimate or a CSAA Xactimate estimate, 17 (or 27%) had insufficient dwelling limits available, including the Coverage A

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<sup>96</sup> *Id.*

<sup>97</sup> *Id.*

<sup>98</sup> *Id.*

<sup>99</sup> CAL. DEP'T OF INS., REPORT OF THE TARGETED MARKET CONDUCT EXAMINATION OF THE CSAA INSURANCE EXCHANGE AND THE CSAA FIRE AND CASUALTY INSURANCE COMPANY 3 (Sept. 22, 2020).

<sup>100</sup> *Id.* at 3.

<sup>101</sup> *Id.* at 10.



limit and the 50% extended replacement cost coverage to meet these estimates. Of these, 16 were underinsured by an amount of 10% or more of the Coverage A plus the 50% extended replacement cost.”<sup>102</sup>

- “In all of these circumstances, the insureds had relied upon CSAA’s replacement cost estimates to determine the appropriate dwelling limits for their homes.”<sup>103</sup>

Finally, it bears mention that there will always be some percentage of homeowners who will intentionally partially insure when given the choice. But that turns out to be a calculable percentage. Although insurers may not offer the choice, when the option to partially insure is available, the frequency of homeowners taking it has been studied, and that frequency appears to be just 20%.<sup>104</sup>

### III. THE COMPETING NARRATIVES OF HOMEOWNERS AND INSURERS ABOUT UNDERINSURANCE

By the 2000s, RCV coverage and point-of-sale reconstruction cost estimation had become part of any homeowner insurance transaction. And instances of post-loss underinsurance were seemingly becoming common. Consequently, courts, legislators, and regulators have had to sort through underinsurance disputes where both homeowners and insurers have asserted that the inadequacy of coverage to fully fund reconstruction has risen through no fault of their own.

As briefly detailed in the Introduction to this article, in post-loss underinsurance disputes, typically, insurers would “state that it is the responsibility of its policyholder to select appropriate coverage limits,” while policyholders typically would state they were “relying upon the insurer’s estimate (as calculated using the insurer’s replacement cost estimation tool) to select Coverage A limits in a significant number of cases.”<sup>105</sup>

What follows is a fuller articulation of these positions. An information-rich source for more granular documentation of the competing narratives comes from 2010, when CDOI had to defend a proposed regulation on underinsurance in court. The CDOI filed with the court a 1550+ page administrative record containing hundreds of pages

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<sup>102</sup> *Id.*

<sup>103</sup> *Id.*

<sup>104</sup> Benjamin L. Collier & Marc A. Ragin, *The Influence of Sellers on Contract Choice: Evidence from Flood Insurance*, 87:2 J. RISK & INS. 1, 14, tbl.3 (2019).

<sup>105</sup> Administrative Rulemaking File for CAL. CODE REGS., tit. 10, § 2695.183 at 1030.

documenting over fifty exemplars of underinsurance narratives.<sup>106</sup> While there is no point in repeating or detailing each of these numerous exemplars, there is one notable example that stands up well as an example of the story the collective reports demonstrate: an instance where simultaneously the competing positions of the insurer and the homeowner are set forth in their most robust and complete possible form, and which perhaps by happenstance is the only exemplar reproducing the entirety of the policy language describing the process and role of point-of-sale component cost estimating in determining the adequacy of insurance coverage (it was one of two homes the insureds owned and insured, but the documentation of the loss of the insured's other home is more sparse<sup>107</sup>).<sup>108</sup>

The home was first insured in 1997.<sup>109</sup> The home was lost on June 24, 2007 in the Angora Fire.<sup>110</sup> The homeowners had the same agent through the date of loss.<sup>111</sup> The homeowners recall the agent having told them that they had “a great policy,” “with its protection plus/inflation features,” they should be “just fine,” and “he would review the policy annually.”<sup>112</sup> The homeowners believed that for ten years the policy was adjusted annually for inflation.<sup>113</sup> The renewal of the policy eight months before the loss did reflect an upward adjustment of Coverage A by \$22,000 [12.4%].<sup>114</sup>

The policy in place on the date of loss provided for Coverage A of \$199,000, a Building Ordinance or Law Coverage Endorsement, and 125% ERC.<sup>115</sup> The endorsement pages stated that “[t]he limit of liability for this structure (Coverage A) is based on an estimate of the cost to rebuild your home, including an approximate cost for labor and materials in your area, and specific information that you have provided about your home.”<sup>116</sup>

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<sup>106</sup> Until this article, virtually no one may have ever carefully read the administrative record in its entirety. *See id.* at 1524 (“[N]either ACIC, nor anyone else, has attacked the information in the original rulemaking file, which included but was not limited to more than fifty separate consumer complaints and their files . . . declarations and summaries of market conduct examinations of insurance companies on issues of underinsurance and estimated replacement cost. In fact, neither ACIC, nor anyone else, has even asked to review the Rulemaking file, at any time, before or after the 15 Day Notice.”).

<sup>107</sup> *Id.* at 445–52.

<sup>108</sup> *Id.* at 418–44, 445–52.

<sup>109</sup> *Id.* at 420.

<sup>110</sup> *Id.* at 431–32, 445–52.

<sup>111</sup> *Id.* at 419, 421, 431.

<sup>112</sup> *Id.* at 421.

<sup>113</sup> *Id.* at 432.

<sup>114</sup> *Id.* at 439.

<sup>115</sup> *Id.* at 432, 434, 446.

<sup>116</sup> *Id.* at 435.

Additionally, in the last pre-loss renewal package, in between “private policy information and renewal information,”<sup>117</sup> were four pages of text detailing exactly how policy limits were determined, reading (font size, italics, and bolding in original; graphics omitted):

### Make sure you’re not *under-insured*.

Dear [insureds]

We want to help you choose the amount of coverage that is right for you. That’s why we’re making the extra effort to provide you with specifics about *your* house. Using the information in this notice, you can make sure the limit of insurance you choose for your house takes into account the construction, characteristics, and special features of your house.

The information we have on record about your home is important because. with each renewal offer, we use it to calculate a reconstruction cost estimate.

You can use the estimate as a guide to help you choose the amount of coverage you want for your home. If you don’t have enough coverage, you could be under-insured. And if your house was totally destroyed, that could mean being unable to pay for complete reconstruction.

We can get you back where you belong . . . *if* you’re properly insured.

And keep in mind: with Farmers, you have a personal agent to help with your insurance program.

### Do we have current information about your home?

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<sup>117</sup> *Id.* at 420.

Current and complete information is the key to getting a good reconstruction cost estimate. Even if you haven't changed a thing about your home for years, it's still a good idea to check your information and make sure it's current and complete. And if you *have* made any changes ...

According to one recent study, 60% of homeowners who completed major changes to their homes did not update their Homeowners insurance policies.

Here's how it could have happened:

- Lemont added an upstairs bathroom.
- Luisa upgraded her 1930s kitchen with granite counters and new appliances.
- Bob and Judi turned their unfinished basement into an exercise room.
- Kim put a second floor on his ranch style home and gained 800 square feet.

*And because they didn't report these changes to their agents, they were under-insured!*

Turn the page to start reviewing information about your house. =>

### **Information We Used to Estimate the Reconstruction Cost Estimate for Your Home**

We recommend that you contact [agent] your Farmers® agent, at [telephone number], to discuss your reconstruction estimate and make sure your

home's special features and any improvements you have made are taken into account. Your agent can explain any unfamiliar terms used in the estimate. The information used to estimate labor and material costs is periodically updated to keep pace with changes in normal market conditions. However, reconstruction cost estimating programs can neither anticipate abnormal market conditions nor keep up with rapidly changing costs. The reconstruction cost estimate can serve as a guide, but it is your responsibility to choose the Coverage A limit that is right for you. The Coverage A limit in your policy is the amount of insurance on your home.

[table of home features/characteristics and coverage—  
32 categories of information]

Thank you for reviewing the information this notice provides about your home. It is important because the amount of insurance coverage you choose should closely match the actual cost of rebuilding your home. Our underwriting rules for most states require that your policy have a coverage A limit at least equal to the reconstruction cost estimate. You may choose a Coverage A limit at least equal to the reconstruction cost estimate. You may choose a Coverage A limit higher than the estimate, or you have the option to reduce the limit to an amount equal to the estimate.

## **Reconstruction costs change over time.**

Here are some things to keep in mind as you choose your Coverage A limit:

- Contact your Farmers® agent. Your agent will be glad to work with you to make sure we have all the information we need for the

reconstruction cost estimate. Make sure the information we have is current and complete and tell your agent about any improvements, upgrades, or additions you've made to your home.

- Understand that reconstruction cost is not the same as market value, or what you paid for your home, or the cost of a similar new tract home. And ...reconstruction cost changes over time, typically increasing year by year.

### Additional coverages may be right for you.

You may want to ask your agent if your policy has “extended replacement cost” coverage. Under this coverage and subject to its provisions, we pay to repair or replace a loss covered under Coverage A up to 125% of the Coverage A limit. If your policy does not have this coverage, you may be able to add it for an additional premium.

Many policies have limited Building Ordinance or Law coverage to pay for additional costs that result from having to rebuild in compliance with updated building codes. You may be able to increase the amount of this coverage for additional premium. Please contact your agent to discuss availability.

If you have questions about anything in this notice or would like to discuss your coverage, please call your Farmers® agent. Thank you for choosing Farmers. We appreciate your business.

[table of home features/characteristics—33 categories of information]<sup>118</sup>

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<sup>118</sup> *Id.* at 424–27.

After the fire, neighbors (including one who was a contractor) received reconstruction bids in the range of \$225 per square foot, which for this home equated to \$379,800.<sup>119</sup> The post-loss Xactimate estimate calculated reconstruction cost as \$362,623.88.<sup>120</sup> The insurer offered \$248,750 for reconstruction (which was the policy limits of Coverage A plus ERC).<sup>121</sup>

After the fire, reflecting on being underinsured by more than \$100,000, the homeowners stated:

In hindsight, we put trust in someone who always seemed confident, cordial, and responsible. He presented himself as an insurance professional representing an established, reputable company. We believed that, because our policy limits increased with what we thought was inflation, it was [the agent's] job to see that we were adequately insured. I guess we were naïve to think that there are tables/charts with current building replacement costs available to insurance companies. Only after the fire, when we questioned whether or not our primary residence in San Ramona was adequately covered, did we realize that his “expertise” wasn’t anywhere in the ballpark!<sup>122</sup>

And

...it’s extremely frustrating to us that we were never given any reason to believe that we’d be so GROSSLY underinsured on both our residences! While we knew that we didn’t have “guaranteed replacement cost” coverage, we were led to believe that we were “in the ballpark” especially as yearly increases in our premiums reflected inflation. When we did meet to “review” our insurance, it was stated that with 125% of policy limits, we should be “just fine. . . .” Quite frankly, we feel betrayed.<sup>123</sup>

The insurer defended its position, stating:

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<sup>119</sup> *Id.* at 420.

<sup>120</sup> *Id.* at 422.

<sup>121</sup> *Id.* at 420.

<sup>122</sup> *Id.* at 421.

<sup>123</sup> *Id.* at 432.

[A]ll insureds have the ultimate responsibility of choosing their limits of coverages, including the limit for Coverage A. . . . Since 1992, we have contracted with Marshall & Swift/Boeckh (M&S”), a nationwide provider of building cost information, to provide a reconstruction cost (Residential Component Technology, or RCT) estimating program for most residential buildings. We also developed and distributed to [the homeowners] and to our other insureds an RCT Disclosure, captioned “Make sure you’re not under-insured,” at each renewal. . . . [The homeowner] received this notice with his 2007 offer of renewal, before the subject fire loss. You will note that through this RCT Disclosure we inform insureds:

- a. That they can make sure that the limit of insurance they choose for their home takes into account the construction, characteristics, and special features of their home;
- b. They should review the information to verify that it is accurate and complete;
- c. That reconstruction cost estimating programs can neither anticipate abnormal market conditions nor keep up with rapidly changing costs;
- d. That the reconstruction cost estimate can serve as a guide, but it is the insured’s responsibility to choose the Coverage A limit that is right for them.

[T]he 2006 renewal offer. . . . was based upon RCT and included the RCT disclosure. . . . The insured accepted the proposal; conversely, the insured never asked the agent or [the insurer] for changes to the proposed Coverage A limit. . . . There appears to be some discrepancy between what the agent recalls and what the insured recalls regarding selection of the Coverage A limit. The Coverage A limit is a figure about which reasonable persons can differ. As noted above, selection of the limit is ultimately a decision for the insured. . . . [The insurer] offered to renew the insured’s policy with a Coverage A limit that reflected our estimated reconstruction cost of the dwelling using the RCT program. . . . We believe that the RCT program provided by Marshall & Swift/Boeckh takes into count labor and material costs for the area in which the reconstruction is to take place. . . . We



believe that some of the difference between the estimated reconstruction cost before the loss and the estimated reconstruction cost after the loss may be explained by discrepancies in features of the dwelling. . . . We do not believe that the \$199,000 Coverage A limit offered to the insured by [the insurer] was based on incorrect information. . . . As noted above, insureds ultimately select their own coverage limits for their own personal reasons.<sup>124</sup>

This exemplar is a full-throated cry by a homeowner for an insurer to accept responsibility for its estimating error, and a full-throated insurer declination of that responsibility. As will be developed in Part IV, other than perhaps the articulateness of the respective statements of position and the detail offered in support, this exemplar is not in any way positionally unusual. Rather, in a *typical* underinsurance dispute, both homeowner and insurer claim post-loss surprise, and like the scarecrow in *The Wizard of Oz*, they seem to point in opposite directions while courts, legislators, and regulators are left to sort through where responsibility resides.

#### IV. THE JURISPRUDENTIAL LANDSCAPE OF UNDERINSURANCE

The CDOI administrative record is the most comprehensive governmental focus to date on industry-wide practices regarding point-of-sale reconstruction algorithms. But both before and after CDOI adopted a new regulation on the minimum requirements for an estimated reconstruction value,<sup>125</sup> occasional lawsuits focused on the role of these algorithms in individual instances of underinsurance. What emerges from a closer look at the caselaw and the CDOI administrative record is that the law has been and continues to be that an insurer giving a reconstruction cost estimate to a homeowner at point-of-sale is not liable for inadequate coverage so long as the insurer clearly describes it as an estimate and is not sloppy in making that estimate. However, the law does not absolve an insurer from offering an estimate of adequate insurance that an insurer knows likely is inadequate.

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<sup>124</sup> *Id.* at 441–43.

<sup>125</sup> Standards for Estimates of Replacement Value, CAL. CODE REGS., tit. 10, § 2695.183 (2011).

## A. A REVIEW OF THE CASELAW

An insurer cannot represent coverage as adequate if it has reason to know the coverage likely is inadequate. This core jurisprudential principle emerges from every decision involving point-of-sale estimates of adequate insurance, regardless of the constellation of plaintiffs and defendants, the allegations, the procedural posture, the jurisdiction, or the outcome. What follows is a survey of nine cases spanning thirty years and seven states, in both state and federal court.

1. *Schanz v. New Hampshire Ins. Co.* is a 1988 opinion from the Michigan Court of Appeals. The case litigated whether an insurer was liable to building owners for negligence after an underinsured building was completely destroyed by fire when the amount of insurance was based on an annually inflation-adjusted insurer's point-of-sale appraisal estimating replacement cost.<sup>126</sup> The insurer claimed it had no duty to conduct an appraisal.<sup>127</sup> The building owner did not disagree but contended that "once defendant undertook to appraise the building for purposes of informing plaintiffs of the required insurance coverage, defendant assumed a duty to use reasonable care in establishing the replacement cost value of the building."<sup>128</sup> The insurer contended that the appraisal was purely for underwriting purposes.<sup>129</sup> The building owners responded that they (the building owners) had relied on the replacement value estimate.<sup>130</sup> On these issues, the building owners won at trial, and the appellate court affirmed, holding "we cannot conclude that the trial court erred in finding that defendant owed a duty to plaintiffs to exercise reasonable care in determining the replacement cost coverage under the policy issued to plaintiffs."<sup>131</sup> Twenty-eight years after the *Schanz* opinion, the Michigan Court of Appeals had occasion to reaffirm that in Michigan, unless something changes the usual situation of agents taking orders from customers, generally, "insurance agents have no duty to advise the insured regarding the adequacy of insurance coverage."<sup>132</sup>

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<sup>126</sup> *Schanz v. N. H. Ins. Co.*, 418 N.W.2d 478, 479–81 (Mich. Ct. App. 1988).

<sup>127</sup> *Id.* at 481.

<sup>128</sup> *Id.*

<sup>129</sup> *Id.* at 482.

<sup>130</sup> *Id.*

<sup>131</sup> *Id.* at 481, 484.

<sup>132</sup> *Chem. Tech., Inc. v. Berkshire Agency, Inc.*, No. 326394, 2016 WL 4008455, at \*2 (Mich. Ct. App. July 26, 2016) (quoting *Harts v. Farmers Ins. Exch.*, 597 N.W.2d 47, 50 (Mich. 1999)).

2. *Furtak v. Moffett* is a 1996 opinion of the First Appellate District, Fifth Division, of Illinois.<sup>133</sup> The case litigated whether an agent and an insurer were liable to homeowners for negligence and breach of contract when their home was completely destroyed by fire and was underinsured because the agent voluntarily “offered them a policy that would fully cover their home even in the worst case scenario.”<sup>134</sup> At trial, the homeowners conceded that under Illinois law it was their burden to know the contents of their policy, to draw any discrepancies to the insurer's attention, and that the insurer had no duty to review the adequacy of coverage.<sup>135</sup> Nonetheless, the homeowners contended that the insurer had voluntarily undertaken a duty to determine adequacy of coverage of its insureds through a series of actions:

(1) [Insurers'] institution in the late 1980s of the [Insurers'] Friendly Review marketing program, which encouraged agents to contact insureds regularly to make sure that they had adequate insurance coverage on their homes and personal possessions; (2) [Insurers'] distribution in 1989 of field and procedure bulletins stating that many of their insureds did not have adequate insurance coverage on their homes and possessions and suggesting that agents send their insureds an article discussing the possibility of inadequate insurance and the need for the insureds to review their coverage; (3) a field bulletin distributed by [the insurer] in early 1992, encouraging agents to review the adequacy of policy limits without waiting for calls or renewal dates; (4) the implementation of the computerized dwelling replacement cost program, which developed lists of those insureds who were 31% underinsured and who were to be contacted by the agency force before renewal; and (5) [Agent's] conducting of a review of his policies as renewal dates approached to determine whether coverage was adequate.<sup>136</sup>

The appellate court affirmed the trial court's entry of summary judgment in favor of the defendants, holding that on the specific facts of the case, “[t]he fact that defendants instituted procedures to determine whether their insureds were underinsured and [the insurer] encouraged their agents to inform their insureds that they should evaluate the adequacy of their

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<sup>133</sup> *Furtak v. Moffett*, 671 N.E. 2d 827 (Ill. App. Ct. 1996).

<sup>134</sup> *Id.* at 829.

<sup>135</sup> *Id.*

<sup>136</sup> *Id.*

coverage does not impose upon them a duty to warn plaintiffs of their inadequate insurance” because “none of the programs instituted by [the insurer] or procedures carried out by [the agent] would have revealed to defendants that plaintiffs were underinsured.”<sup>137</sup>

3. *Everett v. State Farm Gen. Ins. Co.* is a 2006 opinion of the Fourth District, Division 2, of the California Court of Appeals.<sup>138</sup> The homeowner sued the insurer for breach of contract, breach of implied covenant of good faith and fair dealing, negligence, reformation, and fraud, after a fire destroyed her home.<sup>139</sup> Despite having RCV coverage in the amount of the insurer’s point-of-sale reconstruction estimate, 10% ERC coverage, and an additional 10% coverage through an endorsement for changes in building codes she was allegedly underinsured.<sup>140</sup> Putting aside the portion of the dispute about the building code endorsement, the homeowner contended “the policy, which promises to replace her home while stating a limit, is unclear,” while the insurer contended “it never represented to her that her home was covered for up to 100 percent of the amount to replace her property” and “was clear to explain that the amount of the estimate was just that—merely an estimate.”<sup>141</sup> The appellate court affirmed the trial court’s entry of summary judgment for State Farm, with the key holding (for purposes of this article) being:

[Annual renewal] certificates reminded [the homeowner] that the replacement cost figure identified by [the insurer] was merely an estimate, and that it was her responsibility to determine whether her property was adequately insured. Thus, contrary to [the homeowner’s] contention that it was [the insurer’s] duty to maintain policy limits equal to replacement cost, [the homeowner] bore such duty. Nothing in the record suggests that the original policy limits were insufficient to replace her home in 1991. Moreover, there is nothing in the record that shows [the homeowner] requested her policy limits to be increased since they were set in 1991.<sup>142</sup>

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<sup>137</sup> *Id.* at 830.

<sup>138</sup> *Everett v. State Farm Gen. Ins. Co.*, 75 Cal. Rptr. 3d 812 (Cal. Ct. App. 2008).

<sup>139</sup> *Id.* at 816.

<sup>140</sup> *Id.* at 815.

<sup>141</sup> *Id.* at 816–17.

<sup>142</sup> *Id.* at 821–22.

4. *Peterson v. Big Bend Ins. Agency, Inc.* is a 2009 opinion from Division 3 of the Washington Court of Appeals.<sup>143</sup> The homeowners sued both the broker and the insurer for negligence, negligent misrepresentation, bad faith, and violations of the Consumer Protection Act after their home was destroyed by fire and the coverage limits were less than two-thirds of the “full replacement value of their home.”<sup>144</sup> As the appellate court summarized:

The [homeowners] explained that they wanted the house insured so that it could be replaced if it were destroyed. The [homeowners] indicated that they did not know what the cost of this coverage would be or how such a figure would be determined. [The broker] told the [homeowners] that his agency would use a formula that involved plugging in certain items, such as the square footage, the type of construction, and certain upgrades. . . .

The [homeowners] described their home to [the broker]. [The broker] told the [homeowners] that they were underinsured . . . [The homeowners] asked who would come up with the replacement number for the home. [The broker] told them that he would. He explained that he would go to their house, take measurements, gather other information, and plug the information into the formula to come up with the replacement number. . . .

The formula used by [the broker] for determining replacement value was a computer software program designed by the E.H. Boeckh Company that is known as the Boeckh Cost Guide. Use of this software, or a similar program, is a standard in the insurance industry for determining the replacement value of homes. It was [the insurer’s] policy to use the Boeckh Cost Guide to estimate the cost to replace a home in the event of a total loss.

Later, [the insurer] ran the cost guide formula . . . [The insurer] did not have the information from the standard Boeckh questionnaire and she did not have information about the home’s numerous upgraded features which would have increased the replacement value. The Boeckh Cost Guide results for the [homeowners’] home established a

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<sup>143</sup> *Peterson v. Big Bend Ins. Agency, Inc.*, 202 P.3d 372 (Wash. Ct. App. 2009).

<sup>144</sup> *Id.* at 374.

basic replacement value of \$219,103 with a location adjusted value of \$223,463.

When [the homeowner] received the insurance summary, he noticed the \$193,000 replacement value figure, which was \$14,000 more than the same coverage the prior year. [The homeowner] assumed the \$14,000 increase was the result of the updated calculation of the home's replacement cost based on the formula that [the broker] had explained. But the increase was actually due to an automatic inflation guard provision.<sup>145</sup>

The broker argued that he was not liable because, under Washington law, it is the homeowner's responsibility to select policy limits and that asking for 'sufficient coverage' does not expand an agent's responsibility.<sup>146</sup> The appellate court rejected this argument, holding that the agent had misrepresented how adequate coverage would be determined, but the court also found that if there had been no misrepresentation, the agent would avoid liability.<sup>147</sup>

5. *Bryce v. Unitrin Preferred Ins. Co.* is a 2010 opinion of the Texas Court of Appeals (Austin).<sup>148</sup> The homeowners sued their agent and their insurer for negligence and violation of the insurance code after a fire destroyed their home and the homeowners were underinsured despite having replacement coverage that had been adjusted for inflation.<sup>149</sup> Several insurer inspections of the home to determine adequacy of coverage took place, but the inspection results had not been shared with the homeowners.<sup>150</sup> The agent recalled recommending the homeowners consult with a builder on determining replacement cost, while the homeowners recalled being told by the agent that the insurance was adequate (the homeowners also conceded that they had complained that the premiums were too high).<sup>151</sup> The homeowners lost at trial and the appellate court affirmed, holding that while an insurance agent has "the duty to use due diligence in obtaining the requested coverage" and "the duty to notify the client promptly if unable to do so," neither an insurer nor agent has a duty "to monitor an insured's policy

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<sup>145</sup> *Id.* at 375–76.

<sup>146</sup> *Id.* at 377–78.

<sup>147</sup> *Id.* at 376–80.

<sup>148</sup> *Bryce v. Unitrin Preferred Ins. Co.*, No. 03-08-00670-CV, 2010 WL 1253579 (Tex. Ct. App. Apr. 1, 2010).

<sup>149</sup> *Id.* at \*1.

<sup>150</sup> *Id.* at \*2–3.

<sup>151</sup> *Id.*

in order to ensure that the requested coverage is adequate . . . [because] an insured might choose to insure their home at less than the full replacement cost, particularly if the insured wants to reduce their insurance premiums;” and noting that on the facts of the case, the insurer, “would have every reason to believe the [homeowners'] home was adequately insured.”<sup>152</sup>

6. *Edwards v. United States Automobile Association* is a 2015 unpublished opinion from Division III of the Colorado Court of Appeals.<sup>153</sup> The homeowners sued their insurer for negligent misrepresentation and contract reformation after a wildfire left them underinsured on two homes, despite the policy limits on each being based on the insurer’s point-of-sale reconstruction cost estimate.<sup>154</sup> The homeowners contended that they had relied on the insurer’s expertise to determine rebuilding costs.<sup>155</sup> The insurer argued that the homeowners could not have *justifiably* relied on the insurer because the homeowners challenged whether they were being over-insured on the “gate house,” and their casualty loss claim on the “main house” showed that they knew there were significantly higher approximate historical construction costs than the stated policy limits.<sup>156</sup> The policies described Coverage A limits as “the minimum estimated rebuilding costs” and stated “our estimates are based on average construction costs and labor costs for geographic areas and may not reflect the unique features of your home or the area you live in.”<sup>157</sup> The policies reminded the homeowners that it was their “responsibility to . . . make sure [their] coverage is adequate to repair or rebuild,” “[w]hile we can help calculate an estimated minimum reconstruction cost, only you can decide whether you have enough coverage,” “[i]n no event will we pay more than . . . limits,” and “[i]t is your responsibility to determine and maintain adequate amounts of insurance to totally replace or repair your dwelling.”<sup>158</sup> With regard to the gate house, the homeowners presented expert testimony on why cost of new construction may be higher than costs of rebuilding.<sup>159</sup> The appellate court reversed the trial court’s entry of summary judgment for the insurer on the negligent misrepresentation claim, noting the homeowners: “had sufficient time to investigate the estimated rebuilding cost and the information was not in

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<sup>152</sup> *Id.* at \*5–6.

<sup>153</sup> *Edwards v. United States Auto. Ass’n*, No. 14CA1829 (Colo. App. Oct. 22, 2015).

<sup>154</sup> *Id.* at 1–5.

<sup>155</sup> *Id.* at 4.

<sup>156</sup> *Id.* at 5, 7, 10–12.

<sup>157</sup> *Id.* at 12–13.

<sup>158</sup> *Id.* at 18.

<sup>159</sup> *Id.* at 13.

USAA's sole control. But even if they had considered investigating, a reasonable jury could conclude they need not have done so because that would have required them to hire their own expert."<sup>160</sup>

The appellate court then affirmed dismissal of the reformation claim because Colorado reformation law requires a mutual mistake, and while the homeowners intended to "fully cover" both homes, "USAA only intended to provide coverage based on the estimated replacement value of the homes, up to policy limits."<sup>161</sup>

7. *Association of California Ins. Companies v. Jones* is not a homeowner/insurer underinsurance dispute, but rather a 2017 opinion of the California Supreme Court affirming that CDOI acted within the scope of its authority in adopting new insurance regulations concerning point-of-sale reconstruction cost estimation.<sup>162</sup> For purposes of this article, the following holding is particularly salient:

The trial court reasoned that a replacement cost estimate—as an *estimate*—is inherently inaccurate and therefore cannot be deemed "misleading" within the meaning of section 790.03, subdivision (b). But the defect sought to be remedied by the Regulation is not the possibility that actual costs, for unforeseeable reasons, may not align with estimated costs. Rather, the Regulation seeks to reduce the possibility that an estimate would be misleading by ensuring that the estimate include all that is reasonably knowable about actual costs at the time the insurance contract is executed. It may be theoretically possible for a replacement cost estimate that omits consideration of labor costs or the materials used in constructing the home nonetheless to come close to the actual replacement cost if (say) the expected rate of inflation or some other cost component was badly or unreasonably overstated. But the estimate would still have been misleading in purporting to represent *each* of the essential components for rebuilding the dwelling. In addition, it would have been misleading to the extent that

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<sup>160</sup> See *Gomba Music, Inc. v. Avant*, 62 F. Supp. 3d 632, 649 (E.D. Mich. 2014) (The parties "cited no authority to justify a finding that reasonableness in this context would require appellants to . . . obtain an independent expert at their own expense." (quoting with approval *Best v. Park W. Galleries, Inc.*, Nos. 305317, 308085, 2013 WL 4766678, at \*7 (Mich. Ct. App. Sept. 5, 2013) (unpublished opinion)).

<sup>161</sup> *Id.* at 21.

<sup>162</sup> *Ass'n of Cal. Ins. Cos. v. Jones*, 386 P.3d 1188 (Cal. 2017).



the incomplete estimate could not meaningfully have been compared with a competitor's estimate that *did* faithfully account for each component necessary to rebuild the dwelling. In any event, the validity of the Regulation does not depend on a finding that an incomplete replacement cost estimate would be misleading in every conceivable circumstance. The prohibition on untrue or misleading statements in section 790.03, subdivision (b), like the statutory prohibition on untrue or misleading statements at issue in *Ford Dealers*, extends to statements that are “‘likely’ ” to deceive the public. The Commissioner could reasonably conclude that replacement cost estimates are likely to mislead the public about the actual cost of repair or replacement when they willfully omit cost components essential to repairing or rebuilding a dwelling.<sup>163</sup>

8. *Nelson v. American Family Mutual Insurance Company* is a 2018 opinion from the United States Court of Appeal, Eighth Circuit, arising out of events in Minnesota.<sup>164</sup> It is an *over-insurance* case—the homeowner’s minimum required insurance, based on the 360Value algorithm, doubled in just a few years after the assessed ‘grade’ of the home was revisited, and the homeowners alleged this constituted breach of contract, negligence, and/or consumer fraud by the insurer in violation of the Minnesota Consumer Fraud Act.<sup>165</sup> Policy clauses emphasized that replacement cost estimates can change, it is the insured’s responsibility to make certain the replacement cost is accurate, the insurer’s estimate is the minimum insurance that can be purchased, the estimate is a minimum but not a guarantee as the actual cost may differ, and the insured may wish to consult a contractor to make sure it is enough.<sup>166</sup> On these facts, the Eighth Circuit held summary judgment for the insurer was proper because “[n]othing in the Policy impose[d] on [the insurer] a contractual obligation to make objectively reasonable or accurate replacement cost estimates,” the insurer did not promise “that its replacement cost estimates [would] be accurate,” the policy expressly told the homeowners that it is “up to the policyholder to select the proper amount of coverage,” and the homeowners could not point to any “promise, misrepresentation, or false statement that they relied upon, justifiably or unjustifiably.”<sup>167</sup> The Eighth Circuit closed its Opinion with the observation:

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<sup>163</sup> *Id.* at 1203 (citation omitted).

<sup>164</sup> *Nelson v. Am. Fam. Mut. Ins. Co.*, 899 F.3d 475 (8th Cir. 2018).

<sup>165</sup> *Id.* at 477–79.

<sup>166</sup> *Id.* at 478.

<sup>167</sup> *Id.* 480–82.

It is also noteworthy that the Nelsons never presented any evidence that the replacement estimates for the years 2007 to 2010 were false. This failure to develop an appropriate record is fatal. Without any evidence of a misrepresentation or false statement that the Nelsons relied on, there is insufficient evidence to create a submissible case that American Family violated the MCFA.<sup>168</sup>

9. *Sheahan v. State Farm General Insurance Company* is a 2020 Order of United States District Court for the Northern District of California, dismissing the plaintiffs' Third Amended Complaint with prejudice.<sup>169</sup> A collection of homeowners brought a putative class action against their insurer and Verisk (as well as Verisk subsidiaries, the Insurance Services Office, and Xactware) alleging they "conspired together to create and apply defective financial technology tools . . . that are not being utilized to issue proper insurance."<sup>170</sup> The Complaint alleged that each of the homeowners selected coverage limits at or greater than the point-of-sale estimate of reconstruction value, and after wildfire destroyed their homes, each was underinsured.<sup>171</sup> The District Court did not reach the question of whether the defendants made any representation that the defendants likely knew was false, as the court held that the plaintiffs (despite serial opportunities) failed to plead fraud with adequate particularity about "what the false statements were, and from whom/to whom they were made."<sup>172</sup> The District Court noted the "general rule" is that an insurer has no duty to volunteer an opinion on the adequacy of coverage, and emphasized all of the lengthy insurance policy disclaimer language (that was as fully robust as any of the language detailed in other policies referenced in this article).<sup>173</sup> As to the Verisk Defendants, the District Court found, "[a]ccording to Plaintiffs, the Verisk Defendants 'represented that its software could accurately calculate the replacement costs for each home, knowing that Plaintiffs . . . would consider and rely upon such representations for the purpose of calculating rebuilding costs'" but "[i]t is unclear what, if any, representations about 360 Value the Verisk Defendants conveyed to [the insurer] or whether it was conveyed for the

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<sup>168</sup> *Id.* at 482.

<sup>169</sup> *Sheahan v. State Farm Gen. Ins. Co.*, 442 F. Supp. 3d 1178, 1195 (N.D. Cal. 2020).

<sup>170</sup> *Id.* at 1181–82.

<sup>171</sup> *Id.* at 1183–84.

<sup>172</sup> *Id.* at 1186.

<sup>173</sup> *Id.* at 1187–89.

purpose of reaching Plaintiffs” (and that the plaintiffs stated they needed no further discovery on the issue).<sup>174</sup>

So, that is a survey of nine cases spanning thirty years and seven states, in both state and federal court, and in a variety of constellations of plaintiffs and defendants. Sometimes the homeowner won; sometimes the insurer won; and one time, an insurance regulator won. But the common thread across all these cases is that while an insurer has no duty to estimate adequate coverage or to select coverage limits, an insurer cannot represent coverage as adequate if they have reason to know that coverage likely is inadequate.

#### B. THE CDOI REGULATION ON POINT-OF-SALE ESTIMATING ALGORITHMS IS IN HARMONY WITH THE CASELAW

The CDOI action adopting a regulation on point-of-sale reconstruction estimates is, of course, different from the caselaw in that CDOI acted on an industry-wide perspective. CDOI’s work, however, comes to the same conclusion as the caselaw: an insurer has no duty to estimate adequate coverage or to select coverage limits, but an insurer cannot represent coverage as adequate if they have reason to know that coverage likely is inadequate.

Based on its market conduct investigation, CDOI concluded that the estimating tools were demonstrably “inadequate” and “result in insureds who believe that they are adequately covered . . . and who therefore may not take independent steps to establish policy limits for themselves” and thus constituted violations of:

1. CIC 780 prohibiting an insurer from misrepresenting the benefits of a policy.
2. CIC 1861.05(a) because insureds who selected coverage limits in these circumstances were not paying premiums accurate to the risk presented.<sup>175</sup>

CDOI then released the final text of proposed new regulations (and amended text of existing regulations) addressing a variety of causes of underinsurance, or assessing responsibility for underinsurance; the proposed regulations:

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<sup>174</sup> *Id.* at 1191.

<sup>175</sup> Administrative Rulemaking File for CAL. CODE REGS., tit. 10, § 2695.183 at 1030.

- Required training of brokers and agents on how to estimate replacement value.
- Bolstered record keeping and record retention requirements.
- Provided minimum standards for estimates of replacement value.<sup>176</sup>

And in the accompanying administrative record, CDOI painstakingly detailed exactly what it was, and was not, doing:

- “No provision of this article shall be construed as requiring a licensee to estimate replacement cost . . . .”<sup>177</sup>
- “If a homeowner chooses to be underinsured, there is nothing in the regulation that prohibits it.”<sup>178</sup>
- “The regulations provide the definition of estimated ‘replacement cost,’ thereby allowing the consumer to be ‘informed.’ The regulations are not related to the pricing of insurance policies nor do they mandate the type of coverage to buy. The regulations purpose is to make clear what the term ‘replacement cost’ estimate means.”<sup>179</sup>
- “It is not the intent of the regulations to prevent licensees from making use of software tools. Instead, the regulations require that if a licensee uses a software tool, it takes reasonable steps to verify its reliability.”<sup>180</sup>
- “[I]t is not the third party source that has the relationship with the insured or applicant, nor is it the third party source communicating a replacement cost estimate to an insured or applicant. In this regard, the licensee is required to take reasonable steps to assure that the tools he or she or it is using are reliable.”<sup>181</sup>
- “[T]he proposed regulations prohibit licensees from escaping the responsibility not to make misleading statements to applicants or insureds by first having a third party source produce the misleading statement and then conveying it to the applicant or insured. In this situation, the licensee has indeed made a misleading statement, notwithstanding the fact that the misleading statement was produced on behalf of the licensee by another.”<sup>182</sup>

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<sup>176</sup> *Id.* at 4–15.

<sup>177</sup> *Id.* at 1400.

<sup>178</sup> *Id.* at 1411.

<sup>179</sup> *Id.* at 1412.

<sup>180</sup> *Id.* at 1441–42.

<sup>181</sup> *Id.* at 1457.

<sup>182</sup> *Id.* at 1466.

- “[T]he proposed regulations are necessary to ensure that replacement cost estimates are complete and have a chance of being more accurate. In essence, the regulations merely set forth the various components of a dwelling that typically need to be replaced in the event of a total loss. The proposed regulations do not purport to ensure that all such estimates turn out to be absolutely accurate. The regulations do, however, proceed from the basis that it is a misleading statement to communicate an estimate that is incomplete and omits considerations of certain components of a dwelling known to require replacement in the event of a total loss. In other words, calling something a replacement cost estimate when what is being estimated is necessarily something less than what it could take to replace the structure is a misleading statement. Not a single commentator has called into question this basic premise, because it is so obviously true.”<sup>183</sup>
- “Licensees who [] virtually ensure that the estimate they provide to an applicant or insured will be insufficient to replace the home in the event of a total loss, and yet describe the estimate as a replacement cost estimate, are necessarily making a misleading statement which they know or should know is misleading, and are therefore already committing a prohibited act under the Unfair Practices Act.”<sup>184</sup>
- “The act in question here is calling something a replacement value estimate when what is being estimated is necessarily something short of what it would take to replace the home.”<sup>185</sup>
- “This regulation requires that licensees verify the validity of the tools they are using to estimate replacement cost. . . . if they do use the vendors, they are required to verify that the sources and methods are kept current. Again, this is not an onerous requirement but, rather, one which any reasonable licensee should follow even in the absence of a regulation, given that an estimate based upon stale data would be an unreasonable action on the part of the licensee. . . . Third party estimates that are prepared on behalf of a licensee cannot be used by the licensee as a means of escaping responsibility for making a misleading statement . . . .”<sup>186</sup>
- “[I]t is a misleading statement to communicate an estimate of replacement cost estimate when it is incomplete and omits consideration of certain components of a dwelling known to require replacement in the event of a total loss. In other words, calling

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<sup>183</sup> *Id.* at 1466–67.

<sup>184</sup> *Id.* at 1472.

<sup>185</sup> *Id.* at 1479.

<sup>186</sup> *Id.* at 1486–87.

something a replacement value estimate when what is being estimated is necessarily something less than what it could take to replace the structure is a misleading statement. Not a single commentator has called into question this basic premise.”<sup>187</sup>

#### C. THE LINGERING JURISPRUDENTIAL QUESTION ABOUT BROADER INDUSTRY KNOWLEDGE

As reflected above, there largely has been an absence of any discussion in caselaw of what the industry knows about the accuracy of point-of-sale reconstruction estimation algorithms, the frequency of underinsurance, and the causes of underinsurance. Instead, in both the litigation and regulatory context, apparently either no one has asked for that data, or insurers have been successful in deciding not to present it.

Insurers certainly have the data. Insurers know which claims within their portfolios are homes requiring complete reconstruction, and for each of those homes, insurers know both what was the point-of-sale reconstruction estimate (if any) and the post-event incurred loss. Insurers know which losses were in catastrophes or not. Insurers know what demand surge pricing their insureds encountered.

The industry has never directly and unambiguously disclaimed having the data. Rather, the CDOI administrative record reflects that the industry position is more nuanced:

The National Association of Mutual Insurance Companies (NAMIC) testified:

- There was no “demonstration there’s an underinsured problem.”<sup>188</sup>
- “[T]here’s nothing here that sets forth we received 24,000 complaints specifically about the fact that they were not provided certain information that they needed to make an informed decision about what insurance coverage limitation they have.”<sup>189</sup>
- “[Y]ou have to see whether or not the Department has demonstrated that, if there is an underinsured problem, that that underinsured problem is lack – is because of a lack of knowledge in or it’s unintentional . . . .”<sup>190</sup>
- “There hasn’t been any statement that [current disclosures] aren’t doing what they should do, and that is provide information to a

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<sup>187</sup> *Id.* at 1488.

<sup>188</sup> *Id.* at 1131.

<sup>189</sup> *Id.*

<sup>190</sup> *Id.* at 1132.

consumer for that person to weigh what they need and make that assessment themselves.”<sup>191</sup>

- “[A]berrational cases . . . .”<sup>192</sup>
- “[A] few outlier situations . . . .”<sup>193</sup>
- “[This regulation] would actually regulate truthful nondeceptive communications between the insurer and the policyholder.”<sup>194</sup>

In its written comments, NAMIC added, “the CDI has failed to tender any evidence to support the conclusion that a *significant number* of insurance consumers involved in the wildfires were actually underinsured, or if they were underinsured, it was because they were unaware of their homeowners’ insurance coverage needs.”<sup>195</sup>

The Personal Insurance Federation of California (PIFC) asserted:

- “[T]he Department jumps to the conclusion that inadequacy following a fire is directly the result of a deficiency in the original replacement value estimate. . . . The Department offers no actual evidence, specific facts, studies, or expert opinion to justify dramatically altering the process of estimating replacement cost.”<sup>196</sup>
- “[T]here’s always places of underinsurance, particularly after a disaster. . . . it’s a pretty small percentage . . . .”<sup>197</sup>
- “With all due respect for the impact to any homeowner who has inadequate insurance at a time of loss . . . the number of insureds in that situation are few compared to the overall insured homeowner population and even to those who suffer a loss.”<sup>198</sup>

In written comments, the Insurance Agents and Brokers Association of California (IABAC) argued:

- “The Commissioner has not provided any study or data to support this claim [that CDOI and the Legislature received ‘a significant number of complaints by homeowners who lost their residences in the Southern California Wildfires of 2003.’”<sup>199</sup>

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<sup>191</sup> *Id.* at 1133.

<sup>192</sup> *Id.* at 1134.

<sup>193</sup> *Id.* at 1134–35.

<sup>194</sup> *Id.* at 1135.

<sup>195</sup> *Id.* at 1167.

<sup>196</sup> *Id.* at 1187.

<sup>197</sup> *Id.* at 1162.

<sup>198</sup> *Id.* at 1247.

<sup>199</sup> *Id.* at 1216.

And, in the written comments to proposed amended text, the Association of California Insurance Companies (ACIC) argued:

- “The department’s Informative Digest for the proposed regulations asserts after the 2007 wildfires, homeowners ‘learned that replacement value estimates made in setting coverage limits for their homes was [sic] too low, causing underinsurance issues to arise during efforts to rebuild or replace their references.’ But this assertion is not backed up with facts.”<sup>200</sup>
- “The only seemingly ‘statistical’ study added to the rulemaking file is the United Policyholders survey of 2007 wildfire victims. But the survey is not a valid study. The survey is not based on a scientific sampling of the 40,000 wildfire claims. The survey merits no consideration.”<sup>201</sup>

Finally, outside of the CDOI administrative record, sometimes there is the assertion that insurance would have been adequate but for demand surge. As an example, consider what the American Property Casualty Insurance Association (APCIA) said in 2021:

The insurance industry is encouraging property owners in high-risk areas to take steps now to mitigate potential losses. . . . This might include verifying if your homeowner’s policy includes replacement cost coverage, which pays an amount necessary to rebuild the home with construction materials of like kind and quality and replace your personal belongings, without deducting depreciation. Also, checking to see if your policy includes optional features such as an automatic inflation factor, increased coverage to help comply with any new building code ordinances, or adding extended replacement cost coverage, which increases the coverage available to rebuild your home when labor and material costs skyrocket after a natural disaster.<sup>202</sup>

Essentially, a data fog has resulted in never reaching the underinsurance question: what did insurers know and when did they know it?

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<sup>200</sup> *Id.* at 1254.

<sup>201</sup> *Id.* at 1254–55.

<sup>202</sup> AM. PROP. CAS. INS. ASS’N, U.S. PROPERTY INSURANCE MARKET STRUGGLES TO BALANCE SUPPLY & DEMAND 2 (2021).



## V. A NOVEL DATA SET LARGELY RESOLVING THE UNCERTAINTY

This article presents novel data on the accuracy of point-of-sale reconstruction cost algorithms in predicting reconstruction costs and by extension, informs on what insurers knew and when they knew it.

The data discussion must begin with a caveat: as referenced above, insurers have precise internal data both on which claims are reconstructions (“total losses” or “TLs”) versus profoundly expensive repairs and on what was the point-of-sale reconstruction cost estimate for those TLs.<sup>203</sup> But that data is not public facing.

Pursuant to California Public Records Act requests, the data presented in this article is aggregated wildfire risk information from CDOI received on November 9, 2022.<sup>204</sup> The California Insurance Code requires an admitted insurer with written premiums above a specified threshold to submit a report with specified fire information on its residential property policies to the Commissioner every two years and requires the Commissioner to post a report on wildfire risk compiled from the submitted data.<sup>205</sup> In 2022, the Commissioner published his first report.<sup>206</sup> As that report described, its conclusions were based upon reports from each insurer with written California premiums of \$10,000,000 or more regarding the insurer’s residential property experience for years 2018 and 2019 and constituted data from seventy-six insurers representing 98.8% of the homeowner insurance market in California.<sup>207</sup> Spreadsheets of data analyzing six policy forms (types of policy) were formatted into fifteen separate worksheets reporting data both in statewide totals and at a zip code level.<sup>208</sup> The publicly posted report of the Commissioner did not include these worksheets, but from these worksheets, aggregated wildfire risk information was received by the author of this article from the California Department of Insurance on November 9, 2022, pursuant to California Public Records Act requests.<sup>209</sup>

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<sup>203</sup> Pursuant to CAL. CODE REGS. tit. 10, §§ 2695.182, 2695.183(i), CDOI has the authority to collect this data, but CDOI has not yet undertaken collecting data on these estimates.

<sup>204</sup> E-mail from Chao Lor, *supra* note 14.

<sup>205</sup> CAL. INS. CODE § 929 (2019).

<sup>206</sup> CAL. DEP’T OF INS., WILDFIRE RISK INFORMATION REPORTING (2022), <http://www.insurance.ca.gov/0250-insurers/0800-rate-filings/upload/Wildfire-Risk-Information-Reporting-for-2018-and-2019-SB-824.pdf>.

<sup>207</sup> *Id.* at 2.

<sup>208</sup> *Id.*

<sup>209</sup> E-mail from Chao Lor, *supra* note 14.

The first step in the analysis is to identify which incurred losses are dwellings requiring 100% replacement as opposed to partial dwelling repair. In other words, which losses are TLs? CDOI has not yet collected data on incurred losses with the TL classification. In lieu of available TL data, the assumption of this article is that within the set of policies with ERC, aggregating claims by the ratio of incurred loss to Coverage A limits will identify when an incurred loss is a complete reconstruction as opposed to a profoundly expensive repair.

Put simply, in policies with ERC, the selected Coverage A likely is the at or near the point-of-sale estimate of the cost of total reconstruction. And within these policies, the closer the incurred loss is to 100% of Coverage A, the more likely the loss was a TL as opposed to a profoundly expensive repair.

This is not an arbitrary assumption. An insured sometimes has the option (depending upon the policies of the insurer) to select Coverage A limits at, above or below the point-of-sale algorithm estimate of 100% replacement cost.<sup>210</sup> A study of NFIP insureds who have these options finds an insured will select coverage below the estimate (“partially insure”) 20.45% of the time, will select coverage at the estimate (“fully insure”) 67.86% of the time, and will select coverage above the estimate (“overinsure”) 11.69% of the time.<sup>211</sup> NFIP policies do not have an ERC option.<sup>212</sup> When ERC endorsements require the underlying Coverage A be 100% of replacement cost,<sup>213</sup> partially insuring is not an option. These ERC

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<sup>210</sup> For example, using the California Department of Insurance’s *Homeowners Coverage Comparison Tool*, one can see that an Allstate Deluxe Plus Homeowners Policy or a Fire Insurance Exchange (Farmers) Next Generation Homeowners Policy requires Coverage A with a minimum coverage limit of 100% of the point-of-sale estimate of replacement cost, while a USAA Homeowners Policy or a State Farm does not. *Homeowners Coverage Comparison Tool*, CAL. DEP’T OF INS., <https://interactive.web.insurance.ca.gov/apex/f?p=143:16:0::NO> (last visited Mar. 21, 2023) (access by selecting “Homeowner” from Form Type drop-down list; input Allstate Insurance Company in Company 1 field; input Allstate Deluxe Plus Homeowners Policy in Policy 1 field; input USAA Casualty Insurance Company in Company 2 field; input Homeowners Policy Program in Policy 2 field; select compare).

<sup>211</sup> Collier & Ragin, *supra* note 104.

<sup>212</sup> FEMA, NATIONAL FLOOD INSURANCE PROGRAM: FLOOD INSURANCE MANUAL 2-1, 3-32 - 3-33, 4-1 (Oct. 2022), [https://www.fema.gov/sites/default/files/documents/fema\\_nfip-flood-insurance-manual-sections-1-6\\_102022.pdf](https://www.fema.gov/sites/default/files/documents/fema_nfip-flood-insurance-manual-sections-1-6_102022.pdf).

<sup>213</sup> See, e.g., ZURICH, EXTENDED REPLACEMENT COST ENDORSEMENT PROTECTOR PLUS POLICY 9-97 [http://docs.nv.gov/doi/documents/home\\_policies/ZurichForms/E6047.pdf](http://docs.nv.gov/doi/documents/home_policies/ZurichForms/E6047.pdf) (insuring your dwelling to 100% of the replacement cost is a condition of ERC); CSAA,

endorsements are, not surprisingly, in policies that require Coverage A limits to be at least ‘full’ insurance. In policies that do not require Coverage A limits to be at least ‘full,’ there is no reason to purchase ERC unless or until Coverage A is topped off at 100%. That said, when an insured selects ERC, there is less incentive to also select Coverage A limits above the estimate from the point-of-sale algorithm. For these reasons, in policies with ERC, it is reasonable to conclude: (1) the Coverage A limits are full, and (2) the Coverage A limits are the amount that the point-of-sale algorithm estimates as fully insuring without over-insuring (in other words, the expected cost of a reconstruction).<sup>214</sup>

The resulting hypothesis is that when the incurred loss is 90% or more of Coverage A in ERC policies, the frequency of the incurred loss being a profoundly expensive repair approaches zero. To test the hypothesis, in policies with ERC, the frequency of incurred loss of at least 70% of Coverage A was aggregated:<sup>215</sup>

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HOMEOWNER POLICY SPECIAL FORM-HO-3, SUPPLEMENT 11, <https://interactive.web.insurance.ca.gov/apex/f?p=143:16:0::NO> (available using the California Department Insurance Homeowners Coverage Comparison Tool)(“Coverage A – Dwelling . . . is increased to 150% of the respective amounts shown . . . if the dwelling . . . [has] been insured . . . to 100% of the replacement cost”). Colorado law makes this same point. COLO. REV. STAT. ANN. §10-4-110.8(6)(a) (effective Jan. 1, 2024).

<sup>214</sup> Some confirmation of this conclusion is that when comparing policies with only RCV (eighty-nine claims) to policies with RCV and ERC (7220 claims), if the homeowner does not purchase ERC, then the frequency of incurred loss being less than the amount of Coverage A is 12.4%, less than if the homeowner only purchased RCV, and the depth of underinsurance is 12.8% less.

<sup>215</sup> See *generally* Administrative Rulemaking File for CAL. CODE REGS., tit. 10, § 2695.183.

In policies with both RCV and ERC, when comparing the incurred losses that are losses covered by Coverage A to amount of Coverage A, tabulating the number of claims within each of the following ratio brackets:			
Incurring loss as a % of Cov. A	# of Claims - non-CAT	# of Claims - CAT	# of Claims total
70-74	121	15	136
75-79	107	24	131
80-84	92	19	111
85-89	100	33	133
90-94	100	45	145
95-99	104	46	150
100-104	119	90	209
105-109	70	216	286
110-114	65	640	705
115-119	57	317	374
120-124	56	762	818
125-129	43	179	222
130-134	37	176	213
135-139	32	222	254
140-144	31	234	265
145-149	29	296	325
>150	155	3368	3523

This chart does not support the conclusion that there will be a cleanly identified ratio that will capture virtually all incurred losses that are reconstructions while capturing virtually no incurred losses that are profoundly expensive repairs. Or put another way, the selection of 90% is in some ways arbitrary. This chart does support a conclusion that a ratio roughly between 85% and 95% will capture virtually all incurred losses that are reconstructions while capturing virtually no incurred losses that are profoundly expensive repairs. But selecting 90% versus any other break point remains arbitrary. That said, however, this chart also supports the conclusion that, nonetheless, using 90% does not distort the utility of the data in better understanding underinsurance. This can be seen because even a ratio that is likely in error, such as 70% (in other words, assuming that an incurred

loss that is 70% of Coverage A will virtually never be a profoundly expensive repair) would lead to the conclusion that Coverage A is inadequate 89.925% of the time. To put the point colloquially, homes so rarely are profoundly but not totally destroyed that no matter where one draws the line for defining total loss, the conclusions do not change very much. That said, it always bears keeping in mind—insurers do have the data on which losses are TLs, so the below calculations could always be checked using that data.

Using the 90% definition of TLs leads to a series of conclusions about underinsurance.

**MAJOR CONCLUSION 1: Point-of-sale estimates of the cost of reconstruction, even in the absence of a catastrophe-caused loss, underestimate the cost of reconstruction at least three-quarters of the time and when underestimates occur, they are, on average, at least one-third too low. If the loss occurs because of a catastrophe, then the frequency and depth of underinsurance is worse.** Amongst homes fully insured and experiencing an insured loss requiring complete reconstruction (7220 claims), the frequency of the incurred loss being more than the Coverage A limit is 96.1%, with the average depth of shortfall of coverage being 54.9%. If the loss occurred in a catastrophe, then the frequency of the incurred loss being more than the Coverage A limit is 98.6%, with the average depth of shortfall of coverage being 57.1%. If the loss did not occur in a catastrophe, then the frequency of the incurred loss being more than the Coverage A limit is 77.4%, with the average depth of shortfall of coverage being 35.5%.<sup>216</sup>

The point-of-sale algorithm used to estimate reconstruction cost anticipates and accounts for projected demand surge, so in the instances of non-catastrophe loss events, the front-end estimate is over-stated. When both: (a) the insured's actual reconstruction costs exceed the post-event algorithm estimate of reconstruction cost, and (b) the insurer and insured do not reach an agreement on the amount of the incurred loss, the insurer-reported incurred loss will be the algorithm estimate and therefore will be understated. Consequently, the major conclusion may be, to an undetermined degree, understated.<sup>217</sup>

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<sup>216</sup> Amongst the policies with RCV only, the frequency of the incurred loss being more than the Coverage A limit is 83.5%, with the average depth of loss being 43.1%. If the loss occurred in a catastrophe, then the frequency of the incurred loss being more than the Coverage A limit is 85.0%, with the average depth of loss being 46.9%. If the loss did not occur in a catastrophe, then the frequency of the incurred loss being more than the Coverage A limit is 73.5%, with the average depth of loss being 20.5%.

<sup>217</sup> Across all homeowner policies in the data set, 88.04% of TLs were caused by a catastrophe. Eliminating GRC and ACV policies from the data set changes the frequency to 87.97%.

**MAJOR CONCLUSION 2: ERC does not work as an adequate prophylactic for underinsurance.** When a home with ERC coverage is underinsured, 48.97% of the time the depth of underinsurance is more than 50%. If a loss occurs in a catastrophe, policies with ERC still have an incurred loss that exceeds Coverage A plus ERC 62.01% of the time and by an average depth of 29.86%; if the loss is not in a catastrophe, then the incurred loss exceeds Coverage A plus ERC 43.04% of the time and by an average depth of 21%. The three most common levels of ERC are 120%, 125%, and 150%, accounting for 18.1% (1307 claims), 31.2% (2203 claims), and 41.76% (3015 claims) of all ERC policies, respectively. If a loss occurs in a catastrophe, then policies with 120% ERC still have an incurred loss that exceeds Coverage A plus ERC 95.13% of the time and by an average depth of 35.89%; if the loss is not in a catastrophe, then the incurred loss exceeds Coverage A plus ERC 56.78% of the time and by an average depth of 24.35%. If a loss occurs in a catastrophe, then policies with 125% ERC still have an incurred loss that exceeds Coverage A plus ERC 47.92% of the time and by an average depth of 29.08%; if the loss is not in a catastrophe, then the incurred loss exceeds Coverage A plus ERC 41.99% of the time and by an average depth of 18.42%. If a loss occurs in a catastrophe, then policies with 150% ERC still have an incurred loss that exceeds Coverage A plus ERC 59.68% of the time and by an average depth of 29.76%; if the loss is not in a catastrophe, then the incurred loss exceeds Coverage A plus ERC 33.78% of the time and by an average depth of 19.56%.<sup>218</sup>

**MAJOR CONCLUSION 3: Demand surge does not explain underinsurance.** Demand surge can be measured by the delta between incurred losses that do and do not occur in catastrophes. The delta is 23.8%. Since reconstruction cost estimates seek to incorporate demand surge pricing, if demand surge explained underinsurance, then underinsurance would not be seen, or at least would not be seen in any material frequency and depth, in policies with RCV and ERC (7220 claims). Across these policies, there is underinsurance 60.18% of the time, and by an average depth of 29.21%. Of these 7220 claims, 98.7% of these policies have at least 120% ERC.

**THE IMPORTANCE OF THESE CONCLUSIONS:** So, what does all this 2022 data demonstrate about what did insurers know and when did they know it? To answer that question, recall that insurers have (and have always had) precise internal data both on which claims are reconstructions versus profoundly expensive repairs (“total losses” or “TLs”), and for each of those claims on what the point-of-sale estimate of reconstruction cost was. What the above data analysis exposes is what the insurers’ internal data

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<sup>218</sup> See generally Administrative Rulemaking File for CAL. CODE REGS., tit. 10, § 2695.183.

likely has reflected all along: (1) that point-of-sale estimates of the cost of reconstruction underestimate the cost of reconstruction at least three-quarters of the time, and when underestimates occur, they are on average at least one-third too low; (2) ERC does not work as an adequate prophylactic for underinsurance; and (3) demand surge does not explain underinsurance.

## VI. SOLUTIONS

A lot of money is on the line. In its *2021 Insurance Fact Book*, for example, the Insurance Information Institute estimated that in the Gulf and Atlantic States in the United States, over 7.3 million single-family homes faced moderate to extreme hurricane wind risk, with a cumulative reconstruction value of over \$1.8 trillion.<sup>219</sup> Verisk's 2019 Wildfire Risk Analysis estimates 4.5 million homes across the United States are at high or extreme risk from wildfire.<sup>220</sup> According to worldwide insurance broker, Aon, "[i]nsured losses from natural disasters hit a 10-year high of \$42 billion in the first half of 2021, with the biggest loss related to extreme cold in the United States in February."<sup>221</sup> Because floods can happen without a hurricane—arguably every home is at some risk from flood.<sup>222</sup>

As seen in this article, insurance policies emphasize that RCV is not GRC. But, as one insurance trade magazine acknowledged, ERC is "somewhat similar to a guaranteed replacement cost policy."<sup>223</sup> That is troubling, as with some regularity, by raising questions (that public data did not answer) about the frequency of underinsurance, cause of underinsurance, and responsibility for selection of inadequate coverage, insurers have

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<sup>219</sup> INS. INFO. INST., *supra* note 28, at 92.

<sup>220</sup> *FireLine State Risk Report – California*, VERISK ANALYTICS <https://www.verisk.com/insurance/campaigns/location-fireline-state-risk-report/> (populate "Please fill out the form to get access to our FireLine Risk Reports"; click "Access Reports"; select "California FireLine Risk Report, 2021") (last visited Mar. 21, 2023).

<sup>221</sup> Carolyn Cohn, *Natural Disaster H1 Insured Losses Hit 10-year High-Aon*, REUTERS (July 21, 2021, 12:31 PM), <https://www.reuters.com/business/finance/natural-disaster-h1-insured-losses-hit-10-year-high-aon-2021-07-21/>.

<sup>222</sup> Stephanie K. Jones, *It Doesn't Take a Hurricane to Cause a Flood*, INS. J. (May 25, 2021), <https://www.insurancejournal.com/news/southcentral/2021/05/25/615635.htm> (last visited Mar. 21, 2023).

<sup>223</sup> Bethan Moorcraft, *Three Insurance Coverages that Will Make a Difference in a Total Loss Wildfire*, INS. BUS. AM. (June 8, 2021), <https://www.insurancebusinessmag.com/us/news/catastrophe/three-insurance-coverages-that-will-make-a-difference-in-a-total-loss-wildfire-257270.aspx>.

avoided legal consequences for underinsurance in a policy “somewhat similar to a guaranteed replacement cost policy.”<sup>224</sup>

Those outcomes are at odds with what data now indicates about what insurers know and when they knew it. Insurers have the data. The now public-facing data strongly suggests that what data shows: point-of-sale reconstruction estimates underestimate almost every time, and by on average of roughly 55%. The now public-facing data debunks the notion of adequacy but-for a natural disaster.

It may well be that the cause of the error rate in an insurer’s point-of-sale algorithm cannot be identified; that it is akin to a “mathematical fallacy.”<sup>225</sup> Yet, does that matter? Whether or not an insurer can understand *why* the algorithms are consistently and profoundly underestimating in its portfolio, each insurer can look at its own portfolio and know the algorithms *are* consistently and profoundly underestimating, and each insurer can calculate within its portfolio: (1) how often; and (2) on average by how much. Consequently, each time the insurer makes a point-of-sale reconstruction estimate of reconstruction cost, the insurer is presenting something as true that likely is not true.

In theory, insurers do not have to make a point-of-sale reconstruction estimate. But as a practicality they do, because the market has created that expectation. For an insurer, it may be a useful post-loss narrative to assert that no one knows the true reconstruction cost of a home better than the homeowner, but as seen throughout this article, that is not the point-of-sale narrative. Insurers themselves advise homeowners to be sure they have adequate insurance, and if they are not sure, to discuss it with their insurer. Or as the National Association of Insurance Commissioners puts the point in its adopted template consumer guide:

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<sup>224</sup> *Id.*

<sup>225</sup> Cecil B. Read, *Mathematical Fallacies*, 33 SCH. SCI. & MATHEMATICS 585 (1933) (defining mathematical fallacy as a mistake in an apparently sound mathematical proof; the end point of the proof is absurd and thus exposes a buried if sometimes unknown error. When “an apparently correct chain of operations leads to an absurd result” one must “admit the conclusion to be false; the problem is to find the flaw in the reasoning.”). *See also* Viki Zeta & Andrew Hayes, *Mathematical Fallacies*, BRILLIANT, <https://brilliant.org/wiki/mathematical-fallacies/#:~:text=An%20assumption%20or%20series%20of,is%20called%20a%20mathematical%20fallacy> (last visited Oct. 7, 2023) (“An assumption or series of steps which is seemingly correct but contains a flawed argument is called a mathematical fallacy.”); ARTHUR CONAN DOYLE, *THE CASE BOOK OF SHERLOCK HOLMES* 1011 (John Murray, 1927) (“When you have eliminated all which is impossible, then whatever remain, however improbable, must be truth.”).



Your insurance agent usually will help you decide how much dwelling coverage to buy when you first get homeowners insurance. Your coverage should equal the full replacement cost of your home. Note that replacement cost and market value are not the same. The market value, which includes the price of your land, depends on the real estate market.<sup>226</sup>

But this advice has pitfalls. As the General Counsel to the Independent Agents and Brokers of the West have explained:

[I]nsurers . . . have an economic incentive to underestimate replacement costs. Simply put, the lower the replacement cost valuation, the lower the premium. And the lower the premium, the more likely an insurer is to sell its policies in a highly competitive marketplace. . . . Insurers . . . understand that total losses are very rare—a fact that makes this line of insurance generally very profitable for insurers, and also generally insulates all parties from the consequences of underestimating total replacement cost.<sup>227</sup>

This explanation correlates to the agent behaviors described *infra* by Wells and alluded to with some frequency in the caselaw and the CDOI administrative record—failure to input all the details about a property and failure to update reconstruction estimates and revisit premium at annual renewal.

What is an insurer to do? In theory, the best option would be a mechanical fix to correct for a known error rate, metaphorically putting glasses on the algorithm's short-sightedness. Assume the simplest case, meaning that the error rate is the same for all houses in all locations. If an insurer knows their algorithm generally underestimates by an average of 45%, then the insurer could adjust all its estimates up by 45%. But that theoretical fix does not work. As was alluded to in the *Sheahan* opinion, an insurer is in a box that hamstringing it from the mechanical fix; if an insurer acts unilaterally, then they may lose business to competitors, and if they coordinate with other insurers, then they may attract antitrust attention.<sup>228</sup>

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<sup>226</sup> NAT'L ASS'N INS. COMM'RS, *supra* note 24, at 4.

<sup>227</sup> Administrative Rulemaking File for CAL. CODE REGS., tit. 10, § 2695.183 at 1198.

<sup>228</sup> See, e.g., *Sheahan v. State Farm Gen. Ins. Co.*, 442 F. Supp. 3d 1178, 1193–95 (N.D. Cal. 2020).

The same crosscurrents also hamstring Verisk and CoreLogic from “putting glasses” on the algorithms.

In a jurisdiction that does not wish to revisit the rule that selection of coverage is the insured’s responsibility, a possible solution is a combination of quality control and transparency. The quality control piece could take the approach of the already-adopted California regulatory reform, which corrects for the known causes of error. The regulation defines minimum components of an estimate, requires the estimate be updated annually, requires the person applying the algorithm to have at least minimal training, and requires the insurer to annually validate the methodology of the algorithm.<sup>229</sup> This regulatory approach then could be expanded in two ways. Validation requirements could be expanded to explicitly require insurers to make annual calculations of algorithm error rates and could require insurers to report those error rates to regulators (those same reporting requirements could reach the vendors of the algorithms).

The transparency piece could be a marketplace application of the reporting requirements. Both at point-of-sale and renewal, an insurer quoting RCV could be required to quote two premiums. The first quote would be the premium if the homeowner purchases Coverage A capped at the algorithm’s estimated reconstruction cost. However, the insurer would be required to disclose its algorithm’s error rate. The second quoted premium would be the premium if the insurer puts metaphorical glasses on the algorithm to correct for that insurer’s known error rate.

The transparency piece needs to be a regulatory requirement, so no insurer is put at a structural competitive disadvantage by doing it. Additionally, the method of disclosure needs to meet appropriate standards for it to be effective.<sup>230</sup>

In a jurisdiction willing to revisit the rule that the selection of coverage is the insured’s responsibility, the solution could be more straightforward. After putting responsibility for adequacy of coverage estimates on the insurer, the jurisdiction could adopt a rule that when an insured purchases RCV with a Coverage A limit equal to the insurer’s point-of-sale estimate, then if the insurer’s point-of-sale estimate (calculated however the insurer wishes) is in error (to the insured’s detriment) by more than 5%, the policy is reformed to insure as if the policy was GRC.<sup>231</sup>

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<sup>229</sup> CAL. CODE REGS., tit.10, §§ 2188.65, 2190.2, 2190.3, 2695.180, 2695.181, 2695.182, 2695.183.

<sup>230</sup> See generally Klein, *supra* note 4.

<sup>231</sup> See Klein, *supra* note 5, at 109–10.

## VII. CONCLUSION

There is a sentinel message every insurer and insurance regulator emphasizes to homeowners about homeowner insurance—it is really, really important to *fully* insure a home. But right now, the law ties the hands of both the insurer and the insured. After every natural disaster, stories abound about homeowners who thought they were fully insured, only to discover they were not. At which point, the finger-pointing (and perhaps the litigation) begins. All of this is avoidable. It should be avoided. It serves no one.

# A PRIMER ON THE ECONOMICS OF CONFLICTS OF INTEREST

PETER SIEGELMAN\*

## ABSTRACT

*There is a well-known conflict of interest between liability insurers and policyholders with respect to the decision to settle or litigate a claim. This short note provides a simple graphical explanation for the problem and grounds it in the way the structure of the parties' payouts drives their attitudes towards risk. An optional appendix links the insights to the elementary mechanics of financial options.*

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## I. INTRODUCTION

This essay offers a graphical explanation of the conflict between insurers and policyholders in the decision about whether to settle or litigate a claim under a liability insurance policy with limits on coverage.<sup>1</sup> This complex and important topic has been the subject of voluminous litigation<sup>2</sup> and has attracted considerable attention from sophisticated legal scholars and policymakers.<sup>3</sup> My goal here is decidedly not to break any new ground. Rather, I offer a simple, visual, and hopefully, intuitive way of understanding *why* conflicts between insurers and policyholders arise and how they interact with other aspects of litigation such as the costs of suit and the “quality” or merits of the case. To that end, I’ve suppressed many of the institutional details that make the subject so tricky.

## II. LITIGATION AND LIABILITY INSURANCE

### A. BASIC MECHANICS

Liability insurance protects policyholders from the risk that they will have to pay (e.g., in tort) for harm they have imposed on a third party. Such policies cover the insured defendant for the amount that a court awards the victim; if the parties settle the lawsuit instead of litigating it to a final judgment, the insurer is also responsible for the settlement amount. Typically, the policy also covers the cost of defending against a lawsuit brought against the policyholder.

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<sup>1</sup> As a bonus, the analysis maps neatly into the elementary theory of financial options. For readers familiar with basic option theory, the figures presented below will be easily recognizable; for those who are not, the economic insights will be derived independently. An appendix summarizes the relevant option analysis.

<sup>2</sup> See, e.g., *Crisci v. Sec. Ins. Co. of New Haven*, 426 P.2d 173 (Cal. 1967). As of July 25, 2023, *Crisci* has been cited in 517 state and federal judicial opinions and 330 law review articles.

<sup>3</sup> RESTATEMENT OF L. OF LIAB. INS. § 24 (AM. L. INST. 2019). The scholarly literature includes, but is not limited to, Robert E. Keeton, *Liability Insurance and Responsibility for Settlement*, 67 HARV. L. REV. 1136 (1954); Kent D. Syverud, *The Duty to Settle*, 76 VA. L. REV. 1113 (1990); Alan O. Sykes, *Judicial Limitations on the Discretion of Liability Insurers to Settle or Litigate: An Economic Critique*, 72 TEX. L. REV. 1345 (1994); Tom Baker, *Liability Insurance Conflicts and Defense Lawyers: From Triangles to Tetrahedrons*, 4 CONN. INS. L. J. 101 (1998); Ezra Friedman, *The Value of a Statistical Judgment: A New Approach to the Insurer's Duty to Settle*, NW. L. & ECON. SERIES, no. 15–03, Dec. 2014, at 1, [https://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=2553439](https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2553439).

Crucially, however, the policies almost always contain limits on coverage. These are dollar amounts beyond which the insurer is not responsible. This means that if the award (or settlement) is greater than the policy limit, any excess must be paid by the policyholder. Because the insurer is always responsible for at least some payouts, the insurer usually<sup>4</sup> has control over most aspects of the litigation strategy, including the decision about whether to settle a claim against the policyholder and how much to spend in defending it. For now, we will unrealistically assume that litigation is costless, but we'll relax that assumption later.

Suppose that a policyholder (PH) has liability insurance with a coverage limit of \$120,000, with no deductible.<sup>5</sup> He is sued by a plaintiff (P) for a covered slip and fall injury that occurred on his property.<sup>6</sup> Suppose the lawsuit is definitely going to trial and consider the insurer's payout as a function of the amount awarded by the jury. For any amount less than the \$120,000 policy limit, the insurer pays 100%, so each dollar of award below this limit means a full dollar of loss for the insurer. If the award is greater than the limit, the policyholder is responsible for the excess, so the worst that can happen from the insurer's perspective is that it pays the policy limit. Graphically, this is depicted by the red line in Figure 1, which shows the insurer's payout increasing<sup>7</sup> dollar for dollar for judgments below the limit but then flattening out at the \$120,000 limit, which is precisely what a limit is designed to do.<sup>8</sup>

The policyholder's payout (as a function of the jury award or settlement amount) is graphed by the blue line in Figure 1. Low awards or settlements—anything below the coverage limit—cost him nothing since they are entirely paid for by his insurer. He is only responsible for any amount above the \$120,000 limit. Therefore, his payout is horizontal (at zero) for awards below the limit, and then increases dollar-for-dollar with

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<sup>4</sup> Though not always. See Douglas R. Richmond, *Liability Insurance and the Duty to Pay Defense Expenses Versus the Duty to Defend*, 52 TORT TRIAL & INS. PRAC. L. J. 1, 8 (2016); Charles Silver, *Basic Economics of the Defense of Covered Claims*, in RESEARCH HANDBOOK ON THE ECONOMICS OF INSURANCE LAW 438, 438 (Daniel Schwarcz & Peter Siegelman eds., 2015).

<sup>5</sup> See *infra* Section III.B for analysis of coverage with a deductible.

<sup>6</sup> Purely to assist in keeping track of the parties, I'll refer to the policyholder as "he" and the plaintiff as "she." The insurer is an "it."

<sup>7</sup> Since we are dealing with payouts or losses by the insurer or policyholder, the amounts are all negative. It is the (absolute) *magnitude* of the insurer's payout that increases as the amount awarded rises (below the policy limit). Those minus signs can be tricky.

<sup>8</sup> The phrase "dollar-for-dollar" means that the slanted part of the insurer's payout function, below the limit, has a slope of -45°.

any amount that remains.<sup>9</sup>

Finally, the total amount obtained by the plaintiff is just the combined amount paid by the insurer and the policyholder, which is the vertical sum of the two parties' payouts. This forms the straight black line (with slope  $(-45^\circ)$ ) in Figure 1. That makes sense, since every dollar the plaintiff receives must come from one or the other of the two possible sources of payment. In our simple example, the plaintiff shouldn't notice or care that the first \$120,000 of payout comes from one source and anything above that from another.<sup>10</sup>

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<sup>9</sup> That is, an award of \$120,001 costs the policyholder \$1.

<sup>10</sup> This simplifying assumption should not be understood as denying the existence of differences between "insurer money" and "policyholder money." In the real world, such differences can be important. For instance, defendants may not have the wealth to pay awards in excess of the policy limits, while insurers generally do. See, e.g., Steven Shavell, *The Judgment Proof Problem*, 6 INT'L. REV. OF L. AND ECON. 45 (1986). And there can be *moral* differences between insurer money and defendant money. See, Tom Baker, *Blood Money, New Money, and the Moral Economy of Tort Law in Action*, 35 L. & SOC. REV. 275, 281, 301 (2001) (demonstrating that plaintiff-side tort lawyers often believe it is illegitimate to seek damages in excess of the policy limits, and refer to money paid out of defendant/policyholder pockets as "blood money."). Thanks to Travis Pantin for this insight.

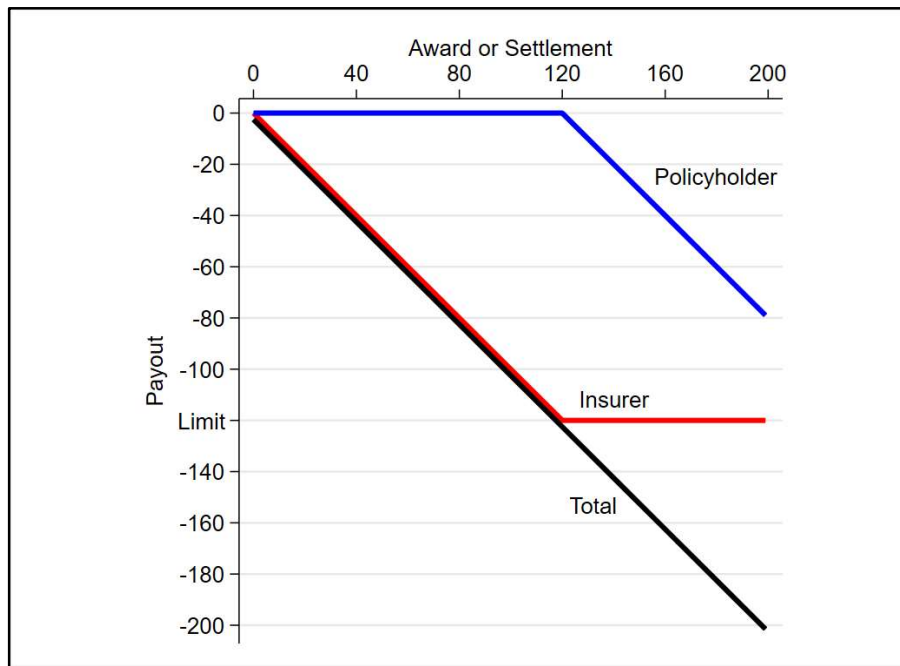


Figure 1: Insurer, Policyholder and Total Payouts as Functions of Award or Settlement (Policy Limit = \$120,000)

## B. ANALYSIS

Hidden in Figure 1 are some deep insights about the differences between the insurer's and the policyholder's feelings about risk, which drive the well-known conflict between the parties that arises in situations where the award may exceed the policy limit. To uncover these principles, we need to introduce risk into our analysis. Instead of assuming that the outcome in the underlying litigation is known for sure, let's suppose that it is uncertain. More specifically, suppose everyone agrees there is a 50% chance that the plaintiff will prevail at trial and be awarded \$200,000 and a 50% chance that she will lose and receive nothing. This dispersion of possible outcomes is what we mean by risk.

Remember, we're still assuming there are no trial costs, so all that is at stake is the amount of the award. Finally, let's also assume for the time being that the insurer has complete control over the litigation, meaning that it alone decides whether to accept any settlement offer or risk going to trial instead.



### 1. The Plaintiff's Perspective

To understand how the parties view the litigation when the outcome is uncertain, it will be useful to start with the “expected value” of the lawsuit to the plaintiff (P).<sup>11</sup> Expected value (EV) is the “average” outcome, where average is understood as the “probability-weighted average of the possible outcomes.” That is, letting the  $P$  subscript denote the plaintiff:

$$\begin{aligned} EV_P &= \text{Prob.}(\text{lose}) \times \text{Amt. Rec'vd if Lose} + \\ &\quad \text{Prob.}(\text{win}) \times \text{Amt. Rec'vd if Win} \\ &= \frac{1}{2}(\$0) + \frac{1}{2}(\$200,000) = \$100,000. \end{aligned} \tag{1}$$

Purely for convenience, we'll assume that the plaintiff is risk-neutral. That is, she is indifferent between getting the expected value of a gamble or the actual gamble itself.<sup>13</sup> Here, because the expected value of the lawsuit to the plaintiff is \$100,000, she would require at least that much to settle the case and avoid trial. Anything less and she would prefer to roll the dice at trial.

### 2. The Insurer's Perspective

Given the uncertain outcome, how will the insurer feel about taking this case to trial? Remember, the insurer's maximum exposure is capped at the policy limit, so when it computes the expected value of going to trial, it knows it will not have to pay the full amount of the award if the plaintiff wins; at worst, it will only be liable for the policy limit. Because it will never have to pay more than the policy limit, the *insurer's* expected value of going to trial is:

$$EV_I = -\left[\frac{1}{2}(\$0) + \frac{1}{2}(\$120,000)\right] = -\$60,000. \tag{2}$$

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<sup>11</sup> The expected value of the lawsuit to the plaintiff's combined opponents—the insurer and policyholder *taken together*—is simply the negative of this amount.

<sup>12</sup> Note that since the plaintiff will either win or lose, the total probability of those outcomes must sum to 1.

<sup>13</sup> Someone who is risk-neutral would be indifferent between: (a) a gamble that wins \$1 if a (fair) coin comes up heads and loses \$1 if the coin comes up tails; and (b) \$0, for sure. They would take the bet if you offered them 1 cent; they'd refuse to pay 1 cent to play.

Any judgment (or settlement) in excess of that limit lies on the *flat* portion of the insurer's payout diagram in Figure 1 (in red), which means that from the insurer's perspective, a judgment of \$200,000 is no worse than a judgment of \$120,000—it will owe the same \$120,000 in either case. Given this, the insurer will reject any settlement offer from the plaintiff that costs it more than \$60,000, since a payment of anything more than that would be worse (on average) for the insurer than going to trial.<sup>14</sup>

Graphically, the expected payout by the insurer of a lawsuit that has a 50/50 chance of awarding \$0 or \$200,000 (but is subject to a \$120,000 policy limit) is represented in Figure 2. It is just the midpoint of the dashed line connecting the points (0,0) and (200,-120), denoted by the X. Notice that the insurer's *expected* payout when facing this gamble (\$60,000) is smaller in absolute magnitude than (lies *above*) the actual payout that would arise from a settlement or judgment of \$100,000. Since that amount is less than the policy limit, the insurer would have to pay all of it. By taking a gamble on trial, the insurer is likely to leave itself at least as well off as if it had to pay the full \$100,000 expected value in settlement.

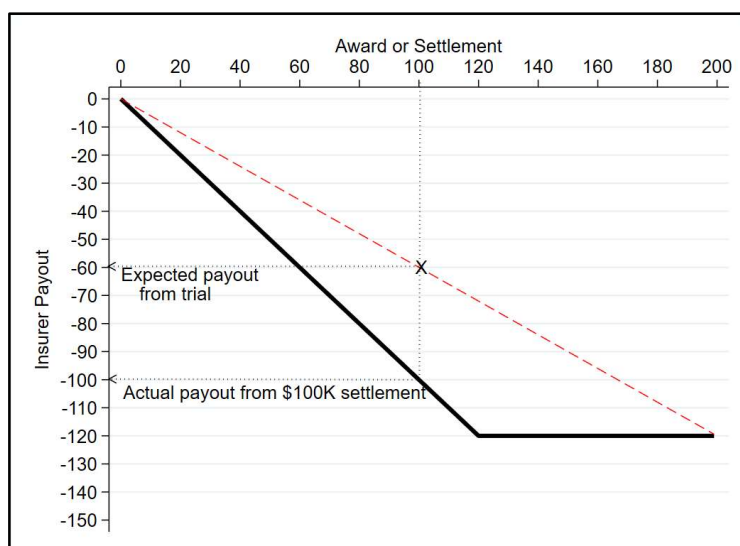


Figure 2: Insurer's Payout and Expected Value of Lawsuit with Liability of 0 or 200, each with 50% Probability (policy limit is 120)

<sup>14</sup> Of course, the insurer might have all kinds of additional reasons to prefer litigating, including establishing a reputation as a tough negotiator in future cases. But we abstract from those motives to simplify the analysis.

It should be clear, then, that when the insurer controls the decision, there is no possibility of settling this case. The plaintiff will reject any offer to settle that leaves her worse off than going to trial would (on average), which cashes out to a \$100,000 demand. The insurer will refuse to pay anything more than what it would expect to pay if the case went to trial (\$60,000), so there is no bargain to be struck here—litigation is unavoidable.

Crucially, this is not simply a feature of the particular numbers chosen. Rather, it is dictated by the shape of the insurer's payout function: the fact that it flattens-out at the policy limit that caps its exposure means that whatever part of the award is above the policy limit “doesn't count” from the insurer's perspective. Put differently, the insurer will always gain by taking a chance on litigation rather than choosing the sure thing—settling (at the claim's expected value). That's because there is a structural asymmetry in the way that awards to the plaintiff translate into payouts by the insurer. An extra dollar of any “large” award is free to the insurer, because once the award surpasses the policy limit, every marginal dollar is paid by the policyholder. The cost of a “small” award, by contrast, is entirely borne by the insurer, so an additional dollar awarded to the plaintiff costs the insurer a full extra dollar.

To see how this plays out, consider an alternative lawsuit that will result in an award of either \$1,000 or \$199,000, each with 50% probability. It should be clear that this second suit has the same expected *total award* as the first one:  $\frac{1}{2}(\$1,000) + \frac{1}{2}(\$199,000) = \$500 + \$99,500 = \$100,000$ . Although it has the same expected award, the second suit is less risky than the first. In finance, risk is typically measured by the standard deviation (SD), which captures the dispersion of outcomes around their average. For the first lawsuit, the SD of the award is 100, while for the second it is 99.<sup>15</sup> Comparing standard deviations reveals what should be clear intuitively—the second lawsuit is less risky than the first, because its outcomes are clustered more closely around the average or expected value.

Notice that the insurer will always prefer to face the first suit than the second because *its* own expected payout is larger under the second—\$60,500 ( $= \frac{1}{2}(\$1,000) + \frac{1}{2}(\$120,000)$ ), versus \$60,000 for the first. To be sure, the second suit does have lower maximum exposure (\$199K vs \$200K). However, that “savings” does the insurer no good since it comes from over-the-limit dollars the insurer was never going to pay in the first place. On the flip side, the second suit has \$1,000 of guaranteed exposure (win or lose), while the first suit costs nothing if the insurer wins. All of this implies that the insurer's payout is structured so that its expected payment actually falls

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<sup>15</sup>  $SD_1 = \sqrt{(200,000 - 100,000)^2 + (0 - 100,000)^2} = 100$ .  $SD_2 = \sqrt{(199,000 - 100,000)^2 + (1,000 - 100,000)^2} = 99$ .

when the risk rises. Naturally, the insurer *likes* that increase in risk.<sup>16</sup>

### 3. The Policyholder's Perspective

We've assumed thus far that it is the insurer who gets to decide whether to take the safe option and settle or risk going to trial. But we might imagine that this right belongs instead to the policyholder. How will he evaluate the situation?

Remember, the plaintiff has a 50% chance of winning at trial, and if she wins, she'll be awarded \$200,000. She should thus be willing to accept anything more than the case's expected value of \$100,000 to settle it. But given that the policyholder is only responsible for payouts above the policy limit, his expected value of going to trial is:

$$EV_{PH} = -[\frac{1}{2}(\$0) + \frac{1}{2}(\$200,000 - \$120,000)] = -\$40,000. \quad (3)$$

This means that the policyholder would be willing to spend up to \$40,000 of his own money to avoid going to trial, since that's his expected loss. Consider a settlement offer by the plaintiff for \$100,000. That's well below the policy limit, so if the policyholder controls the decision, he would happily agree to that amount. It leaves him with no out-of-pocket costs at all, since the entire settlement will be covered by his insurer.<sup>17</sup>

Figure 3 provides a graphical intuition for this result. Awards below the policy limit lie on the flat part of the policyholder's payout function. For

<sup>16</sup> Finance geeks might appreciate that the insurer's payout is a *convex* function of the amount awarded. A straightforward way to define a convex function is that it is one whose value at the midpoint of every interval in its domain is less than or equal to the average of its values at the ends of that interval. For the function

$f(\cdot)$ , which maps awards to insurer payouts, to be convex it must be true that for any awards  $a$  and  $b$ :

$$f(\frac{1}{2}a + \frac{1}{2}b) \leq \frac{1}{2}f(a) + \frac{1}{2}f(b).$$

This is precisely the case with the insurer's payout function. The key finance insight is that payout convexity is associated with a preference for risk (i.e., the opposite of risk-aversion). Someone with a convex payout structure always prefers a gamble to its expected value: that is, they always want to take a bet on a coin flip that wins \$1 on heads and loses \$1 on tails. Note that the insurer's risk-preference is not generic—it applies only to this particular problem and arises only from the structure of the insurer's payout function. It could well be that the insurer is *generally* risk-neutral, even though *in this context* it will prefer to take a gamble on litigation rather than settle for the expected award in that litigation.

<sup>17</sup> Indeed, the policyholder would willingly agree to any total settlement of less than \$160,000 (with \$120,000 contributed by the insurer) rather than face trial.

him, an award of \$100,000 with certainty is costless; but going to trial has an expected payout (denoted by the X) of \$40,000 (midway between the two possible payouts of \$0 and \$80,000).

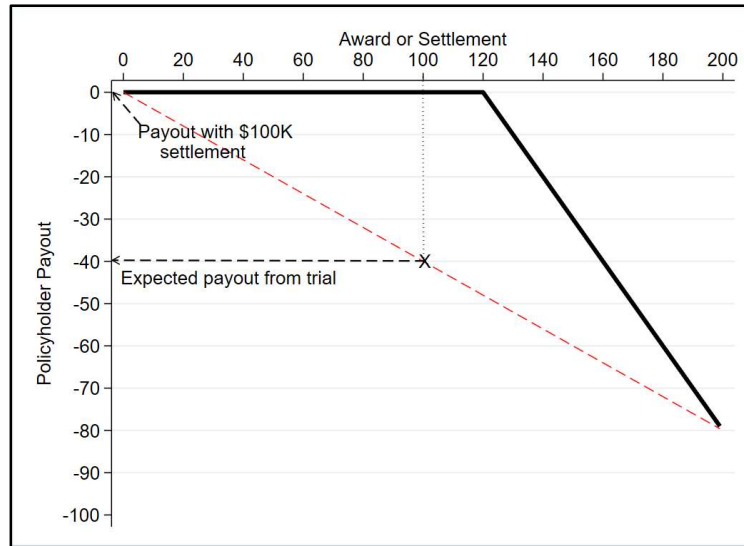


Figure 3: Policyholder's Payout and Expected Value of Lawsuit with Liability of 0 or 200, each with 50% Probability (policy limit is 120)

Just as with the insurer, the policyholder's preferences for risk are inherent in the structure of the payout function, though they take the opposite form. To see why, consider again the alternative lawsuit that generates liability of either \$1,000 or \$199,000, each with 50% probability. The plaintiff's expected award from this suit is still \$100,000. But the policyholder will prefer to face the second lawsuit rather than the original one. In the second suit, the policyholder's expected payout is  $(\frac{1}{2}(\$0) + \frac{1}{2}(\$199,000 - \$120,000)) = \$39,500$ , \$500 less than before. The worst outcome from the policyholder's perspective is not as bad (\$79,000 of over-the-limit exposure, vs \$80,000), while the best outcome is unchanged, since the additional \$1,000 minimum payout will always be paid entirely by the insurer. The second lawsuit is less risky (has a smaller SD), and the policyholder prefers it to the first one because he is risk averse.<sup>18</sup>

<sup>18</sup> That is, the policyholder's payout is a *concave* function of the award or settlement. This reverses the key finance insight from the previous note: payout concavity is associated with risk-aversion, rather than risk-preference. Someone with a concave payout function would always refuse to bet on a coin flip that wins \$1 on heads and loses \$1 on tails. Note that, again, we are not making a "global" statement about the policyholder's risk preferences. The policyholder's underlying

The basis of the conflict between insurers and policyholders can therefore be seen as arising from a difference in attitudes towards risk that are caused by each side's payout function. The insurer's payout function is capped at the \$120,000 policy limit, so it prefers riskier outcomes; the policyholder's payout function is costless until the limit is hit, so he prefers less-risky outcomes. Settlement is less risky than trial, and the policyholder and insurer have opposite views of whether this reduction in risk is good or bad.

#### 4. Symmetry?

It might be tempting to think that the insurer's behavior described earlier—turning down the plaintiff's settlement offer at the case's expected value—is “illegitimate,” since it entails gambling with the policyholder's money. If the plaintiff loses, nobody pays anything; if the plaintiff wins, the insurer pays the policy limit, and the policyholder is stuck with the remaining \$80,000. That characterization is logically correct. However, the same logic applies in reverse when the policyholder controls the settle/litigate decision and agrees to settle the case for its expected value (or more). By settling for an amount *under* the policy limit,<sup>19</sup> the policyholder would be spending the insurer's money.

The real issue is that when the responsibility for compensating the plaintiff is split between the two parties, but the decision about settlement is allocated (exclusively) to one of them, the structure of the problem guarantees that this party will end up “playing with the other's money.” That is, for any given award (or settlement) in Figure 1, one party will always be operating on the flat part of its payout function, where additional amounts come out of someone else's pocket and cost that party nothing.

At this point, however, a caution is in order. Just because the *math* is in some sense symmetric doesn't mean that the *parties* should be treated symmetrically. That is a normative conclusion, about which the analysis is silent. In particular, a preference for one party over another in this situation might well take into account the parties' relative sophistication, risk-tolerance, and ability to spread risk.<sup>20</sup> None of those elements are present in

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utility function (which maps her wealth into her utility) could make her risk-loving in most contexts. But in this narrow context, the payout structure means that the policyholder will always prefer less risk to more.

<sup>19</sup> More precisely, since the policyholder would be willing to spend up to \$40,000 of his own money to avoid going to trial, any total settlement less than \$160,000 (of which \$120,000 is contributed by the insurer) would be preferable to going to trial.

<sup>20</sup> Communication with Tom Baker, William Maul Measey Professor of L., U. Pa. Carey L. Sch., who has stressed that insured defendants are almost *by definition* generically risk-averse, almost always undiversified, and typically exert no control

the simple model sketched above, which therefore sheds no light on how the conflict should best be handled. If it does anything, it only illuminates the structure of the conflict.<sup>21</sup>

### C. THE IMPORTANCE OF REASONABLENESS

One thing the model can shed some light on is the importance of reasonableness in assessing the insurer's settle/litigate decision. As noted earlier, that decision typically belongs to the insurer.<sup>22</sup>

Consider a different variation of the original facts above. The plaintiff's lawsuit still pays \$200,000 if she prevails, and pays nothing if she loses. She again makes an offer to settle the lawsuit for \$100,000. But now suppose that its probability of success is only 20% rather than 50%. That means the plaintiff's expected value from trial is now:

$$EV_p = 0.2(\$200,000) + 0.8(\$0) = \$40,000. \quad (4)$$

The insurer's expected payout from trial becomes:

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over policy language. So various "contract interpretation" risks (including the risk of a conflict with one's insurer that is not covered by the policy language) might best be assigned to the insurer. When that occurs, competition should increase the premium paid for coverage, but given the policyholders' risk aversion, the tradeoff (higher premium for more coverage) will typically be welfare-enhancing.

<sup>21</sup> One intriguing proposal—which, however, seems not to have gotten much traction—comes from Richard Squire, who offers a relatively simple structural solution to the misaligned incentives: let each party separately resolve its slice of potential liability with the plaintiff. Richard Squire, *The Artificial Collective-Action Problem in Lawsuits Against Insured Defendants*, in RESEARCH HANDBOOK ON THE ECONOMICS OF INSURANCE LAW, *supra* note 4, at 461. Under his proposal, the policyholder would be free to settle his potential individual liability to the plaintiff, but this would not impact the insurer's ability to proceed to trial to determine what percentage of its policy limits it owes to the plaintiff. Squire's approach eliminates the capacity of either the insurer or policyholder to shift exposure to liability onto the other, but it does have some downsides. One is that it increases risk to policyholders, who might be asked to contribute some amount to settlement more often than under the "ignore the limits" rule favored by the Restatement of Liability Insurance. RESTATEMENT OF THE L. OF LIAB. INS. § 24 rep. note b (AM. L. INST. 2019). Savvy policyholders would recognize this *ex ante* and demand lower premiums for a Squire-rule policy, but of course many policyholders are not savvy. An additional wrinkle is that the "ignore the limits rule" might in some cases work to the advantage of plaintiffs. Sykes, *supra* note 3. That should tend to make a Squire-rule policy, which avoids this problem, somewhat cheaper in equilibrium.

<sup>22</sup> See discussion *supra* Section II.B.

$$EV_I = -(0.8(\$0) + 0.2(\$120,000)) = -\$24,000. \quad (5)$$

The insurer will still prefer to go to trial rather than settle this case for the \$100,000 the plaintiff has demanded. But here, the plaintiff's \$100,000 ask grossly (2.5×) exceeds the true value of the litigation, and the insurer's decision not to settle seems entirely appropriate.

Law and policy will therefore need to do more than simply require the insurer to settle whenever there is risk of an award that is above the policy limit. That rule would be too crude, because it fails to capture the difference between this example and the previous one—sometimes, plaintiffs demand much more than they could expect to win at trial, and it would make no sense for the law to require the insurer to acquiesce in that situation.

Given all this, there are only three possible rules that the law could embody. First, it might impose no constraints at all on the insurer's settlement decision, leaving it up to the insurance contract, as “negotiated” by the parties themselves.<sup>23</sup> The analysis above demonstrates that this will inevitably generate some cases where the insurer ends up litigating with the policyholder's money and exposing its insured to serious liability. The famous *Crisci* case<sup>24</sup> is an example of what can go wrong here. Still, there might be a case for no regulation if one believed that policyholders knew about the potential conflict and could negotiate for a lower price that reflected the higher risk they face.

A second choice might be to simply require settlement; but that is clearly unattractive for reasons highlighted above. A final alternative would be to impose a “soft” requirement of reasonable settlement behavior. This is precisely the approach adopted by The Restatement of the Law of Liability Insurance, which takes the position that “[w]hen an insurer has the authority to settle a legal action brought against the insured . . . and there is a potential for a judgment in excess of the applicable policy limit, the insurer

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<sup>23</sup> “Negotiated” is in quotation marks because in many contexts, it makes no sense to suppose that the parties actually bargain over any of the terms in an insurance contract. See RESTATEMENT OF THE L. OF LIAB. INS. § 2, cmt. d (AM. L. INST. 2019) (explaining that insurance contracts are standard forms, meaning that policyholders can choose coverage only by selecting from forms provided by the insurer. “Even in the commercial insurance market, the vast majority of insurance policies are standard-form contracts.”); see also RESTATEMENT (SECOND) OF CONTRACTS § 211, cmt. d (AM. L. INST. 1981) (concluding that “[a] party who makes regular use of a standardized form of agreement does not ordinarily expect his customers to understand or even to read the standard terms.”). Thanks to James Hallinan for these references and suggestions.

<sup>24</sup> *Crisci v. Sec. Ins. Co. of New Haven*, 426 P.2d 173 (Cal. 1967).



has a duty to the insured to make reasonable settlement decisions.”<sup>25</sup> Of course, this rule may raise difficult factual questions about whether the case would be worth litigating if the insurer bore the risk of an adverse outcome, but that is always the case whenever a reasonableness standard is adopted.

The simple model presented here does not illuminate exactly how the duty to make reasonable settlement decisions should be characterized.<sup>26</sup> But it does suggest that if courts are not going to adopt a completely laissez-faire regime with respect to these conflicts, it will be difficult to do better than some version of a reasonableness standard: qualitative dimensions (such as how strong was the plaintiff’s case) are necessarily at play, and it will be hard to formulate a crisp rule that covers all these dimensions.

### III. FURTHER TWEAKS

#### A. LITIGATION COSTS

So far, we have assumed that litigation and settlement are costless to all parties. That simplification made sense as a way to focus on the essential structure of the problem, but it is obviously wrong. Indeed, avoiding the cost of trial is presumably a key motive for the parties to settle: doing so minimizes payments to others (e.g., lawyers) which the parties can keep for themselves if they can negotiate a settlement.

Does recognizing that trials are costly change the analysis above? Unfortunately, there is no longer a simple graphical analysis, but the answer is, “maybe” (if trial costs are sufficiently high).<sup>27</sup> To see why, suppose that

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<sup>25</sup> RESTATEMENT OF THE L. OF LIAB. INS. § 24(1) (AM. L. INST. 2019). The Restatement adopts the view that the “disregard the limits” rule is the appropriate standard for reasonable behavior. That rule “has . . . become the most common test for determining whether an insurer gave ‘equal consideration’ to its insured’s interests in duty-to-settle cases,” and requires that the insurer accept any settlement offer that “a prudent insurer without policy limits would have accepted . . .” *Id.* at rep. note b (citations omitted). Note that the Restatement’s “disregard the limits” is a default rule: the parties can contract for something else if they choose to do so, and the Restatement’s formulation only operates when the parties are silent.

<sup>26</sup> It also ignores many other aspects of the problem. For example, policy limits are not chosen at random, and a rule that said that insurers were free to settle or litigate as they choose would presumably put pressure on policyholders to select higher limits for fear of a *Crisci* situation arising. 426 P.2d at 177–78. A full analysis is vastly more complicated than the simple story sketched here.

<sup>27</sup> The reason there is no longer a simple graphical analysis is that the introduction of litigation costs breaks the identity between what the plaintiff receives

as above, the policyholder has coverage with a limit of \$120,000.<sup>28</sup> The plaintiff's claim still has a 50% chance of a \$200,000 award at trial and a 50% chance of \$0. But we now assume that it costs \$50,000 for each side to litigate the lawsuit. Settlement, however, is costless. The presence of litigation costs means that what one side pays is no longer identical to what the other side receives. That identity still holds *if the case settles* (and litigation costs are avoided); but if the case goes to trial, there is now a \$100,000 "wedge" between what's paid and what's received, with the gap accounted for by each side's legal fees. Let's consider what happens when the insurer controls the settle/litigate decision, which was the source of the conflict we described earlier.

Now, the insurer's expected payout from going to trial is:

$$EV_I = -[\frac{1}{2}(\$50,000) + \frac{1}{2}(\$120,000)] = -\$85,000.^{29} \quad (6)$$

This is more costly than in the previous example, since there are litigation expenses incurred (for which the insurer is responsible) even when there is a pro-defendant verdict and no actual liability.

Note that the plaintiff faces litigation costs as well. Her expected value of litigation is now:

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and what the insurer and policyholder together pay—we now must keep track of payments to a party.

<sup>28</sup> We will assume that defense costs are "within limits," meaning that all such costs count against the policy's overall coverage limit, cutting into the amount available to pay for any actual award. Thus, when the plaintiff loses, the insurer pays \$50,000 in litigation expenses, but nothing to cover any judgment. When the plaintiff wins, the insurer pays the entire policy limit (consisting of \$50,000 in litigation costs and \$70,000 towards the judgment). If the policy were written with defense costs treated separately (excluded from policy limits), the analysis looks essentially the same. The insurer's expected trial cost is:

$$EV_I = -[\frac{1}{2} \times \$0 + \frac{1}{2} \times \$120,000] - \$50,000 = -\$110,000.$$

That is, the insurer always pays litigation costs in addition to the full policy limit of \$120,000. So the insurer has even more exposure than before and an even stronger reason to settle the case. *See* discussion *infra* Section III.A.

<sup>29</sup> We focus on the insurer here. But the policyholder's expected value from going to trial is now:

$$EV_{PH} = -[\frac{1}{2}(\$0) + \frac{1}{2}(\$200,000 - (\$120,000 - \$50,000))] = -\$75,000.$$

The \$120,000 limit is effectively lowered by the \$50,000 in litigation costs that are incurred if the case goes to trial, so there is only \$70,000 available to pay the plaintiff, with the policyholder responsible for the remaining \$130,000 of the award.

$$EV_P = [\frac{1}{2}(-\$50,000) + \frac{1}{2}(\$200,000 - \$50,000)] = \$50,000.^{30} \quad (7)$$

The plaintiff would settle for anything more than \$50,000, while the defendant would settle for anything less than \$85,000. There is now a bargaining surplus available to the parties if they can reach a settlement, so rational litigants will want to settle the case, even when the insurer controls whether to go to trial.

This means that the policyholder will—almost accidentally—receive some “protection” from the insurer’s “excessive” willingness to risk going to trial, merely because settlement offers a reason to avoid incurring those expenses. That’s true even for an insurer who faces a policy limit that would otherwise lead it to prefer trial to settlement. Of course, this will not always be the case: if trial costs are only \$10,000, for example, the insurer will expect to pay \$65,000 at trial, the policyholder will expect to receive \$90,000, and there is no mutually beneficial deal to be struck that avoids litigation. The insurer/policyholder conflict will not be eliminated under these circumstances.

#### B. DEDUCTIBLE

So far, we have analyzed the problem of shared payouts on the assumption that the insurer is responsible for all the payout up to the policy limit, while the policyholder is only responsible for those payouts above the limit. But insurance policies frequently contain a deductible, which is just a requirement that the policyholder is responsible for the “first” dollars of any payout up to the deductible amount; after that, the insurer pays any part of the award or settlement until the limit is reached, at which point the policyholder is again responsible for all payouts.<sup>31</sup>

Figure 4 illustrates how the presence of a deductible (here, assumed to be \$20,000) changes the analysis. (We maintain the assumption of a

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<sup>30</sup> When the plaintiff loses at trial, she incurs \$50,000 in expenses and receives nothing. When she wins, she incurs \$50,000 in expenses and receives a judgment of \$200,000, for a net of \$150,000.

<sup>31</sup> Like so much else in the economics of insurance, the theory of optimal deductibles was first explored by Kenneth Arrow. See Kenneth J. Arrow, *Uncertainty and the Welfare Economics of Medical Care*, 53 AMER. ECON. REV. 941, 960 (1973) (concluding that when the insurer charges “a fixed-percentage loading above the actuarial value for its premium[,] . . . the most preferred policy from the point of view of an individual is a coverage with a deductible amount; that is, the insurance policy provides 100 per cent coverage for all . . . costs in excess of some fixed-dollar limit.”). Interestingly, Arrow’s analysis implies that coverage limits are not optimal, at least in the relatively simple model he presents.

\$120,000 coverage limit, but that limit now caps the insurer's payout \$120,000 on *top* of the \$20,000 paid by the policyholder.) Figure 4 shows that the insurer's payout (in red) and the policyholder's payout (in blue) now contain not one, but two, "kinks." The insurer pays nothing when the award or settlement is less than the \$20,000 deductible, pays 100% of the next \$120,000 (that is, up to \$140,000 in award), and nothing thereafter. The policyholder's payouts are just the mirror image: awards of \$0 to \$20,000 are paid entirely out of pocket with no insurer contribution. After that \$20,000 has been paid, any additional amounts up to \$140,000 are solely the insurer's responsibility, so the policyholder pays nothing. But the part of any award greater than \$140,000 is still paid entirely by the policyholder.

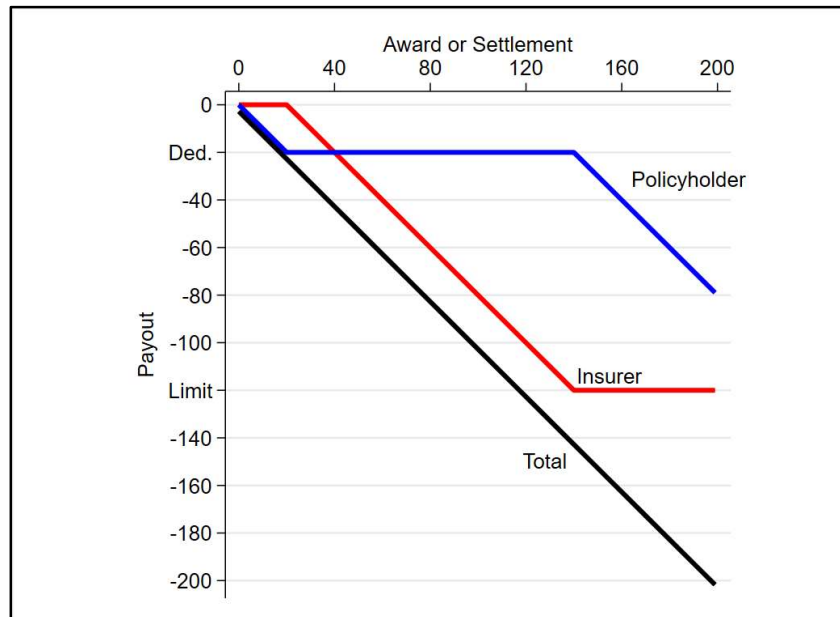


Figure 4: Insurer, Policyholder and Total Payout as Functions of Award or Settlement with Deductible of 20 (Policy Limit = 120)

The presence of a deductible changes the attitude of both parties towards some—but, interestingly, not all—risks. To see why, consider again a variation on our earlier lawsuit, in which the judgment at trial is either \$200,000 or \$0 (each with a 50% probability), where the policy limit is \$120,000 as before. But now, suppose there is a deductible of \$20,000. In this case, the presence of the deductible does *not* change the expected value of the payout to either party: The insurer expects to pay  $\frac{1}{2}(\$0) + \frac{1}{2}(\$140,000)$

- \$20,000) = \$60,000, as before;<sup>32</sup> the policyholder also expects to pay  $\frac{1}{2}(\$0) + \frac{1}{2}[(\$200,000 - \$140,000) + \$20,000] = \$40,000$ , as before. In this instance, the deductible alters nothing. When the plaintiff wins, the policyholder pays the “first” \$20,000 and the “last” \$60,000, instead of paying the “last” \$80,000 (as was the case without the deductible), but that is of no consequence.

However, the deductible does change attitudes towards risk, and preferences for trial or settlement. To see why, we need to consider the more general case. The insurer’s expected payout in the presence of a deductible (D) and a policy limit (L) is given by:

$$EV_I = -\frac{1}{2}Max[V_{lo} - D, 0] - \frac{1}{2}Min[V_{hi} - D, L], \quad (8)$$

where  $V_{lo}$  and  $V_{hi}$  denote the smallest and largest verdicts, respectively. Similarly, the policyholder’s expected payout in this situation is:

$$EV_{PH} = -\frac{1}{2}Min[V_{lo}, D] - \frac{1}{2}Max[V_{hi} - L - D, 0]. \quad (9)$$

Figure 4 illustrates the two “kinks” in each party’s payout function, and these kinks generate the more complicated formulas above. The presence of the kinks means that each party’s payout function changes shape—each is convex over some ranges and concave over others,<sup>33</sup> which in turn implies that each party’s attitude towards risk now depends on the amount of the possible verdicts/settlements at issue. That is, each side is risk averse for some risks, risk-neutral for others, and risk-loving for yet others.

For example, consider a lawsuit against the policyholder that will either pay the plaintiff \$0 if the defendant prevails or \$30,000 if the plaintiff does, each with a 50% probability. Using equations (8) and (9) above, we can see that the insurer pays \$10,000 (the verdict in excess of the deductible) if the case goes to trial and the plaintiff wins. Since that happens 50% of the time, that’s an expected value of -\$5,000. The policyholder pays \$20,000 (the entire deductible amount) if the plaintiff wins at trial, so his expected cost of trial is, similarly, one half that amount, or -\$10,000. (Of course, neither pays anything if the plaintiff loses.) The plaintiff’s expected value from going to trial is \$15,000 ( $\frac{1}{2}(0) + \frac{1}{2}(\$30,000)$ ), so suppose she makes an offer to settle the case at that amount. That offer requires the insurer to pay nothing, since the total is less than the deductible. Conversely, the policyholder would have

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<sup>32</sup> The \$140,000 reflects the fact that the insurer’s payout is capped at the policy limit, but it doesn’t start paying anything until the policyholder has paid the first \$20,000 in damages, using up her deductible.

<sup>33</sup> See *supra* notes 16, 18.

to pay the entire \$15,000 settlement. But since that sum is more than his \$10,000 expected cost from going to trial, he will want to reject the settlement offer and go to trial, while the insurer would obviously prefer to accept it.

Notice the role reversal here: For low-value claims in the presence of a deductible, the *policyholder* is the one who prefers the riskier alternative of trying the case while the insurer prefers the settlement of a claim in excess of the policy limit. While this scenario is theoretically possible, it seems unlikely to occur as a practical matter. If there are any costs of litigation, this kind of small-value claim is unlikely to be worth litigating in the first place. So this conflict is unlikely to arise in practice. Moreover, by definition, the stakes are small here, so the consequences of any conflict for the party who is not in control are not so severe as in the high-stakes example with which we began. And large risks—the kind we care most about—will still be generally subject to the same conflict of interest between insurer and policyholder as when there is no deductible, as shown earlier.

#### IV. CONCLUSION

In a lawsuit covered by liability insurance, policy limits that cap the insurer's exposure create well-known conflicts of interest between insured policyholders and their insurers. This short note explains why such conflicts are rooted in the structure of the problem, which shapes the parties' attitudes toward risk. The graphical analysis reveals when and why insurers prefer the risk of litigation and policyholders prefer to settle.

## V. APPENDIX

This Appendix repackages the insights of the main text in terms of financial options. There is a clear and obvious parallel between the structure of financial options and the structure of the parties' payouts in the settle/litigate decision described in the main text.

### A. OPTION BASICS

A financial option is simply the right—but not the obligation—to buy or sell an asset at a stated price.<sup>34</sup> Options are often referred to as “derivatives” because their value derives from, and their price reflects, the value of some other (“underlying”) asset (or, sometimes, liability). That asset may be a share of stock, but it could be anything—a car, a piece of real property, or a patent. The option *writer* is an offeror, who commits to selling (or buying) the asset at a given price for a given period. Instead of buying (or selling) that asset outright, however, an option holder instead owns the *right* to buy (or to sell) the asset at a given price.<sup>35</sup>

Consider someone who owns a *call* option,<sup>36</sup> giving her the right (but not the obligation) to buy one share of XYZ stock for \$120 any time before

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<sup>34</sup> For more detail on options, *see, e.g.*, STEWART BREALEY, STEWART MYERS & FRANKLIN ALLEN, *PRINCIPLES OF CORPORATE FINANCE* (13th ed., 2020). *See also* Bradford Cornell, *The Incentive to Sue: An Option-Pricing Approach*, 19 J. LEGAL STUD. 173 (1990) (using a variant of option theory to value litigation). Cornell's insight is that the option to abandon a lawsuit partway through (if discovery reveals that the claim is worth less than the plaintiff initially believed) constitutes an “embedded option” that increases the value of filing suit in the first place. *Id.* at 177. *See also* IAN AYRES, *OPTIONAL LAW: THE STRUCTURE OF LEGAL ENTITLEMENTS* (2005) (exploring the relevance of options to legal analysis and legal theory more generally).

<sup>35</sup> RESTATEMENT (SECOND) OF CONTRACTS § 25 (AM. L. INST. 1981) (defining an option contract as “[a] promise . . . [that] limits the promisor's power to revoke an offer.” The owner of a “right to buy” is just the recipient of an (irrevocable) offer to sell at a given price.). At common law, what makes the offer *irrevocable* is that it is backed by consideration—the offeree has paid separately for the right to keep the offer open. *Cf. Dickinson v. Dodds* [1874] 2 Ch D 463 at 471–72 (explaining that a gratuitous promise to hold an offer open until a given time was not binding on the offeror because it had not been separately paid for and hence lacked consideration). *See also* U.C.C. § 2-205 (AM. L. INST & UNIF. L. COMM'N 1977) (allowing merchants to make binding commitments to keep offers open (“firm offers”) *without* consideration under certain circumstances).

<sup>36</sup> If it is helpful, you can think of owning a call option as entitling you to “call the asset over to you” (buy it). If you do decide you want to buy it, the owner must sell, because they made you an (irrevocable) offer to do so.

July 30, 2024.<sup>37</sup> The \$120 is known as the option's *exercise price*, which simply means that the underlying asset can be purchased (the option can be exercised) for that amount. The value of the option depends on the price of the underlying asset: if XYZ is currently trading at \$200 per share, the call option is very valuable. The holder of the call can use her right to buy the option for \$120 from the party who "wrote" or sold the option, and then turn around and sell it for its market price, pocketing the \$80 difference.<sup>38</sup> If a share of XYZ is currently trading at \$10, by contrast, the value of the call option is small—it will be worthless unless the share price rises above the exercise price. (Who would want to exercise their right to buy for \$120 when they could easily buy for \$10 on the open market?) The chances of that happening are presumably quite low.<sup>39</sup>

Conversely, consider the owner of a *put* option.<sup>40</sup> This gives the owner the right (but, again, not the obligation) to force someone else to buy the asset from them at the exercise price, which occurs when a counterparty has made an irrevocable offer to buy it at the exercise price. Someone who owns a put option on a share of XYZ stock with an exercise price of \$120 (and an expiration date of July 30, 2024) could insist that their counterparty buy the share from them at that price. If XYZ is trading at \$150 on July 30th, the right to sell a share for \$120 is worth nothing, since the owner of the put option could always sell at the higher market price instead. But if a share is trading at, say, \$100, then the owner of the put option can buy a share at the market price and then turn around and sell (that is, force their counterparty to buy) at the exercise price, pocketing the \$20 difference. When the asset is worth less than the exercise price, a put option is a valuable thing to own.

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<sup>37</sup> This is a so-called American option. A European option is exercisable only on the exercise date. But a famous observation in finance is that it's never (with provisos) worthwhile to exercise a call before its date; if you have reason to exercise it because the underlying asset's price is above the exercise price, you'll always do better selling the option instead.

<sup>38</sup> In practice, the option-holder would likely just settle-up for the \$80 difference, reducing transaction costs.

<sup>39</sup> While the profit from holding an option is easily computed, the appropriate *price* to charge for an option is anything but. Fischer Black and Myron Scholes revolutionized finance (and Scholes won a Nobel prize) for deriving the correct formula for pricing an option. See Fischer Black and Myron Scholes, *The Pricing of Options and Corporate Liabilities*, 81 J. POL. ECON. 637, 640 (1973). BREALEY ET AL., *supra* note 34, at 573–79 (discussing the Black-Scholes formula in greater detail).

<sup>40</sup> If it is helpful, you can think of "shot *putting* the asset away from you" to someone else—forcing them to buy it at a given price. AYRES, *supra* note 34, at 205.



## B. POSITION DIAGRAMS

The careful reader will have discerned that the two kinds of options (call and put) and two kinds of positions one can take—write (commit to buy/sell) or own (purchase the right to buy/sell)—generate four basic financial stakes that can be created by these options.<sup>41</sup> Each kind of financial stake gives rise to a different relationship between the value of the underlying asset and the value of the option itself—the profit or loss that is realized from holding a given position. These so-called position diagrams are commonly used to depict the value of the underlying asset on the horizontal axis and the profit or loss of the option (holder or writer) on the vertical axis.

First consider the owner of a call option. To fix ideas, assume that the option is the right to buy a share of XYZ stock for \$120, and that today is the option's expiration date. We want to graph the option holder's profit from owning the option as a function of the price of a share of XYZ stock. To simplify the graph a little, we will assume that the owner paid nothing for that option.<sup>42</sup>

If a share of XYZ has a market price of \$0 the moment it expires, the option to buy it for \$120 is itself worthless: why would anyone pay \$120 for something they could buy for \$0 on the open market? Of course, the same logic applies to *any* price below the \$120 exercise price—the owner of the option would not choose to exercise it, so the profit from holding it would be . . . nothing at all. As the price of an XYZ share goes above the \$120 exercise price, however, the call option-holder *would* want to exercise her option to buy. If the price were, say, \$131, the holder could exercise her option, buy the share for \$120, and then turn around and sell it for \$131, turning an \$11 profit. At an even higher price—say, \$200—the option holder's profit would be \$80 (\$200 - \$120). Thus, the call option-holder's profit is zero for any price of the underlying asset less than the \$120 exercise price; and that profit rises by \$1 for every dollar that the price of the

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<sup>41</sup> In practice, options are often combined in various ways, including owning the underlying asset on which the option is written, so there are many more possibilities than we explore here. *See supra* note 34 (outlining additional details on options).

<sup>42</sup> Of course, this is not only unrealistic, it likely runs into contract law problems discussed *supra* note 35 (promising to keep an offer open might not constitute a valid contract if it is not paid-for.). But the assumption makes the analysis a bit cleaner, so we'll stick with it. We will also assume throughout that the owner or writer of the option does not actually own the underlying asset involved. In a thick market, the commitment to sell can always be kept by purchasing the share on the market and then selling it.

underlying asset exceeds the exercise price.<sup>43</sup> Figure A1.A illustrates.

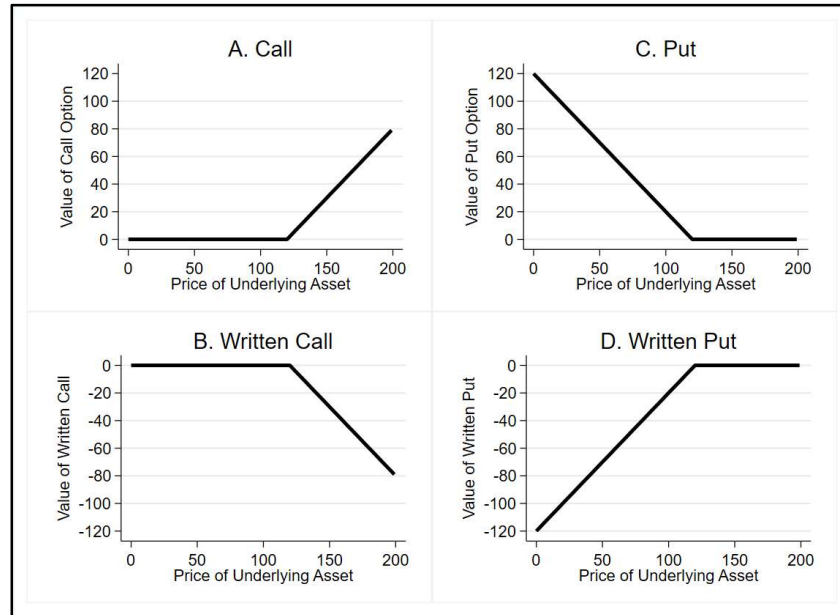


Figure A1: Value of Option Position as a Function of the Price of the Underlying Asset for Different Options (Exercise Price = \$120)

What about the other side of this transaction? Suppose that instead of holding the option to buy a share of XYZ at \$120, you had instead *written* that option, obliging you to sell at \$120. In that case, a price of \$0 for XYZ means that the option will surely not be exercised, and you will be out nothing. The same applies at any asset price below the exercise price. Once the price of a share exceeds \$120, however, the option-holder will want to exercise it. You will then need to purchase a share of XYZ for its market price and then immediately sell that share to the option-holder for \$120; you will of course be out the difference.<sup>44</sup> A graph of your profit looks like Figure A1.B. It is the mirror image of Figure A1.A, which makes sense because holding a call option has the opposite financial consequences of writing

<sup>43</sup> The formula for the option-holder's profit is  $\text{Profit} = \text{Max}[(\text{Price} - \$120), 0]$ , where "Max" means, "whichever is bigger." When the price of the underlying asset is less than the \$120 exercise price,  $(\text{Price} - \$120)$  is less than zero, the option won't be exercised, and the holder's profit is 0. When the price of the underlying asset is above \$120,  $(\text{Price} - \$120)$  is greater than zero, and that's the profit from exercising the option.

<sup>44</sup> Algebraically, your profit will be:  $\text{Min}[0, (\$120 - \text{Price of XYZ})]$ , where "Min" means "whichever is smaller."

one—whatever the holder gains, the writer loses, so the two positions must always net to zero.

We now consider the other flavor of option, a put, which gives the owner the right to sell an asset at the exercise price.<sup>45</sup> If you own a put option on XYZ stock with an exercise price of \$120, you can force someone else to buy it from you for that amount. If the market price of a share is \$0, your option to make me pay you \$120 for it is worth \$120—you can make me pay you \$120 for a worthless asset. As the market price of a share rises, the value of your put option declines, reaching \$0 when the market price of the share hits the exercise price. When the market price of a share of XYZ exceeds the \$120 exercise price, you will not want to exercise your option to make me buy it. That means the value of the put option is zero. The position diagram for the holder of a put option is shown in Figure A1.C.

Finally, consider the *writer* of a put option. The put writer's financial position is just the opposite of the holder of the put. When the price of the underlying asset is \$0, the owner of the put option will want to force the writer to buy the asset for its exercise price (\$120). That is a loss of \$120 for the writer and a corresponding gain of that amount for the put holder. When the price of the underlying asset is greater than \$120, the holder will decline to exercise the option, and the writer of the put loses nothing. This is illustrated in Figure A1.D.

### C. HOMOLOGY WITH INSURANCE LITIGATION

It should now be clear that the insurer's position diagram in Figure A1.A is the equivalent of a put option with an exercise price of \$120,000. (Since the put is on a liability—the award in the lawsuit—rather than an asset, the sign is negative, rather than positive.)<sup>46</sup>

Similarly, the insured policyholder in Figure A1.B has the equivalent of a written call option with an exercise price of \$120. He pays nothing if the award (or settlement) is below the policy limit, but bears the expense of any payment above the limit.

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<sup>45</sup> BREALEY ET AL., *supra* note 34.

<sup>46</sup> More generally, all insurance can be thought of as buying a put option. For example, if you have insured your house for \$100,000, you have the right, but not the duty, to force the insurer to “buy” it from you for the \$100,000 exercise price when certain conditions are met. If it burns down and the house is worth nothing, you gain the full \$100,000 by forcing the insurer to “buy” it. If it is worth \$25,000, you can still force the insurer to buy it for the exercise price. You would then get a check for \$100,000 but give up a house worth \$25,000, so you would net \$75,000. In practice, of course, you wouldn't actually sell the house to the insurer: instead, you'd simply collect the \$75,000 difference between the insured value and the actual value.

# POLICY STRATEGIES TO IMPROVE CYBERSECURITY

VINCENT YESUE\*

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## I. INTRODUCTION

Each day, the vulnerability of technology systems to attack and exploitation becomes a more serious threat to our way of life.<sup>1</sup> Every critical part of our daily lives is increasingly enmeshed in networked, computerized systems.<sup>2</sup> Not long ago, using an answering machine, hailing a cab, or going into a bank to withdraw cash would have been plausible scenarios. Today, every step of those errands has been replaced by a form of digital technology and each element touches the public internet.<sup>3</sup> The risks posed by the disruption of the technological systems at the core of today's society are immense and growing.<sup>4</sup> This danger to the common good is being managed ineffectively by private industry,<sup>5</sup> and the government's attempts at risk management have also been unsuccessful.<sup>6</sup> This must change.

The explosive technological growth that has brought us to this point in history can be understood in the context of two concepts at the core of the venture capital-backed technology industry: first-mover advantage and technical debt.

The dynamics of new markets favor the first entrant, especially when the market depends on network effects. Metcalfe's Law suggests that the value of a network is proportional to the square of the number of nodes on the network.<sup>7</sup> The popular interpretation of this law in the marketplace is

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<sup>1</sup> THE HERITAGE FOUND., *The Growing Threat of Cyberattacks*, <https://www.heritage.org/cybersecurity/heritage-explains/the-growing-threat-cyberattacks> (last visited May 13, 2022).

<sup>2</sup> KATHLEEN STANSBERRY, JANNA ANDERSON & LEE RAINIE, EXPERTS OPTIMISTIC ABOUT THE NEXT 50 YEARS OF DIGITAL LIFE 55–58 (Pew Rsch. Ctr. 2019).

<sup>3</sup> COLLEEN MCCLAIN, EMILY A. VOGELS, ANDREW PERRIN, STELLA SECHOPOULOUS & LEE RAINIE, THE INTERNET AND THE PANDEMIC, (Pew Rsch. Ctr. 2021).

<sup>4</sup> *A Guide to Cyber Risk*, ALLIANZ GLOB. CORP. & SPECIALTY (Sept. 2015), <https://www.agcs.allianz.com/news-and-insights/reports/a-guide-to-cyber-risk.html>.

<sup>5</sup> Amitai Etzioni, *Private Sector Neglects Cyber Security*, NAT'L INTEREST, (Nov. 29, 2011), <https://nationalinterest.org/commentary/private-sector-neglects-cyber-security-6196>.

<sup>6</sup> Jody R. Westby, *The Government Shouldn't be Lecturing Private Sector on Cybersecurity*, FORBES, (June 15, 2015, 02:05pm), <https://www.forbes.com/sites/jodywestby/2015/06/15/the-government-shouldnt-be-lecturing-the-private-sector-on-cybersecurity/?sh=6e481ced621b>.

<sup>7</sup> Margaret Rouse, *Metcalfe's Law*, TECHOPEDIA (May 28, 2019), <https://www.techopedia.com/definition/29066/metcalfes-law>.

that a product that finds even a small audience may develop a virtually insurmountable advantage over the next entrant to the same market.<sup>8</sup>

The perceived advantage accrued by the first mover puts significant economic pressure on market entrants to forego thorough development of every feature of a new technology product and, instead, to enter the market with the least complete version of the technology that could possibly be acceptable to early adopters. This phenomenon is so pervasive that it has not only a name but also an acronym: the minimum viable product (MVP).<sup>9</sup> It is not difficult to imagine a scenario in which an entrant to a new technology market creates an MVP without sufficient thought to security architecture.<sup>10</sup> The product could enter the market with severe security vulnerabilities that remain latent<sup>11</sup> until discovered either by a well-meaning researcher or an attacker.<sup>12</sup> The manufacturer could choose to remediate these vulnerabilities in a subsequent release, but even then, sufficient incentive or opportunity may not exist.<sup>13</sup> The built-in technical shortcomings of a product, left behind for commercial reasons are known as technical debt.<sup>14</sup> Someday, technical debt will come due, either because the built-in shortcomings need to be fixed to continue to develop the

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<sup>8</sup> While some disagree on the effectiveness of first-mover advantage or the circumstances under which it is a real advantage, the general consensus is that the first to market has an advantage. *See e.g.*, Fernando F. Suarez & Gianvito Lanzolla, *The Half-Truth of First-Mover Advantage*, HARV. BUS. REV. (Apr. 2005), <https://hbr.org/2005/04/the-half-truth-of-first-mover-advantage>.

<sup>9</sup> *See generally* ERIC RIES, *THE LEAN STARTUP: HOW CONSTANT INNOVATION CREATES RADICALLY SUCCESSFUL BUSINESSES* (2011) (discussing the use of MVPs in the entrepreneurial and start-up space). *See also* Maksym Babych, *A Review of the Minimum Viable Product Approach*, FORBES, (Dec 8, 2021, 07:00 AM), <https://www.forbes.com/sites/theyec/2021/12/08/a-review-of-the-minimum-viable-product-approach/?sh=40c478702e20> (stating that MVP is a term coined by Frank Robinson and highlighting MVP as a popular test of business models in prospective start-up launches).

<sup>10</sup> Nicole Perrault, *Minimum Viable Product and Its Impact on Cybersecurity*, DOVER MICROSYSTEMS (Oct. 4, 2017), <https://info.dovermicrosystems.com/blog/mvp-cybersecurity-impact>.

<sup>11</sup> *Id.*

<sup>12</sup> *Vulnerability*, F-SECURE, <https://www.f-secure.com/v-descs/articles/vulnerability.shtml> (last visited May 13, 2022).

<sup>13</sup> Perrault, *supra* note 10.

<sup>14</sup> The term is commonly attributed to Ward Cunningham, developer of the first wiki software. *See e.g.*, Martin Fowler, *TechnicalDebt*, MARTINFOWLER.COM (May 21, 2019), <https://martinfowler.com/bliki/TechnicalDebt.html>. *See also* Dan Radigan, *Escaping the Black Hole of Technical Debt*, ATlassian, <https://www.atlassian.com/agile/software-development/technical-debt> (last visited May 13, 2022).

product or because the shortcomings have been used by attackers to gain an advantage over users of the product.<sup>15</sup> We return to this example in the discussion of tax policy near the end of this paper, after a discussion of the development of policy tools that have been deployed to improve the nation's cybersecurity posture.<sup>16</sup>

These efforts can be categorized according to several methodologies: cybersecurity insurance, tort law, federal regulation, and taxation policy. Historically, policy efforts have focused on cybersecurity insurance to the exclusion of the rest. This paper analyzes each in turn and concludes with a discussion of the most useful changes that could move the needle toward a more secure society.

## II. ORIGINS AND HISTORY OF CYBERSECURITY INSURANCE

Cybersecurity insurance originated as a mechanism for organizations to protect against technology-related losses excluded by commercial general liability insurance.<sup>17</sup> The efforts of the Bush 43 and Obama administrations adopted cybersecurity insurance as part of a policy to develop and incentivize cybersecurity best practices.<sup>18</sup> The federal government's objective of ameliorating the national security problem rooted in insecure computers and networks has not come to pass. Instead of revolutionizing cybersecurity practices, this insufficiently capitalized insurance line suffers from information asymmetry between insurers and insureds and creates a perverse incentive for online organizations to remain insecure. Unfortunately, this insecurity serves as a deep well of money from which international criminal gangs can fund and improve the capacity of their illegal operations.

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<sup>15</sup> Jeff Atwood, *Paying Down Your Technical Debt*, CODING HORROR, (Feb. 27, 2009), <https://blog.codinghorror.com/paying-down-your-technical-debt/> (stating that "accruing technical debt is unavoidable"). *But cf.* Michael Engstler, *The Vulnerability Debt in Product Security*, FORBES, (Sept. 30, 2021, 08:15 AM), <https://www.forbes.com/sites/forbestechcouncil/2021/09/30/the-vulnerability-debt-in-product-security/?sh=299d94232d62> (stating that "[c]yber risk and software vulnerabilities are often perceived as purely technical . . . [h]owever, that should not be the case").

<sup>16</sup> See *supra* Section 5.

<sup>17</sup> DANIEL HANKINS, ADVANCED GOV'T L., ch. 3, § VI (2020).

<sup>18</sup> See *Annual Number of Data Compromises and Individuals Impacted in the United States from 2005 to 2022*, STATISTA, <https://www.statista.com/statistics/273550/data-breaches-recorded-in-the-united-states-by-number-of-breaches-and-records-exposed/> (last visited Nov. 8, 2023); see also Juliana De Groot, *The History of Data Breaches*, DIGIT. GUARDIAN, (Aug. 22, 2022), <https://www.digitalguardian.com/blog/history-data-breaches>.

Throughout the development of the commercial insurance industry in America, cybersecurity risk was not a major consideration because computers were not yet in widespread use. As computers became more ubiquitous in American business, cyber losses that arose might have been covered under an all-risk property policy or excluded because they were not a named peril.<sup>19</sup> But, as the risks increased with the advent of the consumer internet and the sophistication of hackers, insurance companies realized that the risk needed to be separated from general commercial risks.<sup>20</sup> As such, insurers began to exclude cyber risk from the general policies.<sup>21</sup>

By 1997, an Atlanta, Georgia, agent named Steven Haase was working with clients who had significant risk exposure, including early internet banks and cybersecurity providers.<sup>22</sup> Mr. Haase saw the amount of exposure that lay beyond the protection of the existing insurance lines that his customers bought.<sup>23</sup> His clients and their risk profiles, coupled with the exclusion of cybersecurity risk from general policies led Mr. Haase to design a product with AIG to help manage risk.<sup>24</sup> This might have been the first cybersecurity insurance product.<sup>25</sup> At the outset, the policies that Haase called “cyber liability policies” covered the deletion of online data or data processing errors.<sup>26</sup> It was not until the early 2000s that cyberattacks and security breaches were covered.<sup>27</sup> However, insider threats and losses due to regulator fines were specifically excluded, and coverage was limited to damages relating to third parties.<sup>28</sup> But by the mid-2000s, modern first-party policies entered the market.<sup>29</sup> These newer policies covered business interruption due to cyberattacks, ransomware extortion, and damage to network assets.<sup>30</sup> California led states in creating statutory consumer

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<sup>19</sup> PHILIP L. BRUNER & PATRICK J. O’CONNOR, JR., BRUNER & O’CONNOR ON CONSTR. L., § 11:418, n. 11 (2023).

<sup>20</sup> HANKINS, *supra* note 17.

<sup>21</sup> *Id.*

<sup>22</sup> Andrea Wells, *What Agent Who Wrote First Cyber Policy Thinks About Cyber Insurance Now*, INS. J., (Mar. 1, 2018), <https://www.insurancejournal.com/news/national/2018/03/01/481886.htm>.

<sup>23</sup> *Id.*

<sup>24</sup> *Id.*

<sup>25</sup> *Id.*

<sup>26</sup> *The Evolution of Cyber Insurance*, PROWRITERS, <https://prowritersins.com/cyber-insurance-blog/cyber-insurance/> (last visited May 13, 2022).

<sup>27</sup> Wells, *supra* note 22; *The Evolution of Cyber Insurance*, *supra* note 26.

<sup>28</sup> *The Evolution of Cyber Insurance*, *supra* note 26.

<sup>29</sup> *Id.*

<sup>30</sup> *Id.*



protections for consumers who were caught up in cyberattacks with the California Security Breach and Information Act,<sup>31</sup> mandating breach notification and requiring insurers to offer coverage that protected insureds against the costs of notifying consumers and defending brand value in the court of public opinion after highly-publicized breaches.<sup>32</sup>

A. GOVERNMENT EFFORTS TO DEVELOP THE CYBERSECURITY  
INSURANCE INDUSTRY AS A POLICY TOOL

Since the early 2000s, the federal government has urged the development of the cybersecurity insurance industry as a necessary part of bolstering national security by leveraging insurance risk rating to improve the security of computer software and systems.<sup>33</sup> In 2002, the Bush administration met with industry leaders to help clear the regulatory path for more cybersecurity insurance policies.<sup>34</sup> Brian Krebs<sup>35</sup> described the Bush administration's efforts to expand cybersecurity insurance as a strategy similar to the development of fire insurance in the early 1900s, which drove increased scrutiny on fire prevention and led to increased safety.<sup>36</sup> The idea was that as the internet became more hostile and as losses to American companies began to mount, more companies would seek cybersecurity insurance.<sup>37</sup> Insurers would partner with industry experts and encourage insureds to adopt sound preventative cybersecurity practices and remediation strategies to achieve low-risk ratings and decrease premiums.<sup>38</sup> Insurance industry insiders predicted that cybersecurity insurance would become similar to other kinds of insurance, that companies would consider it a necessary cost of doing business, and that the market could “reach \$2.5 billion in premiums by 2005.”<sup>39</sup>

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<sup>31</sup> CAL. CIV. CODE § 1798.29(a) (agency); CAL CIV. CODE § 1798.82(a) (person or business).

<sup>32</sup> *The Evolution of Cyber Insurance*, *supra* note 26.

<sup>33</sup> Brian Krebs, *White House Pushing Cybersecurity Insurance*, WASH. POST (June 27, 2002, 1:35 PM), [<https://seclists.org/politech/2002/Jul/21>].

<sup>34</sup> CYBERSECURITY & INFRASTRUCTURE SEC. AGENCY, *THE NAT'L STRATEGY TO SECURE CYBERSPACE* (2003).

<sup>35</sup> At the time, Krebs was a Washington Post staff writer and later, the proprietor of KrebsOnSecurity, an “in-depth security news and investigation” blog. *See generally About the Author*, KREBSONSECURITY, [<https://krebsonsecurity.com/about/>] (last visited Nov. 8, 2023).

<sup>36</sup> Krebs, *supra* note 33.

<sup>37</sup> *Id.*

<sup>38</sup> *Id.*

<sup>39</sup> *Id.*

By 2010, the bipartisan Cybersecurity Act of 2010 was introduced to the Senate with a provision calling for the Obama administration to “encourage a market for cybersecurity insurance to protect businesses.”<sup>40</sup> The bill did not pass.<sup>41</sup> Nevertheless, the White House took up the Senate’s advice and in February 2013, promulgated Executive Order 13636, which addressed the growing “cyber threat to critical infrastructure” and directed executive branch agencies to respond to the threat.<sup>42</sup> Notably, the National Institute for Science and Technology was directed to develop the Cybersecurity Framework—“a set of standards, methodologies, procedures, and processes that align policy, business, and technological approaches to address cyber risks.”<sup>43</sup> The same Executive Order directed the Departments of Homeland Security, Commerce and the Treasury to “coordinate establishment of a set of incentives designed to promote participation in the Program [to support the Cybersecurity Framework’s adoption]” and to “[analyze] the benefits and relative effectiveness of such incentives, and whether the incentives would require legislation or can be provided under existing law and authorities to participants in the Program.”<sup>44</sup> When the Department of Commerce (through the National Telecommunications and Information Administration (NTIA)) responded to President Obama with a list of steps the U.S. Government could take “to build a successful incentives structure,” the first suggestion was to engage the insurance industry.<sup>45</sup> NTIA’s logic echoed that of the Bush 43 administration: the insurance industry was accustomed to evaluating preventative measures, they were used to pricing risk, and they were used to deploying underwriting practices that could encourage the adoption of the risk-reducing preventative measures.<sup>46</sup>

The Department of Homeland Security’s (DHS) response to the Executive Order was mixed. DHS assessed that insurance could serve as a

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<sup>40</sup> Erich Schwartzel, *Cybersecurity Insurance: Many Companies Continue to Ignore the Issue*, PITTSBURGH POST-GAZETTE, (June 22, 2010, 4:00 AM), <https://www.post-gazette.com/business/tech-news/2010/06/22/Cybersecurity-insurance-Many-companies-continue-to-ignore-the-issue/stories/201006220157>; S. 773, 111th Cong. (2010).

<sup>41</sup> S. 773.

<sup>42</sup> Exec. Order No. 13636, 78 Fed. Reg. 11739 § 1 (Feb. 12, 2013).

<sup>43</sup> *Id.* § 7.

<sup>44</sup> *Id.* § 8.

<sup>45</sup> NAT’L TELECOMM. & INFO. ADMIN., DEP’T OF COM., DISCUSSION OF RECOMMENDATIONS TO THE PRESIDENT ON INCENTIVES FOR CRITICAL INFRASTRUCTURE OWNERS AND OPERATORS TO JOIN A VOLUNTARY CYBERSECURITY PROGRAM, at 1 (2013).

<sup>46</sup> *Id.* See also CYBERSECURITY & INFRASTRUCTURE SEC. AGENCY, *supra* note 36.

“benefit that motivates a decision or action by critical infrastructure asset owners and operators to adopt the Cybersecurity Framework under development by NIST.”<sup>47</sup> DHS also suggested a federal reinsurance program to backstop the development of commercial cybersecurity insurance policies.<sup>48</sup> Additionally, DHS identified problems with the insurance-as-incentive approach: first, if insureds believed they were protected, they might engage in riskier behavior (an example of the concept of moral hazard); second, it would be difficult for insurance companies to compute damages associated with a cyber loss; and third, insurers would be hesitant to insure acts of terrorism or acts of war, both of which were kinds of threats that were on the federal government’s radar.<sup>49</sup> DHS was unable to conclude that cybersecurity insurance could effectively influence the behavior of U.S. organizations.<sup>50</sup>

The response to the Executive Order made by the Department of the Treasury was pointedly negative with respect to cybersecurity insurance. Echoing DHS, the Treasury identified the moral hazard problem but also noted the information asymmetry between insurers, who know relatively little about the cybersecurity hygiene of their insureds, compared to the in-depth knowledge that the insureds have about their own security practices.<sup>51</sup> On the other hand, it might be the case that the problem isn’t an information asymmetry so much as a lack of loss data from the insurer’s perspective.<sup>52</sup> The NTIA reported that Commerce’s Notice of Inquiry responses included a skeptical take from the American Insurance Association because the “continued advancements in the cyber insurance market will depend on access to sufficient loss data and a knowledgeable workforce that stays current with changing technologies and threats.”<sup>53</sup> The Treasury also noted that in 2012, while it was difficult to put an exact number on the size of the cybersecurity insurance market, “some private estimates put annual gross written premiums in the \$1 billion range,” out of a total of about \$247 billion in annual premiums across all commercial

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<sup>47</sup> DEP’T OF HOMELAND SEC. INTEGRATED TASK FORCE, EXECUTIVE ORDER 13636: IMPROVING CRITICAL INFRASTRUCTURE CYBERSECURITY 5 (2013), <https://www.cisa.gov/sites/default/files/publications/dhs-eo13636-analytic-report-cybersecurity-incentives-study.pdf>.

<sup>48</sup> *Id.* at 7.

<sup>49</sup> *Id.* at 29.

<sup>50</sup> *Id.* at 12–13.

<sup>51</sup> DEP’T OF THE TREASURY, TREASURY DEPARTMENT REPORT TO THE PRESIDENT ON CYBERSECURITY INCENTIVES PURSUANT TO EXECUTIVE ORDER 13636, at 23 (2013).

<sup>52</sup> Krebs, *supra* note 33.

<sup>53</sup> Letter from Angela Gleason, Assoc. Couns., Am. Ins. Ass’n, to cyberincentives@ntia.doc.gov (Apr. 29, 2013) (on file with author).

lines in the United States.<sup>54</sup> This represents a far cry from the 2002 prediction for the year 2005 of \$2.5 billion even eight years after 2005 came and went.

Nevertheless, the cybersecurity insurance train rolled on. In February 2014, the National Institute for Science and Technology announced the Cybersecurity Framework, which did not itself include explicit guidance as to the incentives to be used.<sup>55</sup> However, the message sent by the White House was clear, as relayed by a Senior Administration Official in a briefing on the launch of the Cybersecurity Framework:

“[W]e believe that the best drivers for adoption or use of the framework will ultimately be market based. Don't get me wrong, I think the government-based incentives are really important for us to pursue. But at the end of the day, it's the market that's got to drive the business case for the Cybersecurity Framework. The federal government is going to do its best to make the costs of using the framework lower, and the benefits of the framework higher, but it's the market that's going to ultimately make this work.”<sup>56</sup>

Later that same month, industry analysts reported an uptick in company purchases of data breach insurance, suggesting that the government's multi-pronged effort to drive the industry forward was beginning to bear fruit—or at least, was an idea whose time had come.<sup>57</sup>

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<sup>54</sup> NAT'L TELECOMM. & INFO. ADMIN., DEP'T OF COM., *supra* note 47 (citing Sasha Romanosky, *Comments to the Department of Commerce on Incentives to Adopt Improved Cybersecurity Practices*, INFO. L. INST., at 6 (Apr. 26, 2013) (stating NTIA gave a similar estimate, citing an estimate “that current, total annual cybersecurity insurance purchases range[s] from \$500 million to \$1 billion.”).

<sup>55</sup> See generally NAT'L INST. OF STANDARDS AND TECH., DEP'T OF COM., FRAMEWORK FOR IMPROVING CRITICAL INFRASTRUCTURE CYBERSECURITY (2014).

<sup>56</sup> Press Release, Off. of the Press Sec'y, Background Briefing on the Launch of the Cybersecurity Framework (Feb. 12, 2014), <https://obamawhitehouse.archives.gov/the-press-office/2014/02/12/background-briefing-launch-cybersecurity-framework>.

<sup>57</sup> Deirdre Fernandes, *More Firms Buying Insurance for Data Breaches*, THE BOS. GLOBE, (Feb. 17, 2014, 12:00 AM), <https://www.bostonglobe.com/business/2014/02/17/more-companies-buying-insurance-against-hackers-and-privacy-breaches/9qYrvlshskoPEs5b4ch3PP/story.html>. Note that this article presents a different timeline of the exclusion of cyber risks from commercial general liability products than the one presented in Krebs *supra* note 33.

Today, cybersecurity risks are sharply increasing, with the recent pandemic-driven trends toward online work and the increased visibility of attacks, causing both an uptick in demand for cybersecurity insurance and predictions of price hikes in the coming years.<sup>58</sup> A poll undertaken by one insurance company and published in their 2021 report found twenty-seven percent of firms had standalone cybersecurity insurance,<sup>59</sup> while another company recorded that 200 cybersecurity insurance providers in the U.S. collected \$2.74 billion in premiums in 2020.<sup>60</sup>

#### B. INFORMATION AND STRUCTURAL PROBLEMS

Some immediate problems with the cybersecurity insurance industry center on pricing as it relates to the insurance companies' access to information and market demand. An information asymmetry exists between consumers, who know how risky their systems are, and insurers, who don't, or at the very least, an information gap exists on the side of the insurer, who does not have sufficient loss data to calculate risk.<sup>61</sup> This makes it challenging for insurance companies to set prices that reflect the risk that they are taking on.<sup>62</sup> Insurers can have a difficult time estimating how long a breach might last, which causes additional pricing problems.<sup>63</sup> Because of the high-profile nature of cyberattacks, pricing can be dynamic. Prices have fallen when additional insurers have entered the marketplace,<sup>64</sup> but they

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<sup>58</sup> L.S. Howard, *Re/Insurance Cyber Rates Could Double Before 2023, as Attacks Skyrocket: S&P*, INS. J., (Sept. 30, 2021), <https://www.insurancejournal.com/news/international/2021/09/30/634535.htm>.

<sup>59</sup> HISCOX CYBER READINESS REPORT 2021, HISCOX 3 (2021) <https://www.hiscox.co.uk/sites/default/files/documents/2021-04/21486-Hiscox-Cyber-Readiness-Report-2021-UK.pdf>.

<sup>60</sup> U.S. CYBER MARKET UPDATE, AON (2021), <http://thoughtleadership.aon.com/Documents/20210609-2021-cyber-market-update.pdf> (follow hyperlink, then scroll down to June 09, 2021 U.S. Cyber Market Update, click on it, and submit information request to obtain report).

<sup>61</sup> DEP'T OF THE TREASURY, *supra* note 53, at 6–7.

<sup>62</sup> Jay P. Kesan & Carol M. Hayes, *Strengthening Cybersecurity with Cyberinsurance Markets and Better Risk Assessment*, 102 MINN. L. REV. 191, 222 n.210 (2017) (citing Adam F. Scales, *A Nation of Policyholders: Governmental and Market Failure in Flood Insurance*, 26 MISS. C.L. REV. 3, 8 (2006) stating “Without reasonably accurate data to generate loss predictions, insurance cannot be correctly priced.”)).

<sup>63</sup> Thomas D. Hunt, *“The Internet of Buildings”: Insurance of Cyber Risks for Commercial Real Estate*, 71 OKLA. L. REV. 397, 409 (2019).

<sup>64</sup> SAM CARTER & MICHAEL MAINELLI, CYBER-CATASTROPHE INSURANCE-LINKED SECURITIES ON SMART LEDGERS 39 (2018).

have risen after high-profile breaches.<sup>65</sup> Now, with insured losses sharply increasing and loss ratios following suit, profits are down at a time when demand is rising.<sup>66</sup> Cybersecurity insurance policies are also extremely complex, sometimes causing the insured to misunderstand what risks are being insured.<sup>67</sup> But even aside from these challenges, there are deep structural problems with the nature of cybersecurity as it exists today.

### C. VICIOUS CYCLE?

One structural problem might be that cybersecurity insurance itself is driving cyber risk. Organizations, cognizant of regulation, contractual requirements, and the fact that the internet comprises a huge share of their risk exposure, purchase insurance against this risk.<sup>68</sup> Whether or not the moral hazard problem identified by the Treasury and others as far back as the response to Executive Order 13636 in 2013—that insureds might purchase coverage and then ignore the risks—it may be the case that companies, which only have so much money to spend on cybersecurity, might be motivated to buy cybersecurity insurance and then skip the critical step of implementing security best practices, leaving themselves covered but vulnerable to attack.<sup>69</sup> This is the best-case scenario for a criminal ransomware gang.

Ransomware is a complex topic, but in simple terms, the scam works like this: (1) an attacker finds a vulnerable victim with a computer that can be manipulated; (2) the attacker manipulates the system in a way adverse to the victim's interest (e.g., encrypts files to inconvenience the victim, displays a pornographic image to embarrass the victim, or locks the computer to make it unusable to the victim); (3) the attacker provides the victim with a means to pay to end the attack; and (4) the attacker waits to

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<sup>65</sup> Arielle Waldman, *Cyber Insurance Premiums, Costs Skyrocket as Attacks Surge*, TECHTARGET (Oct. 11, 2021), <https://www.techtargget.com/searchsecurity/news/252507932/Cyber-insurance-premiums-costs-skyrocket-as-attacks-surge>.

<sup>66</sup> Howard, *supra* note 58.

<sup>67</sup> Booz Allen Hamilton, *How to Not Pay a Ransom*, AM. BAR ASS'N (2022), <https://www.americanbar.org/content/dam/aba/administrative/tips/programs/cyber-2022-materials/materials/cyberthursday-materials.pdf>.

<sup>68</sup> Toby L. Merrill, *Cyber Liability Market is Older, Wiser, Smarter and Still Growing*, INS. J., (Jan. 29, 2007), <https://www.insurancejournal.com/magazines/mag-features/2007/01/29/76734.htm>.

<sup>69</sup> Liam M.D. Bailey, *Mitigating Moral Hazard in Cyber-Risk Insurance*, 3 J.L. & CYBER WARFARE 1, 5 (2014).

see if the victim will pay.<sup>70</sup> In short, ransomware is extortion using a computer.<sup>71</sup> The attack relies upon a simple, untraceable, irreversible means by which the victim can pay the attacker, which historically meant prepaid electronic systems.<sup>72</sup> The explosion of cryptocurrency has driven a great deal of ransomware activity toward this payment method.<sup>73</sup> Either way, though, what the ransomware attacker needs is a victim with both a vulnerable computer and the means to pay a ransom to get the attack to end: this is exactly the case when an organization spends the bulk of its cybersecurity budget on cybersecurity insurance while subsequently failing to take cybersecurity precautions to reduce their risk of attack. This likely is why ransomware is becoming increasingly more common and why it has evolved from attacks against individuals (i.e., “we saw you looking at porn, pay \$200 or we will tell everyone”) to an attack against huge corporations (e.g., Garmin,<sup>74</sup> Colonial Pipeline<sup>75</sup>).

As a result, some insurers “have either reduced how much cyber they’ll write or have pulled out of the market entirely.”<sup>76</sup> Instead of what was envisioned when the White House began to throw its weight behind the concept of cybersecurity insurance as a solution to the national security problem posed by insecure computers, cybersecurity insurance has become the funding source for increasingly sophisticated cyberattacks.<sup>77</sup> This failure suggests that insurance might not be the best mechanism to drive behavioral change in the cybersecurity arena.

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<sup>70</sup> GAVIN O’GORMAN & GEOFF McDONALD, *RANSOMWARE: A GROWING MENACE 2* (2012).

<sup>71</sup> *Id.*

<sup>72</sup> *Id.* at 4.

<sup>73</sup> Greg Myre, *How Bitcoin Has Fueled Ransomware*, NPR (June 10, 2021, 5:06 AM), <https://www.npr.org/2021/06/10/1004874311/how-bitcoin-has-fueled-ransomware-attacks>.

<sup>74</sup> Catalin Cimpanu, *Hacker Gang Behind Garmin Attack Doesn’t Have a History of Stealing User Data*, ZDNET (July 28, 2020, 1:59 PM), <https://www.zdnet.com/article/hacker-gang-behind-garmin-attack-doesnt-have-a-history-of-stealing-user-data/>.

<sup>75</sup> William Turton & Kartikay Mehrotra, *Hackers Breached Colonial Pipeline Using Compromised Password*, BLOOMBERG (June 4, 2021, 3:58 PM) <https://www.bloomberg.com/news/articles/2021-06-04/hackers-breached-colonial-pipeline-using-compromised-password>.

<sup>76</sup> Tom Johansmeyer, *The Cyber Insurance Market Needs More Money*, HARV. BUS. REV. (Mar. 10, 2022), <https://hbr.org/2022/03/the-cyber-insurance-market-needs-more-money>.

<sup>77</sup> See generally Matt Smith, *How Insurers Play a Big Role in Spurring Cybercrime*, BARRON’S (Oct. 3, 2021, 7:50 PM), <https://www.barrons.com/articles/ransomware-attack-cyber-insurance-industry-51633075202>.

## D. NOT ENOUGH PREMIUMS TO COVER LOSSES?

There might not be enough money in the industry to cover the losses that will be suffered. The risks to insurance companies are increasing as attackers get better at attacking, victims get less averse to paying ransoms, and the world generally gets less predictable.<sup>78</sup> A UK cybersecurity insurance company estimated that in 2018, total cybersecurity-related losses were about \$1.2 billion, a number that increased fifty percent year-on-year to an estimated \$1.8 billion in 2019.<sup>79</sup> This drives growth in the number of policies written.<sup>80</sup> Demand and increased risk are two factors that squeeze the insurer, and the wild card is the fact that insurers do not have sufficient data about past attacks to truly understand the risk.<sup>81</sup>

As of January 2021, the math is simple: at the very high end of the cybersecurity insurance market, there are about 250 companies that have purchased insurance worth \$200 million or more.<sup>82</sup> The premiums that these companies pay are estimated to be about twenty percent of the \$5 billion global total premiums paid, approximately \$1.1 billion.<sup>83</sup> If there were five insured losses slightly in excess of \$200 million this year,<sup>84</sup> they would account for all of the premiums collected, and it would represent a compromise of just two percent of the insured “big fish.”<sup>85</sup> The numbers don’t look too different for companies that buy more or less than \$200 million worth of insurance, and the situation is the same: a shockingly small percentage of successful attacks resulting in complete payouts could drive insurance company profits into the ground.<sup>86</sup>

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<sup>78</sup> Tom Johansmeyer, *Cybersecurity Insurance has a Big Problem*, HARV. BUS. REV. (Jan. 11, 2021), <https://hbr.org/2021/01/cybersecurity-insurance-has-a-big-problem>.

<sup>79</sup> HISCOX CYBER READINESS REPORT 2020, HISCOX 2 (2020) [https://www.hiscox.co.uk/sites/uk/files/documents/2020-06/Hiscox\\_Cyber\\_Readiness\\_Report\\_2020\\_UK.PDF](https://www.hiscox.co.uk/sites/uk/files/documents/2020-06/Hiscox_Cyber_Readiness_Report_2020_UK.PDF).

<sup>80</sup> *Id.* at 16.

<sup>81</sup> *See generally id.*

<sup>82</sup> Jonahsmeyer, *supra* note 78.

<sup>83</sup> *Id.*

<sup>84</sup> *Id.*

<sup>85</sup> *Id.*

<sup>86</sup> *Id.* (“[T]hink about companies with at least \$500 million in protection . . . . [T]wo total losses could wipe out a year’s premium. Insurers might have to wait half a century to earn enough premium against those losses. Even for companies buying \$100-199 million in premium, the exposure is significant . . . . It would only take a handful of losses wipe out the \$1.44 billion in premium they generate.”).



#### E. THE WORST THREATS AREN'T COVERED?

Policy exclusions denying coverage to losses resulting from acts of war are not novel.<sup>87</sup> Recently, though, the concept of “hybrid war” has introduced a sense of uncertainty as to the boundaries of traditional “kinetic” warfare and competitive, inter-state activity in cyberspace.<sup>88</sup> From one perspective, competitive activities like those Russia undertook in its 2008 incursion into Georgia<sup>89</sup> “may not clearly cross the threshold of war . . . [perhaps] due to the ambiguity of international law, ambiguity of actions and attribution, or because the impact of the activities does not justify a response.”<sup>90</sup> But in November 2021, Lloyd’s Market Association released a set of four newly drafted War, Cyber War and Cyber Operation Exclusions possibly in recognition of the fact that traditional acts of war exclusions were not specific enough in light of the uncertainty around how and when cyberattacks might rise to the level of war.<sup>91</sup> Whether or not a certain cyberattack fulfills the criteria for an act of war under international humanitarian law, Lloyd’s seeks to clarify the character of cyber operations that are excluded from cybersecurity insurance policies (and which, presumably, would require war risk insurance for coverage to be present).<sup>92</sup> The four exclusions “are models for use in standalone cyber insurance policies” that present a range of options for insurers writing policies.<sup>93</sup> The first is extremely broad, bringing a form of “cyber operations,” defined as “the use of a computer system by or on behalf of a state to disrupt, deny, degrade, manipulate or destroy information in a computer system of or in

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<sup>87</sup> *Fifth Public Hearing of the National Commission on Terrorist Attacks Upon the United States* (2003) (statement of John Degan, Vice Chairman, Chubb Corporation) (explaining Chubb’s response in the days after 9/11, during which the applicability of the war exclusion to the 9/11 terrorist attacks on the United States was considered; Chubb ultimately decided to pay these claims).

<sup>88</sup> Andrew Dowse & Sascha-Dominik (Dov) Bachmann, *Explainer: What is ‘Hybrid Warfare’ and What is Meant by the ‘Grey Zone’?*, THE CONVERSATION (June 17, 2019, 4:35 AM), <https://theconversation.com/explainer-what-is-hybrid-warfare-and-what-is-meant-by-the-grey-zone-118841>.

<sup>89</sup> Sarah P. White, *Understanding Cyberwarfare: Lessons from the Russia-Georgia War*, MODERN WAR INST. AT W. POINT (Mar. 20, 2018), <https://mwi.usma.edu/understanding-cyberwarfare-lessons-russia-georgia-war/>.

<sup>90</sup> Dowse & Bachmann, *supra* note 88.

<sup>91</sup> Vincent J. Vitkovsky, *Briefing Note on the New LMA War, Cyber War and Cyber Operation Exclusions for Cyber Insurance Policies*, GFELLER LAURIE, LLP 1, 2–3 (2021), <https://www.gllawgroup.com/wp-content/uploads/2021/12/LMA-Cyber-War-and-Cy-Op-Exclns.pdf> (internal citation omitted).

<sup>92</sup> *Id.* at 2.

<sup>93</sup> *Id.* at 1.

another state,” within the definition of war.<sup>94</sup> This is probably consistent with the international law of armed conflict.<sup>95</sup> The other exclusions deny coverage where the loss is “directly or indirectly occasioned by, happening through or in consequence of war or a cyber operation carried out in the course of war.”<sup>96</sup> Again, while an actual war is required, it is not necessarily required that the cyber operation has a kinetic effect in order for its effects to be excluded—consistent with the law of international armed conflict.<sup>97</sup> Lloyd’s changes, taking place during Russia’s preparations to intensify the 2014 conflict against Ukraine, made even more sense after January 2022, when cyberattacks degraded not only Ukraine’s public and financial sectors, but also technology systems worldwide.<sup>98</sup>

If these exclusions become widespread in cybersecurity insurance policies, the risk to policyholders increases because the definition of acts of war becomes much broader.<sup>99</sup>

### III. A MISSING LEVER: TORTS

Perhaps the most challenging problem related to cybersecurity insurance is the fact that federal policy puts most of its eggs in the insurance basket, to the exclusion of other mechanisms of control traditionally used to nudge industries in the direction of improved safety. It is not particularly surprising, given the attendance of insurance industry representatives—but not class-action plaintiffs’ lawyers—during the Obama administration’s policy discussions, that the shortcoming of negligence law as it applies to insecure software was not addressed by the policy. That shortcoming is the extreme difficulty, if not impossibility, under current law, to subject the technology industry to UCC warranty law,

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<sup>94</sup> *Id.* at 2.

<sup>95</sup> Michael N. Schmitt, *The Law of Cyber Targeting*, 68 NAVAL WAR COLL. REV. 11, 16–17 (2015) (Schmitt, Director of the Tallinn Project, notes that it is likely that even cyber operations without physical effects could be considered “attacks” under the Geneva Conventions Additional Protocol I. While it is unlikely that data could be considered an object of an attack given that “object” is defined by tangibility in GC-AP I, “a majority of experts involved in the Tallinn Project” would interpret “loss of functionality” of a digital system within the scope of damage to that system, even if the system was still physically intact.).

<sup>96</sup> Vitkovsky, *supra* note 91, at 3 (internal citation omitted).

<sup>97</sup> Schmitt, *supra* note 95.

<sup>98</sup> *Key Market Forces Influencing the Risk*, LLOYD’S (July 2022), <https://www.lloyds.com/news-and-insights/futureset/futureset-insights/ukraine-a-conflict-that-changed-the-world/market-forces>.

<sup>99</sup> See U.S. DEP’T OF HOMELAND SEC., CYBERSECURITY INS. WORKSHOP READOUT REP. 13–14 (2012).

to liability law for negligence, or to product liability law for defective design or manufacture of software.

#### A. UCC WARRANTY

If a plaintiff suffering damages from cybersecurity risk wants to sue under a UCC breach-of-warranty suit, several conditions need to be met. At the outset, the software must be determined to be a “good” under the UCC.<sup>100</sup> Courts are generally likely to make such a determination, but if they do not, the UCC does not apply.<sup>101</sup> Once this hurdle is passed, three options allow for recovery: (1) a drafting error in the manufacturer’s limitation of liability clause; (2) manufacturer claims being disclaimed in a manner found to be unconscionable; or (3) manufacturer claims being disclaimed in a manner other than one found to be unconscionable, but either with privity or in a jurisdiction that does not require privity to exist in order to sustain such a suit.<sup>102</sup> Because no reasonable manufacturer of software would be likely to allow such a defective agreement to attach to their software, UCC warranty suits are extremely unlikely to help a consumer who suffers damages from insecure software.

#### B. NEGLIGENCE LAW

On the other hand, if a plaintiff wants to sue a software manufacturer on a theory of general liability, different conditions need to be satisfied. First, a duty of care needs to be established. Surprisingly, software providers are frequently found to lack a duty to design and develop secure software, and they are frequently found to lack the duty to instruct the user on what dangers are present and how to use the software safely.<sup>103</sup> There isn’t a uniform standard of care across states.<sup>104</sup> Second, whether or not there has been a breach of the software provider’s duty must be established, but in addition to the questionable status of the software manufacturer’s duty, no standard test exists to determine whether this is the case.<sup>105</sup> Third, proximate causation must be shown, but in almost any imaginable situation where damages result, intervening or superseding fault exists on the part of either the user or a criminal third party. Very rarely is

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<sup>100</sup> Michael D. Scott, *Tort Liability for Vendors of Insecure Software: Has the Time Finally Come?* 67 MD. L. REV. 425, 435, n.70 (2008).

<sup>101</sup> *Id.*

<sup>102</sup> *Id.* at 438–39.

<sup>103</sup> *Id.* at 442–44.

<sup>104</sup> *Id.* at 444.

<sup>105</sup> *Id.* at 447.

the software itself at direct fault.<sup>106</sup> While the fact that damages result from a breach is often obvious, the amount of those damages can be difficult to quantify.<sup>107</sup> More importantly, not all states allow economic damages in negligence claims, and none allow punitive damages absent gross negligence.<sup>108</sup> Accordingly, there are plenty of obstacles that make it difficult for a plaintiff to sue a software manufacturer on a theory of negligence after a cybersecurity incident.

### C. DESIGN OR MANUFACTURING DEFECTS

A plaintiff who wants to sue a software manufacturer on a theory of defective design or manufacture runs into a fork in the road. Defective design is another way of talking about negligence analysis, so in this case, the plaintiff must refer to the previous subsection for guidance.<sup>109</sup> Defective products are a different story, since they present strict liability. If software can be said to be defective by manufacture, not design, then there is, at first glance, a direct path to plaintiff recovery.<sup>110</sup>

Upon further inspection, though, there are two problems. First, although software is classified under the UCC as a “good,” under defective product manufacture law, the precedent is that software is not a product due to its intangibility.<sup>111</sup> If a court takes this point of view, it is a complete bar to a defective product manufacturing suit.<sup>112</sup> Second, from the software providers’ point of view, the principal argument would be made that the design process for software is never complete.<sup>113</sup> In the modern software development life cycle, software is continually being “designed,” whereby product managers, technology architects, and individual developers continually make implementation choices—even customers are involved in the continuous process of designing and redesigning software.<sup>114</sup> If we acknowledge the reality of the modern software industry that the design process never ends until the software is obsolete, then any liability is solely

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<sup>106</sup> *Id.* at 442, 448–49.

<sup>107</sup> *Id.* at 449–50.

<sup>108</sup> *Id.*

<sup>109</sup> *Id.* at 467–68.

<sup>110</sup> *Id.* at 461, n. 215.

<sup>111</sup> *Id.* at 462.

<sup>112</sup> *Id.* at 470.

<sup>113</sup> Personal experience and conversations with several experienced security practitioners and software design lifecycle experts. *See also* discussion *infra* Section 5.b (describing the design and development lifecycle of Boeing 737 and Microsoft Windows).

<sup>114</sup> *See* discussion *infra* Section 5.b.

in the realm of product defect and, therefore, subject to all the limitations of negligence described above.

D. WHY CHANGE TO THE LIABILITY LAW SITUATION IS UNLIKELY TO BE ON THE HORIZON

To hold software manufacturers responsible for damage that results from their insecure software, some have called for federal law to address the gap and provide a mechanism by which to use liability law.<sup>115</sup> The software industry fights the prospect of product liability, arguing that money spent on lawsuits is money not spent on improving the state of their software.<sup>116</sup> Even if the software industry accepted such legislation—perhaps as part of a bargain whereby they took responsibility for their shortcomings in exchange for tax breaks when they followed best practices—it seems unlikely that Congress could pass sweeping technology reform legislation when the political system appears dysfunctional and much of the reform movement oxygen is taken up by Section 230 and antitrust concerns.<sup>117</sup> Moreover, the changing landscape of Congress, marked by political polarization and shifting priorities, further diminishes the prospects of enacting sweeping technology reform. With the political agenda during the relevant years preoccupied by military conflict, financial turmoil, and the future of democracy, finding consensus on comprehensive legislation addressing software liability becomes even more challenging amidst the evolving dynamics of legislative priorities.

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<sup>115</sup> COMPUT. SCI. & TELECOMMS. BD., DIV. ON ENG'G & PHYSICAL SCIS. & NAT'L RSCH. COUNCIL, CYBERSECURITY TODAY AND TOMORROW: PAY NOW OR PAY LATER 14 (Nat'l Academy Press 2002).

<sup>116</sup> *S. 96, the Y2K Act: Hearing before the Comm. on Commerce, Sci., and Transp.*, 106th Cong. 67 (1999) (statement of Robert W. Holleyman II, President and CEO, Business Software Alliance).

<sup>117</sup> See generally Sarah A. Binder, *Going Nowhere: A Gridlocked Congress*, BROOKINGS (Dec. 1, 2000), <https://www.brookings.edu/articles/going-nowhere-a-gridlocked-congress/>; Daren Bakst & Dustin Carmack, *Section 230 Reform: Left and Right Want It, for Very Different Reasons*, THE HERITAGE FOUND. (Apr. 12, 2021), <https://www.heritage.org/technology/commentary/section-230-reform-left-and-right-want-it-very-different-reasons>; Diane Bartz, *Big Tech to Face Another Bipartisan U.S. Antitrust Bill*, REUTERS (Oct. 14, 2021, 6:37 PM), <https://www.reuters.com/world/us/big-tech-face-another-bipartisan-antitrust-bill-2021-10-14/>.

## IV. FEDERAL REGULATION

A second mechanism that could be used to control the national cybersecurity problem is the federal regulation of those who produce systems that might contain vulnerabilities. There are a variety of state statutes that regulate how companies treat customer data,<sup>118</sup> there are some state statutes that regulate characteristics of manufactured technology devices that influence the cybersecurity posture of their users,<sup>119</sup> and there are federal laws that regulate the behavior of certain industries.<sup>120</sup> Surprisingly, though, there is no federal regulation that specifies nationwide data security standards.<sup>121</sup>

The lack of federal regulation in this space may have roots in the legislature's desire not to hamstring an industry that, in the absence of heavy regulation, has become tremendously successful.<sup>122</sup> The light touch the United States government has applied to the Internet has resulted in a global internet where eight of the top ten most popular websites have American roots.<sup>123</sup> However, while applying this laissez-faire approach, the

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<sup>118</sup> See JEFF KOSSEFF, CYBERSECURITY LAW 48–55 (Wiley, 2d ed. 2019). Chapter 1 of Jeff Kosseff's seminal work on Cybersecurity Law surveys a selection of state data security. Appendix B of the same book surveys 50 states' breach reporting statutes. See *id.* at 483–554.

<sup>119</sup> See *id.* at 141, 160–61 (describing California's Internet-of Things law).

<sup>120</sup> See *id.* at 141–67 (detailing the Gramm-Leach-Bliley Act Safeguards Rule that applies to financial institutions, the New York Department of Financial Services cybersecurity regulations, the Red Flags Rule applicable to creditors and financial institutions, the Payment Card Industry Data Security Standard self-regulation adopted by credit and debit card processors, and the much-misspelled Health Insurance Portability and Accountability Act applicable to healthcare “covered entities”).

<sup>121</sup> *Id.* at 1.

<sup>122</sup> See 47 U.S.C. § 230 (“Actually, the federal government has removed certain regulations that apply to the rest of Americans from parts of the technology world. This approach was intended and in fact textually represents the intent to encourage the Internet to develop into “a global forum for a true diversity of political discourse.”). See also Matthew Feeney & Will Duffield, *Six Principles for Misunderstanding Free Speech and Section 230*, CATO AT LIBERTY (Feb. 17, 2021, 11:00 AM), <https://www.cato.org/blog/six-principles-misunderstanding-free-speech-section-230>.

<sup>123</sup> J. Clement, *Most Popular Websites Worldwide as of November 2021*, By Total Visits, STATISTA (Mar. 22, 2022), <https://www.statista.com/statistics/1201880/most-visited-websites-worldwide/>. Note that the URL posted in the citation is the original but has since been updated with information for 2022. The information could be located using the Wayback Machine via

technology industry's self-regulation can perhaps be measured by the prediction that cyberattacks could cost the world as much as \$10.5 trillion by 2025.<sup>124</sup>

Despite the dire situation, it will likely be difficult for Congress to agree on how best to regulate the technology industry. For example, even within the confines of speech regulation, to say that there is not consensus regarding how to proceed is a drastic understatement.<sup>125</sup> It is hard to imagine that adjustments to federal cybersecurity policy would find bipartisan support given how contentious other technology policy reform conversations are in the current environment.

## V. TAX EXPENDITURES AND DIRECT EXPENDITURES

To influence constituent behavior, the government can choose either to create a direct expenditure program under which payments are channeled directly to the parties in whom a behavioral change is sought or to create a tax expenditure that incentivizes behavior through the promise of lower taxes.<sup>126</sup> Tax expenditures represent departures from the ideal taxation policy, generally defined in terms of the Haig-Simons equation.<sup>127</sup> According to Stanley Surrey, such expenditures should not be considered without cost, and the methodology of direct expenditures is to be preferred.<sup>128</sup> However, according to Edward Zelinsky, there are distinct advantages that outweigh the inefficiencies inherent in the tax expenditure method of influencing taxpayer behavior.<sup>129</sup> One of those advantages is the political flexibility inherent in creating a tax expenditure as compared to

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<http://web.archive.org/web/20220322024513/https://www.statista.com/statistics/1201880/most-visited-websites-worldwide/>.

<sup>124</sup> Steve Morgan, *Cybercrime to Cost the World \$10.5 Trillion Annually By 2025*, CYBERCRIME MAG. (Nov. 13, 2020), <https://cybersecurityventures.com/hackerpocalypse-original-cybercrime-report-2016/>.

<sup>125</sup> See generally Jane Bambauer, James Rollins, & Vincent Yesue, *Platforms: The First Amendment Misfits*, 97 IND. L.J. 1047 (2022) (providing a fuller discussion of the dynamics of the debate surrounding speech regulation in the technology industry).

<sup>126</sup> See PHILIP D. OLIVER, TAX POLICY READINGS AND MATERIALS 745–802 (Thomas Reuters/Foundation Press, 3d ed. 2011).

<sup>127</sup> HENRY C. SIMONS, PERSONAL INCOME TAXATION 50 (The University of Chicago Press, 1965) (1938).

<sup>128</sup> OLIVER, *supra* note 126, at 747–54.

<sup>129</sup> See Edward A. Zelinsky, *James Madison and Public Choice at Gucci Gulch: A Procedural Defense of Tax Expenditures and Tax Institutions*, 102 YALE L.J. 1165, 1166 (1993).

the political cost associated with creating and funding a program to influence industry.<sup>130</sup>

The federal government makes considerable direct expenditures on cybersecurity-related projects.<sup>131</sup> Yet, these expenditures are siloed, coordinated only at the most general policy level, and apply largely to government contractors.<sup>132</sup> A different approach is needed to address systemic, nationwide problems in the private sector that affect the common interest.

Usually, a tax expenditure either boosts a new technology, giving it a toehold in the marketplace, or compensates the private sector to undertake an activity that has benefits to the commons but is not commercially practicable.<sup>133</sup> Here, the goal of the expenditure would be similar but not completely identical to the typical one: it would have to either compensate a technology manufacturer for foregoing the first mover advantage in favor of “building in” security before a product is launched, substituting a cash incentive for the toehold that a less-secure product could achieve via first-mover advantage; or it would incentivize the taxpayer to improve the public good by addressing the systemic security deficits caused by the entry of an insecure MVP into the market. The dynamics of the applicable tax expenditure could conceivably address one route or the other, but ideally, would incentivize both routes.

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<sup>130</sup> *Id.* at 1178.

<sup>131</sup> OFF. OF MGMT. & BUDGET, EXEC. OFF. OF THE PRESIDENT, ANALYTICAL PERSPECTIVES, BUDGET OF THE U.S. GOVERNMENT 167 (2022).

<sup>132</sup> *Id.* at 165–70.

<sup>133</sup> Mona Hymel, *The United States' Experience with Energy-Based Tax Incentives: The Evidence Supporting Tax Incentives for Renewable Energy*, 38 LOY. U. CHI. L.J. 43, 43 n.1 (2006) (citing BRUCE W. CONE ET AL., AN ANALYSIS OF FEDERAL INCENTIVES USED TO STIMULATE ENERGY PRODUCTION 7 (1978)).



## A. EXPENDITURE DESIGN

A tax expenditure designed to incentivize behavior risks failing – or worse, incentivizing the wrong behavior – if it is not carefully tailored to the desired behavior<sup>134</sup> For example, Corporate Average Fuel Economy (CAFE) fuel efficiency standards<sup>135</sup> were established with the goal of “reduc[ing] the greenhouse gas emissions and oil consumption associated with passenger transportation[.]”<sup>136</sup> But the version of CAFE standards in force from 2011 to 2016 did not simply mandate better fuel economy; instead, they mandate fuel economy as “a function of the footprint (wheelbase by track width) of the vehicles in a manufacturer’s fleet.”<sup>137</sup> As such, the design of the incentive drives manufacturers towards both better fuel economy and bigger vehicles, and they are left to choose which will maximize their profits.<sup>138</sup> To the extent that consumers are willing to pay for bigger vehicles, the CAFE standards are undermined by their design.<sup>139</sup> In the cybersecurity context, the optimum tax expenditure would be one focused on producers of technology products and would be one that directly incentivizes the activity that they perform to make those products more secure.

Classifying the type of influence sought by the expenditure as either increasing supply, increasing demand, or creating infrastructure often aids in selecting the form of an expenditure.<sup>140</sup> When an expenditure seeks to increase supply, an expenditure that provides an incentive to increase production, like an inventory credit, would be preferred.<sup>141</sup> An expenditure like a decrease in tax rates that puts more cash in the hands of certain consumers could drive increased demand, as could a credit or deduction associated with funds used to purchase the product in question.<sup>142</sup> If the goal is to spur the development of infrastructure, an expenditure consisting of accelerated depreciation for investment in that infrastructure would be

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<sup>134</sup> See generally Kate S. Whitefoot & Steven J. Skerlos, *Design Incentives to Increase Vehicle Size Created from the U.S. Footprint-Based Fuel Economy Standards*, ENERGY POL’Y (2011).

<sup>135</sup> Note that CAFE standards are not tax expenditures, and that this comparison is merely for the purposes of explanation.

<sup>136</sup> *Id.* at 1.

<sup>137</sup> *Id.*

<sup>138</sup> *Id.*

<sup>139</sup> *Id.* at 9.

<sup>140</sup> See generally Roberta F. Mann & Mona L. Hymel, *Moonshine to Motorfuel: Tax Incentives for Fuel Ethanol*, 19 DUKE ENV’T L. & POL’Y F. 43 (2008).

<sup>141</sup> *Id.* at 47.

<sup>142</sup> *Id.* at 49.

preferable.<sup>143</sup> The correctly designed expenditure would be the one that increases the supply of secure technology products by making the development process less expensive.

Today, no expenditure exists that would directly encourage manufacturers to forego the first-mover advantage and make an up-front investment in the design of a secure architecture that would avoid the considerable technical debt inherent in creating insecure technology and then fixing it later. For logistical, political, and regulatory simplicity reasons, a modification to an increasing expenditure might be preferable to the development of a new expenditure.

The closest existing expenditure<sup>144</sup> is the § 41 credit for increasing research activities, which provides taxpayers with a 20 percent credit for qualified research expenses above a threshold amount.<sup>145</sup> This is a credit based on “amounts which are paid or incurred by the taxpayer,”<sup>146</sup> so to the maximum extent possible, it avoids potential gaming of the system.<sup>147</sup> It is a credit for performing exactly the activity desired, which serves to increase the supply of the type of product facilitated by this desired activity. Finally, the credit is an existing expenditure, which, to the maximum extent possible, avoids potential partisan political challenges, enabling an adjustment that can be made at the direction of the Executive branch.<sup>148</sup>

The Economic Recovery Tax Act of 1981 initially implemented the § 41 research and development credit to reverse a trend between the late 1960s and late 1970s of declining research and development expenditure of

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<sup>143</sup> *Id.* at 50.

<sup>144</sup> I.R.C. § 174 (noting that Section 174 also allows taxpayers to amortize research and development expenses over a period of 60 months).

<sup>145</sup> I.R.C. § 41.

<sup>146</sup> *Id.*

<sup>147</sup> The taxpayer reaps an incentive benefit from the investment in research, but they do not reap a benefit equal to the entire amount of the investment, only a percentage. The taxpayer is responsible for the remaining costs of the investment through commercialization. Accordingly, the research and development [hereinafter “R&D”] credit is protected against abuse as compared to, for instance, a 100% research grant from the government that could be spent on any research, regardless of the possibility of successful commercialization. See Daniel J. Hemel & Lisa Larrimore Ouellette, *Beyond the Patents-Prizes Debate*, 92 TEX. L. REV. 303, 328 (2013).

<sup>148</sup> Certainly, the Executive branch cannot modify the statute, but the regulations could be modified, for example, to clarify that a new version of a software component is a new business component, not a modification of an old business component, and thus not subject to the § 41(d)(4)(A) restriction that “[a]ny research conducted after the beginning of commercial production of the business component” is not eligible for the credit. See § 41(d)(4)(A).

both the federally funded and privately funded modalities.<sup>149</sup> During this decade, such expenditures remained essentially flat in real dollars but declined as a share of gross domestic product (GDP).<sup>150</sup> By the time the 1981 Act was passed, U.S. “civilian” research expenditures represented 1.5% of GDP, while Japan’s share was 1.9% and West Germany’s was 2.3%.<sup>151</sup> The provision was originally scheduled to sunset after 1985, but Congress repeatedly renewed it until permanently renewing it in 2014.<sup>152</sup> Beginning in January of 2022, companies taking advantage of the credit must do so across five years, although both Republicans and Democrats favor removing that restriction.<sup>153</sup>

Although the § 41 research and development credit is the closest existing provision, a few obstacles make it impractical for use as it currently reads.

#### B. OBSTACLES

The current configuration of the § 41 research and development credit is such that it may not sufficiently incentivize cybersecurity investment where it would be most efficient (i.e., before commercial production) because of the significance of the first-mover advantage.<sup>154</sup> The current configuration also does not reach cybersecurity investment where it is most likely to occur (i.e., after commercial production) because of the narrow requirements for eligibility.<sup>155</sup>

Section 41(d)(4) specifies that “[a]ny research conducted after the beginning of commercial production of the business component” is ineligible for the research and development credit.<sup>156</sup> The same is true for

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<sup>149</sup> STAFF OF JOINT COMM. ON TAXATION, 97<sup>TH</sup> CONG., GEN. EXPLANATION OF THE ECON. RECOVERY TAX ACT OF 1981 119 (Joint Comm. 1981).

<sup>150</sup> *Id.*

<sup>151</sup> *Id.*

<sup>152</sup> David Malakoff, *U.S. House Passes Permanent R&D Tax Credit*, SCIENCE (May 9, 2014), <https://www.science.org/content/article/us-house-passes-permanent-rd-tax-credit>.

<sup>153</sup> Laura Weiss, *Major Corporations Make Last-Ditch Push for R&D Tax Break*, ROLL CALL (Mar. 2, 2022, 10:30 AM), <https://rollcall.com/2022/03/02/major-corporations-make-last-ditch-push-for-rd-tax-break/>.

<sup>154</sup> The comparison, which is difficult to quantify, is between the 20% of the excess of qualified research expenses over the base amount, or the 14% credit for the excess above 50%, of the average qualified research expenses over the last three years versus the entirety of the advantage conferred upon the first mover into a market. See I.R.C. § 41(a)(1); cf. I.R.C. § 41(c)(4)(A).

<sup>155</sup> I.R.C. § 41(d)(4)(A).

<sup>156</sup> § 41(d)(4).

surveys and studies related to quality control.<sup>157</sup> The upshot of this definition is that if research and development to design secure systems happens before commercial production of a business component, it qualifies. Still, if it happens after commercial production has begun, it does not.

To understand the inconsistency between the eligibility of certain investments in technology systems for research and development and what would be needed to incentivize technology manufacturers to invest more in security, one must understand the qualitative difference between the design and manufacturing process for a physical piece of technology like an airplane as compared to that of a piece of software. Boeing's 737 aircraft and Microsoft's Windows operating system can serve as widely adopted examples of technology that have evolved to include quality improvements over a long lifespan.

The 737 product family consists of twelve different commercial models, but all are certified by the FAA under a single type certificate.<sup>158</sup> The number of changes made within these twelve members of the 737 family after each was launched into commercial service can be roughly tracked by examining Airworthiness Directives issued against the type, which represent "legally enforceable regulations issued by the FAA in accordance with 14 CFR part 39 to correct an unsafe condition in a product."<sup>159</sup> The Federal Aviation Administration has issued 661 Airworthiness Directives against the 737 between the first in 1968 and the most recent in 2022.<sup>160</sup> Accordingly, the 737, first flown in 1967,<sup>161</sup> has

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<sup>157</sup> *Id.*

<sup>158</sup> DEPT' OF TRANSP., FAA, TYPE CERTIFICATE DATA SHEET A16WE (2023).

<sup>159</sup> *Airworthiness Directives*, FAA, [https://www.faa.gov/regulations\\_policies/airworthiness\\_directives/](https://www.faa.gov/regulations_policies/airworthiness_directives/) (last visited May 13, 2022).

<sup>160</sup> FEDERAL AVIATION ADMINISTRATION, DEP'T OF TRANSP., AIRWORTHINESS DIRECTIVES, [https://www.faa.gov/regulations\\_policies/airworthiness\\_directives](https://www.faa.gov/regulations_policies/airworthiness_directives) (last visited Nov. 24, 2023) (click on Airworthiness Directive (AD) Rules; then on the navigation stack on the left side of the page, click on Airworthiness Directives and choose the subtab entitled "AD Final Rules"; next, in the grey box, search using the following terms: In the field marked "Make," type "Boeing." From the three options that appear, select "The Boeing Company." Next to Make, there is a field for "Model." Here, type "737" and many different subtypes of 737 come up. Click the checkbox next to twelve out of the fifteen options: 737-100, 737-200, 737-200C, 737-300, 737-400, 737-500, 737-600, 737-700, 737-700C, 737-800, 737-900, and 737-900ER; from there, click "Apply" to apply the filters to the entire set of Airworthiness Directives).

<sup>161</sup> *Original 737 Comes Home to Celebrate 30th Anniversary*, BOEING, <https://boeing.mediaroom.com/1997-05-02-Original-737-Comes-Home-to-Celebrate-30th-Anniversary> (last visited November 24, 2023).

seen approximately one new version every five years and about eight and one half Airworthiness Directives per year during the fifty-six-year lifespan of the type.

Windows NT forms the basis for the Windows operating system used at the time of this writing. It has seen a great deal of incremental development since then but retains essentially the same architecture today as it did on the date of its initial commercial release in 1993.<sup>162</sup> Between 1993 and 2022, this line of operating systems saw approximately eleven major versions.<sup>163</sup> The number of changes made within these eleven versions of the Windows NT family after each was launched into commercial service can be roughly tracked by examining Microsoft's Security Updates Guide, which lists security patches issued against Microsoft products.<sup>164</sup> Between May 2021 and April 2022, Microsoft issued over 8,000 patches against the various subversions of Windows 10 in a single year.<sup>165</sup> One of the eleven major versions of Windows had almost twelve times more defects addressed in approximately twelve months than every version of 737 shipped during its nearly six-decade lifespan. Historically, Microsoft typically releases patches for its software on the second Tuesday of each month, but this practice may be changing with the launch of Windows Autopatch.<sup>166</sup> This change will continuously deploy hotfixes as they become available instead of waiting for a monthly deployment window.<sup>167</sup>

The takeaway is that the research and development model for a complex physical product and for a complex piece of software could not be more different. The example of a physical product requires certification by a government agency before commercial use, while the example of a software product requires certification for certain government use but not

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<sup>162</sup> *Windows Versions*, PCMAG, <https://www.pcmag.com/encyclopedia/term/windows-versions> (last visited May 13, 2022).

<sup>163</sup> These versions include: 3.5, 3.51, 4.0, 5.0, 5.1, 6.0, 6.1, 6.2, 6.3, 6.4, and 10. *See id*; *see also* Anoop C. Nair, *Windows 11 Version Numbers Build Numbers Major Minor Build Rev*, ANOOPCAIR.COM (Oct. 11, 2023), <https://www.anoopcnaair.com/windows-11-version-numbers-build-numbers-major/>.

<sup>164</sup> *Security Update Guide*, MICROSOFT, <https://msrc.microsoft.com/update-guide/> (last visited May 13, 2022).

<sup>165</sup> *Id.* (click “Product Family” and filter by “Windows.” Select all products in the list that begin with “Windows 10”).

<sup>166</sup> This is colloquially known as Patch Tuesday. *See* Charlie Osborne, *Microsoft's April 2022 Patch Tuesday Tackles Two Zero-Day Vulnerabilities*, ZDNET (Apr. 12, 2022), <https://www.zdnet.com/article/microsoft-april-2022-patch-tuesday-two-zero-day-vulnerabilities-tackled/>.

<sup>167</sup> *Id.*

general commercial use.<sup>168</sup> Improvements to the aircraft are a significant event, which might require the physical inspection of each plane suspected to contain a defect,<sup>169</sup> while improvements to the operating system happen almost continuously and can occur automatically.<sup>170</sup>

The difference in the amount of work done to maintain the quality of an aircraft versus the amount of work done to maintain the quality of an operating system after introduction to the commercial market is important from a taxation perspective. The research and development that happens after introduction to the commercial market is ineligible for the § 41 credit, while the research and development that happens before introduction is eligible. Without changes to § 41, a significant part of maintaining the quality of software over time is not incentivized by the credit.

Another obstacle is that the § 41 credit incentivizes *increases* in research and development expenditures, not steady-state expenditures.<sup>171</sup> In the initial formulation of the credit, twenty percent of the amounts above the historical base average were creditable.<sup>172</sup> Later, in an attempt to simplify the calculation for businesses, the Alternative Simplified Credit was added, wherein the creditable amount is fourteen percent above an amount equal to half of a company's average expenditures in the last three years. The result of both methods is that a rate of expenditure that is constant over a long period of time is not creditable.<sup>173</sup>

A third obstacle is rooted in complex accounting and record-keeping practices. Firms that seek the § 41 credit must keep a detailed accounting of research activities. It is not enough to provide the Internal Revenue Service with a list of salaries of employees involved in research or even to present a "reasonable allocation of salaries to the activities"; instead, the taxpayer must detail specific expenses associated with research

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<sup>168</sup> *Certification*, FAA, (July 20, 2022), [https://www.faa.gov/uas/advanced\\_operations/certification/](https://www.faa.gov/uas/advanced_operations/certification/); cf. *Federal Risk and Authorization Management Program (FedRAMP)*, MICROSOFT (Sept. 27, 2023), <https://docs.microsoft.com/en-us/compliance/regulatory/offering-fedramp>.

<sup>169</sup> *FAA Orders Inspection of Boeing 737 Plane Tails*, CLAIMS J. (Apr. 17, 2013), <https://www.claimsjournal.com/news/national/2013/04/17/227185.htm>.

<sup>170</sup> Liam Tung, *Microsoft: Windows Autopatch is Coming Soon. Here's What You Need to Know*, ZDNET (Apr. 7, 2022, 2:58 AM) <https://www.zdnet.com/article/microsoft-windows-autopatch-is-coming-soon-heres-what-you-need-to-know/>.

<sup>171</sup> *Tax Treatment Legislative History*, R&D COALITION, <https://investinamericasfuture.org/tax-treatment-legislative-history/> (last visited May 13, 2022).

<sup>172</sup> *Id.*

<sup>173</sup> *Id.*

and development activities.<sup>174</sup> Under the current statute, a new firm at the stage where the credit applies (i.e., prior to the release of a new piece of software) might not be mature enough to create and maintain such records.

## VI. CONCLUSION

Neither cybersecurity insurance, the development of tort law to allow strict liability for software, federal regulation, nor taxation policy reform alone will completely address America's problem with insecure technology. Modifications in all four of these areas should be deployed in a coordinated manner.

First, insurers and the government must work together to improve the effectiveness of cybersecurity insurance and mitigate its counterproductive effects. The effectiveness of cybersecurity insurance can be improved by bolstering the virtuous cycle originally envisioned by the federal government. The focus of insurance companies should be to use the leverage of lower premiums (or perhaps the very availability of insurance) to encourage insureds to change their risky behavior. The moral hazard problem presented by cybersecurity insurance and the information gap between insurer and insured will take work to conquer, but this work is critical to the security and stability of the nation. Mitigation of the counterproductive effects of cybersecurity insurance could be accomplished by a prohibition on insurance companies paying criminal extortionists, either by the insurers or, to solve the coordination problem, the government.<sup>175</sup> The widespread nature of this practice and the time that has passed without addressing this problem undoubtedly means there will be some short-term pain. Until this source of funding for international criminal gangs is strangled, however, the criminals will prosper, and the national security problems posed by insecure computers and networks will proliferate. One way to keep money out of the hands of criminals is to shift the burden of purchasing cybersecurity insurance away from the user, who is in a poor position to make the technology they use more secure, and toward the manufacturer, who is much better positioned to manage and spread the risk. Shifting this burden would be facilitated by the adoption of the next proposal.

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<sup>174</sup> *Eustace v. Comm'r*, 81 T.C.M. (CCH) 1370 (T.C. 2001), 2001 WL 273672, at \*6, *aff'd*, 312 F.3d 905 (7th Cir. 2002).

<sup>175</sup> This is perhaps less unlikely than it sounds; New York proposed such a ban in 2021. See Lindsey O'Donnell, *Cyber-Insurance Fuels Ransomware Payment Surge*, THREAT POST (June 1, 2021, 5:05 PM), <https://threatpost.com/cyber-insurance-ransomware-payments/166580/>.

Second, the law should allow for strict liability suits against software manufacturers who market insecure software. Today, such strict liability does not exist, and plaintiffs must fall back on general theories of liability. Cases like these are extraordinarily difficult to win, meaning it is difficult to apply direct leverage on those who are in the best position to ensure online safety. Making strict liability solutions available would go a long way in shifting the insurance burden from the consumer to the manufacturer.

Third, the government should create comprehensive federal legislation mandating secure products and secure practices. There are federal guidelines as to best practices; there are state-by-state data breach notification laws; there are federal laws against hacking; and there are federal agencies dedicated to understanding. On the whole, however, our legal system is totally lacking a systematic enforcement mechanism for making sure computers and networks are secure.

Fourth, the legislature should adjust the § 41 research and development credit. To defeat the perceived incentive to rush insecure MVPs to market, the amount of credit should be increased. To incentivize technology manufacturers to *sustain* research and development spending instead of *increasing* it, the credit must be reshaped to apply to all research and development spending on cybersecurity, not just a percentage of the base rate. To incentivize spending on post-commercial production cybersecurity efforts, the post-commercial production limitation for software should be removed.

These could be politically challenging measures to implement, especially when Congress seems ill-equipped to come to a bipartisan consensus around important issues related to the public good. Nevertheless, lawmakers must consider bold actions available in response to the crisis that could ensue if severe cyberattacks continue to threaten our modern, technologized way of life.



# **AUTOMOBILE INSURANCE PREMIUM PRICE DISCRIMINATION: SEX/GENDER**

MARGARET MUROLO\*

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## I. INTRODUCTION

Discrimination in automobile insurance premium pricing is not a new concept. In fact, “fair discrimination” is viewed by many as an actuarially sound practice that maintains market stability and provides for a useful insurance product. However, because sex/gender<sup>1</sup> is no longer considered on a binary framework and can be understood as fluid and existing along a spectrum, automobile insurance premium rate-making decisions based on an outdated gender binary system are no longer defensible. The basis for using sex/gender as risk classification differentials is even more suspect because it is not consistently applied across states or insurance companies. Because sex/gender is being used as an indirect substitute for other easily measurable factors of risk, previous justifications for its use are diminishing in their validity. Further, the use of sex/gender in premium pricing should be prohibited because it constitutes prejudicially unfair discrimination. This note explains why discriminating on the basis of sex and/or gender is not a meaningful way to determine automobile insurance premium costs, analyzes why the elimination of sex/gender premium pricing from automobile insurance has not yet been successful, and provides recommendations for why and how to remedy its current use.

## II. BACKGROUND

Automobiles are one of the most commonly acquired major purchases in the United States.<sup>2</sup> Most American states require some type of automobile insurance coverage for individuals who wish to drive.<sup>3</sup> When purchasing automobile insurance, an insurance company determines the premium that an individual will pay based on how the company evaluates the individual’s risk of submitting a claim, which is correlated to their

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<sup>1</sup> In this paper, the author will use sex/gender as shorthand for sex and/or gender.

<sup>2</sup> David B. Abramoff, *Rating the Rating Schemes: Application of Constitutional Equal Protection Principles to Automobile Insurance Practices*, 9 CAP. U. L. REV. 683, 684–85 (1980).

<sup>3</sup> Carrie Schroll, *Splitting the Bill: Creating a National Car Insurance Fund to Pay for Accidents in Autonomous Vehicles*, 109 NW. U. L. REV. 803, 813 (2015); Harvey Rosenfield, *Auto Insurance: Crisis and Reform*, 29 U. MEM. L. REV. 69, 70 (1998); Ronen Avraham, Kyle D. Logue & Daniel Schwarcz, *Towards a Universal Framework for Insurance Anti-Discrimination Laws*, 21.1 CONN. INS. L.J. 1, 26 (2014) (“Automobile drivers, of course, are legally required to carry a minimum amount of liability insurance in virtually every state.”).

likelihood of being involved in an accident.<sup>4</sup> When making premium calculations, automobile insurers will often consider factors such as location, age, gender, marital status, previous insurance coverage, the purpose for which the vehicle is being used, prior driving and accident experience, and vehicle specifications.<sup>5</sup>

In order to provide coverage to a large number of policyholders and to create policies that provide sufficient coverage at a cost that is affordable to purchasers and profitable to the insurance company, insurers use an underwriting tool known as risk classification.<sup>6</sup> Actuarial fairness is the idea that individuals are charged premiums that reflect their inherent risk of loss.<sup>7</sup> Although the insurance industry must also consider other factors in pricing such as an individual's presumption of their own risks, cross-subsidizations, and market competition strategies, this paper focuses on choosing the specific rating factors themselves.

Basing premium costs proportionally to an individual's probability of loss theoretically minimizes adverse selection risk.<sup>8</sup> Adverse selection is a theory in insurance that high-risk individuals will be the most likely to be interested in purchasing insurance.<sup>9</sup> However, when an insurance company can accurately assess the expected loss that a policyholder will cause the company, then the company can set premiums that prevent market collapse.<sup>10</sup> Adverse selection is often viewed as an information disparity

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<sup>4</sup> *Auto Insurance*, NAT'L ASS'N OF INS. COMM'RS., <https://content.naic.org/cipr-topics/auto-insurance> (Jan. 26, 2023); Mihaela David, *Auto Insurance Premium Calculation Using Generalized Linear Models*, 20 *PROCEDIA ECONS. & FIN.*, 147, 155 (2015).

<sup>5</sup> *Auto Insurance*, *supra* note 4; David A. Cather, *Reconsidering Insurance Discrimination and Adverse Selection in an Era of Data Analytics*, 45 *GENEVA ASS'N* 426, 430 (2020); Leah Wortham, *The Economics of Insurance Classification: The Sound of One Invisible Hand Clapping*, 47 *Ohio St. L.J.* 835, 849 (1986); Yu-Luen Ma, Xiaoyu Zhu, Xianbiao Hu & Yi-Chang Chiu, *The Use of Context-Sensitive Insurance Telematics Data in Auto Insurance Rate Making*, 113 *Transp. Rsch. Part A Pol'y & Prac.*, 243, 244 (2018).

<sup>6</sup> Anya E.R. Prince, *Insurance Risk Classification in an Era of Genomics: Is a Rational Discrimination Policy Rational?*, 96 *NEB. L. REV.* 624, 626 (2017); *INS. INFO. INST.*, *TRENDS AND INSIGHTS: RISK-BASED PRICING OF INSURANCE 1* (2022); Karen A. McCluskey, *Ending Sex Discrimination in Insurance: The Nondiscrimination in Insurance Act*, 11 *J. LEGIS.* 457, 459–60 (1984).

<sup>7</sup> Prince, *supra* note 6, at 628.

<sup>8</sup> *Id.* at 639; *INS. INFO. INST.*, *supra* note 6 at 1–2.

<sup>9</sup> Katrien Antonio & Emiliano A. Valdez, *Statistical Concepts of A Priori and A Posteriori Risk Classification in Insurance*, 96 *ASTA ADVANCES STAT. ANALYSIS* 187, 189 (2011); Alma Cohen & Peter Siegelman, *Testing for Adverse Selection in Insurance Markets*, 77 *J. RISK & INS.* 39, 39–40 (2010).

<sup>10</sup> Antonio & Valdez, *supra* note 9, at 189.

problem whereby the insured individual is aware of a risk factor and the insurance company is not.<sup>11</sup> To address this disparity, an insurance company will collect information from the potential policyholder to compare to its statistical data of the likelihood of risk of loss to determine appropriate policy premiums.<sup>12</sup>

In automobile insurance, the use of sex/gender is a non-driving-related variable that is often considered in policy pricing.<sup>13</sup> Traditionally, women have been viewed as having fewer and less severe automobile accidents, and that idea has frequently been used to justify charging women lower automobile insurance rates.<sup>14</sup> The use of sex/gender as a rating variable in insurance first began to garner pushback in the United States during the 1980s, as social anti-discrimination efforts gained support.<sup>15</sup> This note discusses why the use of sex/gender is likely an unsound basis for determining automobile insurance premium costs and why automobile insurance industry decision-makers should stop using sex/gender in premium-setting policies.

### III. SEX AND GENDER ARE NOW UNDERSTOOD DIFFERENTLY

Understanding the current realizations of sex/gender makes the use of antiquated binary sex/gender designations problematic in automobile insurance. In previous decades, the terms ‘sex’ and ‘gender’ had frequently been used interchangeably.<sup>16</sup> Current conceptions, however, hold that the two terms have distinct definitions.<sup>17</sup> The Gender Equality Law Center defines sex as “a combination of bodily characteristics including

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<sup>11</sup> Richard E. Just, Linda Calvin & John Quiggin, *Adverse Selection in Crop Insurance: Actuarial and Asymmetric Information Incentives*, 81 AM. J. AGRIC. ECON. 834, 836–37 (1999).

<sup>12</sup> Antonio & Valdez, *supra* note 9, at 189–90.

<sup>13</sup> Lorilee A. Medders, Jamie A. Parson & Matthew Thomas-Reid, *Gender X and Auto Insurance: Is Gender Rating Unfairly Discriminatory?*, 40 J. INS. REGUL. 1, 10 (2021) (“Gender is one variable that has long been used by insurers in most states to derive auto insurance rates.”).

<sup>14</sup> *Id.* at 10–11.

<sup>15</sup> Jill Gauding, Note, *Race, Sex, and Genetic Discrimination in Insurance: What's Fair?*, 80 CORNELL L. REV. 1646, 1661 (1995) (“The debate over the legitimacy of sex discrimination in insurance which took place in the 1980s was highly polarized, with one side advocating the efficient discrimination view and the other advocating the anti-discrimination view.”).

<sup>16</sup> Adam R. Chang & Stephanie M. Wildman, *Gender In/Sight: Examining Culture and Constructions of Gender*, 18 GEO. J. GENDER & L. 43, 45 (2017).

<sup>17</sup> *Id.* at 46, 55–56.

chromosomes, hormones, internal and external reproductive organs, secondary sex characteristics, and gender identity. Most people are assigned male or female at birth based on the appearance of their external genitalia.”<sup>18</sup> However, physical sex is also composed of a more varied chromosomal makeup given that there are more variations than just XX and XY; “biology is not a simple box of either one or the other (male or female).”<sup>19</sup> The term intersex can be used to describe a “variety of situations in which a person is born with reproductive or sexual anatomy that [do not] fit the boxes of ‘female’ or ‘male.’”<sup>20</sup> Estimates suggest that “about 1–2 in 100 people born in the U.S. are intersex.”<sup>21</sup> Though the reported numbers of individuals who are intersex are low, the low reporting numbers may be related to difficulty in compiling data—including sex/gender presentations that appear later in life, lack of knowledge, fear of bias and stigma, and infrequent and incongruent data compilations used to identify these individuals.<sup>22</sup> Despite the difficulty in knowing how many individuals may be intersex, it is important to consider how existing policies and cultural frameworks, including those within the automobile insurance industry, may be affecting this population. This is supported by the fact that other countries have implemented protections against forms of discrimination for individuals who are born with intersex variations,<sup>23</sup> and

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<sup>18</sup> *Getting Our Definitions Right*, GENDER EQUAL. L. CTR. (last visited Oct. 6, 2023), <https://www.genderequalitylaw.org/lgbtqdefinitions>; Chang & Wildman, *supra* note 16, at 57 (“[S]ex only relates to biology, sex assigned at birth, genitalia, chromosomes, and hormones.”).

<sup>19</sup> Chang & Wildman, *supra* note 16, at 58–59. *See also* Medders et al., *supra* note 13, at 4–5 (discussing the distinction between sex and gender and where individuals who are born with intersex variations fit into this analysis).

<sup>20</sup> *What's Intersex?*, PLANNED PARENTHOOD, <https://www.plannedparenthood.org/learn/gender-identity/sex-gender-identity/whats-intersex> (last visited Feb. 21, 2023). *See also* MYESHIA N. PRICE, AMY E. GREEN, JONAH P. DECHANTS & CARRIE K. DAVIS, THE TREVOR PROJECT, THE MENTAL HEALTH AND WELL-BEING OF LGBTQ YOUTH WHO ARE INTERSEX 3–6 (2021) (providing statistics on the rates of mental health and societal challenges facing individuals born with intersex variations and background information on what it means to be intersex).

<sup>21</sup> *What's Intersex?*, *supra* note 20.

<sup>22</sup> Tiffany Jones, *The Needs of Students with Intersex Variations*, SEX EDUC. 1, 2 (2016); *What's Intersex?*, *supra* note 20; PRICE ET AL., *supra* note 20, at 3–6.

<sup>23</sup> Jones, *supra* note 22, at 3; EUR. UNION AGENCY FOR FUNDAMENTAL RTS., PROTECTION AGAINST DISCRIMINATION ON GROUNDS OF SEXUAL ORIENTATION, GENDER IDENTITY AND SEX CHARACTERISTICS IN THE EU 71–72 (2015).

the United States itself has adopted anti-discrimination efforts in other areas of public access based on sex status and characteristics.<sup>24</sup>

Merriam-Webster Dictionary defines gender as “the behavioral, cultural, or psychological traits typically associated with one sex.”<sup>25</sup> “[G]ender also came to have application in two closely related compound terms: gender identity refers to a person's internal sense of being male, female, some combination of male and female, or neither male nor female; gender expression refers to the physical and behavioral manifestations of one's gender identity.”<sup>26</sup> Some terms related to gender identity include cisgender, transgender, drag, genderqueer, genderfluid, agender/gender neutral, sex assigned at birth, and pansexual, but even this list is not inclusive of the vast array of identities.<sup>27</sup> While gender identities beyond just male and female are not a new concept, current enhanced understanding and public engagement with the use of additional identification options within the United States is.<sup>28</sup> Because sex/gender is now being understood as fluid, unfixed, no longer binary, and existing along a spectrum, the justification of its use as a classification to base automobile insurance premium costs is drastically reduced.<sup>29</sup>

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<sup>24</sup> See generally EEOC Decision No. 0120120821, 2012 WL 1435995 (2012); Price Waterhouse v. Hopkins, 490 U.S. 228, 239 (1989); *Section 1557: Protecting Individuals Against Sex Discrimination*, U.S. Dep’t Health and Hum. Servs., (2020), <https://www.hhs.gov/civil-rights/for-individuals/section-1557/fs-sex-discrimination/index.html>; Glenn v. Brumby, 663 F.3d 1312, 1317 (11th Cir. 2011) (“Accordingly, discrimination against a transgender individual because of her gender-nonconformity is sex discrimination, whether it’s described as being on the basis of sex or gender.”).

<sup>25</sup> *Gender*, MERRIAM-WEBSTER ONLINE DICTIONARY <https://www.merriam-webster.com/dictionary/gender> (last visited Oct. 6, 2023).

<sup>26</sup> *Id.*; *Getting Our Definitions Right*, *supra* note 18; Chang & Wildman, *supra* note 16, at 54.

<sup>27</sup> Chang & Wildman, *supra* note 16, at 54–55.

<sup>28</sup> Nat Thorne, Andrew Kam-Tuck Yip, Walter Pierre Bouman, Ellen Marshall & Jon Arcelus, *The Terminology of Identities Between, Outside and Beyond the Gender Binary: A Systematic Review*, 20 INT. J. TRANSGENDERISM 138, 139 (2019).

<sup>29</sup> Raewyn Connell, *Gender, Health and Theory: Conceptualizing the Issue, In Local and World Perspective*, 74 SOC. SCI. & MED. 1675, 1677 (2012); Pawel Tacikowski, Jens Fust & H. Henrik Ehrsson, *Fluidity of Gender Identity Induced by Illusory Body-Sex Change* 1 SCI. REPS 1 (2020).

#### IV. SEX/GENDER TO JUSTIFY AUTOMOBILE INSURANCE PREMIUM PRICING IS ACTUARIALLY SUSPECT

##### A. INCONSISTENT USE OF SEX/GENDER AS A RATING

The wide discrepancy and difference in application to how ‘men’ and ‘women’ are priced for automobile insurance by state and by insurance company make the use of sex/gender as a qualifying factor suspect. It is commonly believed that women, when compared to men, pay lower automobile insurance premiums.<sup>30</sup> Studies have shown that, despite the persistent idea that women are a lower risk class for automobile accidents, in some instances, they still pay more than their male counterparts.<sup>31</sup> “[A]ccording to the National Organization for Women, ‘women drive less than men on average, but pay about twice as much per mile as men for identical coverage.’”<sup>32</sup> Even assuming *arguendo* that women are better

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<sup>30</sup> Medders et al., *supra* note 13, at 10–11; Press Release, Consumer Fed’n of Am., Most Large Auto Insurers Charge 40 and 60-Year-Old Women Higher Rates Than Men, Often More Than \$100 Per Year (Oct. 12, 2017), [https://consumerfed.org/press\\_release/large-auto-insurers-charge-40-60-year-old-women-higher-rates-men-often-100-per-year/#:~:text=In%2038%20instances%2C%20women%20with,solely%20because%20they%20were%20female](https://consumerfed.org/press_release/large-auto-insurers-charge-40-60-year-old-women-higher-rates-men-often-100-per-year/#:~:text=In%2038%20instances%2C%20women%20with,solely%20because%20they%20were%20female) (“Female motorists with perfect driving records often pay significantly more for auto insurance than male drivers with identical driving records and other characteristics the insurers use to price auto insurance, according to new research by the Consumer Federation of America (CFA) released today.”); Patrick Butler & Twiss Butler, *Driver Record: A Political Red Herring That Reveals the Basic Flaw in Automobile Insurance Pricing*, 8 J. INS. REGUL. 200, 226 (1989).

<sup>31</sup> Elaine Povich, *What? Women Pay More Than Men for Auto Insurance?* (Yup.), STATELINE (Feb. 11, 2019, 12:00 AM), <https://www.pewtrusts.org/en/research-and-analysis/blogs/stateline/2019/02/11/what-women-pay-more-than-men-for-auto-insurance> (“According to the 2017 Consumer Federation study, 40- and 60-year-old women with perfect driving records were charged more than men for basic coverage nearly twice as often as men were charged the higher rate.”); Nadine El-Bawab, *Women Pay More On Average Than Men for Car Insurance, Despite Getting into Fewer Accidents, Study Finds*, CNBC (Apr. 19, 2021, 4:39 PM), <https://www.cnbc.com/2021/04/19/women-pay-more-than-men-for-car-insurance-in-21-states-study-finds.html> (“Nationwide, women pay an average of 0.4% more than men for car insurance. And in 21 states and the District of Columbia, women are paying more despite getting into fewer accidents.”).

<sup>32</sup> Lisa A. Gardner & David C. Marlett, *The State of Personal Auto Insurance Rate Regulation*, J. INS. REGUL. 39, 49 (2008). *Cf.* Julia Matseikovich, *Does Car Insurance Cost More for Men or Women?*, AGILERATES (Aug. 7, 2023), <https://www.agilerates.com/car-insurance/does-car-insurance-cost-more-for->



drivers, “[o]n average, women pay \$10 more than men on their annual car insurance premiums.”<sup>33</sup>

Additionally, different states and different insurance companies charge men and women inconsistent prices, which reduces support for the actuarial soundness of basing insurance premium costs on sex/gender.<sup>34</sup> Further, there is much more diversity in accident rates within sex/gender classifications than has historically been acknowledged.<sup>35</sup> Similarly, in claims to support marketability, in some instances men are given subsidies to their ‘actuarially’ justified cost of premiums in order to promote purchase.<sup>36</sup> This data makes the use of gender as a factor less reasonable because the cost of premiums does not always reflect the supposition that females are safer drivers.

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women-or-men/ (“By 2018, men paid more than women in 21 states, and women paid more than men in 25 states.”).

<sup>33</sup> Taylor Covington, *Men Are More Confident Drivers, but Data Shows Women Are Safer*, THE ZEBRA (Dec. 20, 2022), <https://www.thezebra.com/resources/driving/gender-driving-confidence-survey/>.

<sup>34</sup> Press Release, Consumer Fed’n of Am., *supra* note 30 (“The inconsistent pricing decisions of these insurance companies illustrates CFA’s concern that tying auto insurance rates to factors that a customer cannot control and have nothing to do with their driving safety record – such as one’s biological sex – leads to unfair discrimination and indefensible claims of actuarial soundness.”); Povich, *supra* note 31.

<sup>35</sup> Butler & Butler, *supra* note 30, at 215 (“Even state driver records classified by sex, however, demonstrate that there is broad variation among individuals of the same sex in annual accident probability with considerable overlap in the annual probabilities of women and men drivers.”); Cather, *supra* note 5, at 431 (“[W]hile female and male drivers on average have significantly different probabilities of suffering losses, there is a wide range of risk levels within each gender category.”); Wanda A. Wieggers, *The Use of Age, Sex, and Marital Status as Rating Variables in Automobile Insurance*, 39 U. TORONTO L.J. 149, 160 (1989) (“Some statistical evidence suggests that high-risk groups as presently constituted, such as that of young single males, may be more heterogeneous with respect to risk than low-risk classes.”).

<sup>36</sup> Patrick Butler, Twiss Butler & Laurie L. Williams, *Sex-Divided Mileage, Accident, and Insurance Cost Data Show That Auto Insurers Overcharge Most Women*, 6 J. INS. REGUL. 243, 407 (1988).

In California's decision to prohibit the use of gender in determining automobile insurance premiums, the legislature explains:

Gender's relationship to risk of loss no longer appears to be substantial, and the logical justification for the statistical relationship to risk of loss has become suspect because:

- Company experience has come to vary widely, with some companies finding females to be a higher risk while other companies find similarly situated males to be a higher risk.
- Insurers routinely combine gender with other, more predictive factors like years driving experience.
- Gender's effect on rate appears to vary widely by location.<sup>37</sup>

Delaware legislators, in their decision to ban the use of gender in automobile insurance, cite similar reasons:

Rating factors should be meaningfully related to drivers' risk of loss and should not be disproportionately harmful to customers based on protected classes. Though used by many insurers, gender does not meet these critical tests. With several companies setting prices that suggest women are inherently riskier, another company rating as though men are riskier drivers, and two companies considering it unnecessary to consider the gender of the driver, it is clear that this factor does not meaningfully or accurately capture a driver's risk of loss. The inconsistency of gender's usage reveals that carriers' claims of correlation to risk are deeply flawed. . . .<sup>38</sup>

Differences are noted by companies as well. GEICO and Progressive have been cited as charging women more than men for automobile insurance, but Allstate, Liberty Mutual, and Farmers more often

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<sup>37</sup> CAL. DEP'T OF INS., INITIAL STATEMENT OF REASONS: GENDER NON-DISCRIMINATION IN AUTOMOBILE INSURANCE RATING 2 (Oct. 19, 2018) (discussing the amendment of CAL. CODE REGS. tit. 10 §§ 2632.5, 2632.11 to eliminate the use of gender in private passenger automobile insurance rating in California).

<sup>38</sup> *Delaware Regulator Urges Ban on Gender-Based Auto Insurance Rating*, INS. J. (Mar. 3, 2022), <https://www.insurancejournal.com/news/east/2022/03/03/656589.htm>.

charged men higher rates.<sup>39</sup> If there was an actuarially valid justification for pricing women and men differently based on their risk of loss, there should not be dissimilar application when correcting for other variables.<sup>40</sup> “The inconsistent pricing decisions of these insurance companies illustrates the Consumer Federation of America’s concern that tying auto insurance rates to factors that a customer cannot control and that have nothing to do with their driving safety record—such as one’s biological sex—leads to unfair discrimination and indefensible claims of actuarial soundness.”<sup>41</sup>

#### B. INCONGRUENT CLASSIFICATION

The utility of sex/gender in insurance premium cost determinations loses validity because there is great heterogeneity within the classification groups themselves. For a factor to be useful to base automobile insurance premium prices on, there must be uniformity in the class.<sup>42</sup> It is suggested that a risk class should be homogenous and not ambiguous.<sup>43</sup> Although there is no absolutely perfect classification grouping according to these principles, there exist more accurate and easily attainable classifications under these standards than sex/gender.<sup>44</sup> As will be discussed in Section

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<sup>39</sup> Press Release, Consumer Fed’n of Am., *supra* note 30 (“Female motorists with perfect driving records often pay significantly more for auto insurance than male drivers with identical driving records and other characteristics the insurers use to price auto insurance, according to new research by the Consumer Federation of America (CFA) released today. This finding contrasts with the public perception that men pay more than or the same as women for auto insurance.”).

<sup>40</sup> *Id.* (“‘If sex were an actual risk factor, we wouldn’t see companies using it in such divergent ways. . . . If these large insurance companies are abiding by actuarial principles, you would not find one insurer granting a 21% price break for female drivers while another company sees a need for a 32% surcharge on those same drivers,’ said Hunter. ‘Also, how can a company think that the women of Tampa are very high risks, but women of Cleveland are very low risks relative to men? A woman moving from Tampa to Cleveland does not magically become a better driver. What this really tells us is that either some companies are ignoring the data or that gender is not a good indicator of risk and should not be used.’”).

<sup>41</sup> *Id.*

<sup>42</sup> Michael A. Walters, *Risk Classification Standards*, 68 PROC. CAS. ACTUARIAL SOC’Y, 1, 7–8 (1981).

<sup>43</sup> *Id.*; FREDERICK SCHAUER, PROFILES, PROBABILITIES, AND STEREOTYPES at 5–6 (2003) (“But the insurance company is stunningly uninterested in providing me the opportunity to demonstrate that the generalizations about Massachusetts drivers and sports car owners do not apply to me.”).

<sup>44</sup> SCHAUER, *supra* note 43, at 30, 36.

IV.d., *infra*, when a groupage is of a suspect classification, justification for its use should be even stronger than for non-suspect classifications.<sup>45</sup>

Many automobile insurance applications will request information about an individual's sex or gender, but these terms are often unspecified and conflated.<sup>46</sup> Some insurance companies request information about an individual's sex at birth, others require gender to match that of the state driver's license, and still others allow individuals to self-classify.<sup>47</sup> With respect to nonbinary sex and gender classifications, there is a great disparity between the phraseology used, and even as to how individuals are legally permitted to identify.<sup>48</sup> Recently, some insurance companies have allowed for a third gender option such as "unknown," "unspecified," "X," "nonbinary," or "other," but this is not done consistently across companies.<sup>49</sup> In light of the fluidity, variability, and nonbinary

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<sup>45</sup> *Id.* at 215 ("[A] principle of antidiscrimination, itself operating as a generalization, mandates the exclusion of even relevant characteristics, treating different cases similarly precisely because of the generalization on which the antidiscrimination principle is based."); Marcy Strauss, *Reevaluating Suspect Classifications*, 35 SEATTLE UNIV. L. REV. 135, 137 (2011) ("Here, the government must demonstrate a compelling purpose for the distinction drawn and prove that such a classification is necessary to achieve that purpose."); Ronen Avraham, Kyle D. Logue & Daniel Schwarcz, *Understanding Insurance Antidiscrimination Law*, 87 S. CAL. L. REV. 195, 216 (2014) ("Although these Constitutional principles obviously do not apply to insurers who are not public actors, and thus not subject to the Equal Protection Clause—they describe broad principles that could be applied to insurers via state antidiscrimination law.").

<sup>46</sup> Kayda Norman, *Car Insurance for Transgender or Nonbinary Drivers*, NERDWALLET (May 13, 2022), <https://www.nerdwallet.com/article/insurance/car-insurance-transgender-nonbinary>; Cate Deventer, *Car Insurance for Transgender Applicants*, BANKRATE (Mar. 9, 2022), <https://www.bankrate.com/insurance/car/auto-insurance-for-trans-applicants/>. See also Appendix A.

<sup>47</sup> Norman, *supra* note 46; Deventer, *supra* note 46. See *infra* Section IX (organizing automobile insurance sex/gender term usage into an Appendix).

<sup>48</sup> NAT'L CTR. FOR TRANSGENDER EQUAL. THE REPORT OF THE 2015 U.S. TRANSGENDER SURVEY 81 (2016); Claire E. Lunde, Rebecca Spigel, Catherine M. Gordon & Christine B. Sieberg, *Beyond the Binary: Sexual and Reproductive Health Considerations for Transgender and Gender Expansive Adolescents*, 3 FRONTIERS IN REPROD. HEALTH 1, 3 (2021).

<sup>49</sup> Ray Prince, *What You Need to Know About Transgender Car Insurance*, COMPARE.COM (Nov. 11, 2022), <https://www.compare.com/auto-insurance/resources/transgender-car-insurance>; Michael Evans, *Do You Have to Identify as Male or Female When Getting Car Insurance?*, THE BALANCE (May 16, 2022), <https://www.thebalancemoney.com/do-you-have-to-identify-as-male-or-female-when-getting-car-insurance->

understanding of sex and gender, these classifications are neither homogenous nor unambiguous.

Some states have worked to compel insurance companies to recognize gender options beyond just male and female.<sup>50</sup> Other states have simply eliminated sex and gender as factors for determining automobile insurance premium costs,<sup>51</sup> yet many states still have not addressed this issue and continue to use the traditional system of binary male and female designations.<sup>52</sup> The continued use of a system that does not grasp all of its applicants by claiming actuarial soundness, when in fact, applied statistics and classifications do not actually represent the individuals enrolled in the automobile insurance plan, is of little utility.

Further, the way that insurance companies determine premium costs for individuals whose sex or gender identity falls outside of traditional male and female classifications is not uniform.<sup>53</sup> Some insurance companies assign anyone who falls outside of a male/female gender classification the cheaper insurance cost, while others average the price of male and female insurance and use that as the cost for gender-diverse individuals.<sup>54</sup> This would cause someone who is neither male nor female to pay discordantly depending on which company they choose.<sup>55</sup> This arbitrary payment structure for individuals who are not male or female does not reflect their likelihood of risk and, therefore, is not justifiable within the

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5078356#:~:text=Changing%20your%20gender%20marker%20may,decrease%2C%20according%20to%20the%20NCTE; Deventer, *supra* note 46.

<sup>50</sup> DFR, 2018-3 Or. Bull. 2 (Apr. 16, 2018) (A bulletin issued in 2018 in Oregon directs that auto insurers who require gender disclosures must include a “not-specified” gender option. Rating systems in Oregon that do not allow for that gender option will be found to be unfairly discriminatory on the basis of sex and will be disapproved in form review processes.).

<sup>51</sup> Ellen Lichtenstein, *Which States Ban Gender-Rating in Insurance Premiums*, AGENTSYNC (Mar. 28, 2022), <https://agentsync.io/blog/state-regulatory-change/which-states-ban-gender-rating-in-insurance-premiums>.

<sup>52</sup> *Id.*

<sup>53</sup> Norman, *supra* note 46; Deventer, *supra* note 46.

<sup>54</sup> Isabel Slone, *Should Gender Still be a Factor Used to Set Car Insurance Rates?*, LOWESTRATES.CA (Mar. 23, 2022), <https://www.lowestrates.ca/blog/auto/should-gender-still-be-factor-car-insurance-rates>; Surina Nath, *What Do Auto Insurance Rates Look Like for Genderless Drivers?*, INS. BUS. (Mar. 18, 2022), <https://www.insurancebusinessmag.com/ca/news/auto-motor/what-do-auto-insurance-rates-look-like-for-genderless-drivers-399167.aspx>; Deventer, *supra* note 46.

<sup>55</sup> Medders et al., *supra* note 13, at 26.

current automobile insurance premium cost justification framework.<sup>56</sup> Costs should be correlated to individual risk, and in the current application of sex/gender-based automobile insurance premium calculations, this is not so. Although not every insurance company uses the exact same classification systems or ratings, considering the availability of alternative and more accurate and just risk classifiers, continuing to use a binary sex/gender classification is an inferior choice.<sup>57</sup>

A risk classification should be statistically credible and reliable and have a reasonable relationship between the factor selected and the expected loss and cost.<sup>58</sup> Data on the automobile risk for individuals whose sex/gender is anything other than male or female has not yet been studied in a meaningful way and is not recommended.<sup>59</sup> The incongruity of the definitions of these different sex and gender options likewise compounds the difficulty in obtaining useful data on risk. If automobile insurance companies are allowed to continue to use sex/gender as a classification, much further research would need to be conducted to justify the pricing of individuals who are nonbinary. However, because of the fluidity and variability of sex/gender, it is likely that even these efforts would fall short of providing meaningful actuarial value and would be suboptimal when compared to other available alternatives.

It is further suggested that to be a useful categorization, the “insured should not be easily able to misrepresent or manipulate his classification.”<sup>60</sup> However, with respect to sex/gender in automobile insurance, there has been abuse and false manipulation within this system.<sup>61</sup>

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<sup>56</sup> SCHAUER, *supra* note 43, at 19–20 (“Thus to make decisions on the basis of the characteristics of particular events or particular individuals, rather than on the basis of the characteristics of the groups or classes of which the particulars may be members, is often thought to be a moral imperative.”).

<sup>57</sup> *Id.* at 20, 152 (“[M]aximum particularity is a characteristic of both justice and wisdom, and reliance on nonparticular categories or principles is at best a necessary evil, at worst an injustice, and all too often a demonstration of stupidity. . . . Rather, in order to compensate for the observed tendencies to overuse gender-based generalizations, we treat the use of gender-based generalizations as wrong even when those generalizations are statistically relevant and thus despite the fact that they are statistically relevant.”).

<sup>58</sup> Walters, *supra* note 42, at 8.

<sup>59</sup> Sarah George, *Male vs. Female Insurance Rates: Who Pays More and Why*, FINDER (Mar. 17, 2022), <https://www.finder.com/car-insurance-rates-by-gender>; Slone, *supra* note 54.

<sup>60</sup> Walters, *supra* note 42, at 8.

<sup>61</sup> Natalie O’Neill, *Man Legally Changes Gender to Get Cheaper Car Insurance: Report*, N.Y. POST, (July 30, 2018, 1:16 PM), <https://nypost.com/2018/07/30/man-legally-changes-gender-to-get-cheaper-car-insurance-report/>; Justin Hughes, *Reddit Changes Gender, Saves More Than*

Some individuals have taken advantage of the insurance companies' flawed sex/gender classification systems in order to attain lower premium costs. In many instances, an individual is able to change the sex/gender they choose on an automobile insurance policy even if they do not truly identify in that way.<sup>62</sup> Without considering the prolonged prejudicial and harmful sociologic effects that these actions have on sex/gender-diverse individuals, it also negatively impacts automobile insurance costs.<sup>63</sup> Using sex/gender as a basis for automobile insurance premiums is nonsensical if a person can simply misrepresent the sex/gender they apply with to manipulate their cost. The idea that an insured should not be able to easily manipulate their classification group may seem at odds with concepts of uncontrollability that are used to advocate for why sex/gender are not sound classification groupings. The idea of controllability is a separate conceptualization that relates to the idea of being able to change classification groups by way of implementing safer practices.<sup>64</sup> Here, the idea of mere manipulation or misrepresentation represents a nefarious augmentation that fails to embody the adoption of safer practices but instead merely perverts a risk factor classification label.

### C. SUBSTITUTE OR PROXY FOR OTHER MEASURABLE FACTORS

Sex/gender are not direct measures of an individual's risk of having an automobile accident.<sup>65</sup> The prevalence of accidents is unattributable to

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*\$1,000 on Car Insurance*, THE DRIVE (June 11, 2018, 6:30 PM), <https://www.thedrive.com/news/20579/redditor-changes-gender-saves-more-than-1000-on-car-insurance>.

<sup>62</sup> O'Neill, *supra* note 61; Hughes, *supra* note 61.

<sup>63</sup> *The Impact of Insurance Fraud on the U.S. Economy*, COALITION AGAINST INS. FRAUD (2022) ("Insurance fraud is the crime we all pay for, whether through higher premiums, law enforcement expenses, court costs, and in medical care."); Christine G. Barlow, *Material Misrepresentations in Insurance Policies*, PROPERTYCASUALTY360 (Oct. 25, 2019, 12:00 AM), <https://www.propertycasualty360.com/2019/10/25/insurance-policy-material-misrepresentations/> ("When application or claim information is materially misrepresented, it costs the carriers and other insureds financially.").

<sup>64</sup> See *infra* Section V.a.

<sup>65</sup> Anne C. Cicero, *Strategies for the Elimination of Sex Discrimination in Private Insurance*, 20 HARV. C.R.-C.L. L. REV. 211, 215 (1985) ("Behind this extensive industry reliance on a cost justification for sex-differentiated insurance prices is only questionable empirical support."); Gaulding, *supra* note 15 at 1661 ("As with race, it is not clear that the biology of sex causes any of these risks, although the biological differences between men and women are far greater than those dividing the various races. Insurers have used these statistical differences as the basis for sex discrimination with respect to underwriting, rating, and

the individual's sex/gender as the *cause*, but instead to other “exposure” factors, such as the amount of driving that is done.<sup>66</sup> There is no *inherent* risk based in being a man, but in fact, the men that have been cited in studies to suggest actuarial basis were merely driving more than the women, at a younger age, for longer distances, or more frequently than women.<sup>67</sup> When adjusting for other more direct variables, such as the amount of miles driven, the outcomes in accident rates between men and women are not significant.<sup>68</sup> Even if credence was given to these suspect ‘actuarial’ justifications, insurance companies are relying on old data that is not reflective of current driving practices and instead follows the historical practice of applying antiquated sex/gender-based premium pricing.<sup>69</sup> Following this line of thought, sex/gender-based automobile insurance

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coverage.”); Abramoff, *supra* note 2, 690 n.30; *see generally* Avraham, *supra* note 3.

<sup>66</sup> Guohua Li, Susan P. Baker, Jean A. Langlois & Gabor D. Kelen, *Are Female Drivers Safer? An Application of the Decomposition Method*, 9 EPIDEMIOLOGY RES. INC. 379, 383 (1998); Gaulding, *supra* note 15.

<sup>67</sup> McCluskey, *supra* note 6, at 467–69; Cicero, *supra* note 65, at 215–17 n.23 (citing Fair Insurance Practices Act: Hearings on S. 372 Before the Comm. on Commerce, Science, and Transportation, 98th Cong., 1st Sess. 2-16 (1983), statement of Jasper J. Jackson, Deputy Public Advocate for the Division of Rate Counsel, N.J. Dep't of the Public Advocate: “there is no difference in the accident rates of men and women, even in the teenage years, when the data are adjusted to include the difference in miles driven. If so, the use of sex, rather than the more accurate proxy of driving habits and commuting needs, has an adverse impact on those women who do not drive frequently.”); Butler et al., *supra* note 36, at 398.

<sup>68</sup> Butler & Butler, *supra* note 30, at 226; Aaron S. Edlin, *Per-Mile Premiums for Auto Insurance* 17 (Nat'l Bureau of Econ. Rsch., Working Paper No. 6934, 1999); Li et al., *supra* note 65, at 383; Cather, *supra* note 5, at 433 (“Pricing based on gender instead of miles driven can result in sizable pricing errors, especially for drivers whose mileage is atypical of their gender.”). *But cf.* SCHAUER, *supra* note 43, at 100 (“Each of these debates turns out to be about the advantages and disadvantages of relying on nonspurious but nonuniversal generalizations, and each of these debates then turns out to compel a focus on the advantages and disadvantages of relying on generalizations compared to relying on seemingly more individualized assessments.”).

<sup>69</sup> Pierluigi Cordellieri, Francesca Baralla, Fabio Ferlazzo, Roberto Sgalla, Laura Piccardi & Anna Maria Giannini, *Gender Effects in Young Road Users on Road Safety Attitudes, Behaviors and Risk Perception*, 7 FRONTIERS IN PSYCH. 1, 8 (2016). Commonly cited sources for gender-based insurance premiums costs include: Federal Highway Administration 2009 National Household Travel Survey; National Highway Traffic Safety Administration, Traffic Safety Facts 2008: *A Compilation of Motor Vehicle Crash Data from the Fatality Analysis Reporting System and the General Estimates System*, U.S. DEP'T OF TRANSP. (2008).



premium calculations have been suggested as merely a substitute/proxy factor for other more direct factors<sup>70</sup> (such as miles driven or driving habits), having developed that way because studies distinguishing risk by sex/gender were simple and low cost to conduct and review.<sup>71</sup> Because of its ease, sex/gender was a “useful” measure for risk stratification.<sup>72</sup> With broad technological advancements however, more appropriate and much more direct, quantifiable, and actuarially sound risks such as miles driven and/or driving patterns (factors that the industry refers to as “pay-as-you drive” factors) are now easily available and should be adopted instead.<sup>73</sup> There is little sense in continuing to use sex/gender as a crude proxy instead of other finer measures that can be used that are based on actual driving behavior.<sup>74</sup>

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<sup>70</sup> Cicero, *supra* note 65, at 212; John D. Hatch, *Should Insurance Be Blind to Sex?*, 12 BRIEF 9, 9 (1983); Butler et al., *supra* note 36, at 401.

<sup>71</sup> Cather, *supra* note 5, at 432 (“[G]ender-based pricing was adopted by auto insurers as a proxy for mileage driven, noting that males tend to drive more than females, but that insurers at that time could not devise a reliable, low-cost way to track a driver’s mileage. . . . However, despite the correlation between gender and mileage driven, using gender as a proxy for mileage can result in considerable pricing heterogeneity.”); Medders et al., *supra* note 13, at 10; Wiegers, *supra* note 35, at 152; SCHAUER, *supra* note 43, at 187 (“[R]ace, gender, and age, and often ethnicity, unlike many other attributes, have a visibility and a consequent salience that makes them stand out more than other factors. Such attributes thus have a tendency to be utilized more than their actual predictive contribution would justify. Because these attributes, unlike other personal characteristics and attributes, are “visually accessible, culturally meaningful, and interactionally relevant,” such factors occupy more of the decisionmaking space than their empirical role would support.”).

<sup>72</sup> Cather, *supra* note 5, at 432; Medders et al., *supra* note 13, at 10; Wiegers, *supra* note 35, at 152.

<sup>73</sup> Mercedes Ayuso, Montserrat Guillen & Ana María Pérez Marín, *Telematics and Gender Discrimination: Some Usage-Based Evidence on Whether Men’s Risk of Accidents Differs from Women’s*, 4 RISKS 1, 1 (2016) (explaining that technology today makes it possible to monitor a driver’s speed, miles driven, time of day driven, and use this sort of data to base pricing options); Jean Lemaire, Sojung Carol Park & Kili C. Wang, *The Use of Annual Mileage as a Rating Variable*, 46 ASTIN BULL. 39, 39 (2015) (“Auto insurers, in order to remain competitive in risk selection and pricing, are constantly seeking better ways to measure risk. To this end, they adopt numerous rating variables—and, when unavailable, proxy variables—to better gauge how risky each particular customer is.”).

<sup>74</sup> Anya E.R. Prince & Daniel Schwarcz, *Proxy Discrimination in the Age of Artificial Intelligence and Big Data*, 105 IOWA L. REV. 1257, 1279 (2020) (“Returning to the example of sex and auto insurance, insurers are increasingly generating more direct data about driver care levels through techniques like

## D. CORRELATION VERSUS CAUSATION

Some regulators argue that correlative relationships are not enough to support the use of a classification in automobile insurance underwriting.<sup>75</sup> This is even more strongly supported when the factor at issue is a legally suspect classification system.<sup>76</sup> When a classification treats people differently on the basis of sex/gender specifically, a merely correlative relationship can be considered unfair discrimination.<sup>77</sup> In the case *Hartford Accident and Indemnity Co. v. Insurance Commissioner of the Commonwealth of Pennsylvania*, the Supreme Court of Pennsylvania upheld the Insurance Commissioner's decision that the use of gender for automobile insurance rates was unfairly discriminatory and contrary to public policy.<sup>78</sup> Justice Hutchinson's concurrence in that case supported the holding that the use of gender was unfairly discriminatory and that

[a]bsent at least a causal relation between sex and accident incidence a difference in auto insurance rates between men and women is plainly an unfair discrimination based on sex. No causal connection is shown on this record. What

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telematics. As this data becomes more widely available, may shift from proxy discriminating based on sex to discriminating based on non-suspect and more direct measures of driver care, like frequency of sudden stops.”).

<sup>75</sup> Cather, *supra* note 5, at 430 (“Some regulators prefer insurers to use pricing variables that are causally related to insured losses—e.g., charging drivers more if they drive fast or have high mileage because the chance of having an accident increases with greater driving exposure—because such pricing relationships are easier for the public to accept and control. However, some pricing variables are not causally linked to losses but instead are correlated to expected loss. Recently, regulators and insurers have disagreed about whether the standard for including a pricing variable in a risk classification system should be causation or correlation.”). See also *id.* at 432; McCluskey, *supra* note 6, at 469.

<sup>76</sup> Lemaire et al., *supra* note 73, at 44 (“Any classification variable that perpetuates or reinforces social inequalities can be considered as suspect, as well as any characteristic associated with historical discrimination. The Supreme Court specifically characterized race, religion and national origin as definitely suspect factors, and gender and illegitimacy of birth as quasi-suspect. While not going as far as prohibiting the use of age, gender or marital status, the Canadian Supreme Court has requested insurers to at least explore whether better, non-discriminating, variables exist.”) (internal citations omitted).

<sup>77</sup> See Cather, *supra* note 5, at 428.

<sup>78</sup> *Hartford Accident & Indem. Co. v. Ins. Com’r of Com. of the Commonwealth of Pa.*, 482 A.2d 542 (Pa. 1984) (This case provides another example of the historical conflation of the terms sex and gender).

does appear is only a statistical correlation between sex and incidence of auto accidents. This correlation simply provides a convenient measuring rod for setting rate differentials occasioned by other factors not so easily identified or quantified. Such considerations of convenience are not enough to stand in the face of our ERA [Pennsylvania Constitution Equal Rights Amendment].<sup>79</sup>

A causal relationship between the use of a suspect classification factor and the risk of making a claim should be a prerequisite to using the factor as a determinant of the price of automobile insurance premiums.<sup>80</sup> A causal relationship standard—as compared to a mere correlation—would also better prevent adverse selection and moral hazard concerns. A causal connection would more appropriately identify the actual risk that a policyholder poses so that costs could be calculated more accurately.<sup>81</sup>

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<sup>79</sup> *Id.* at 550 (The ERA being referenced in this case is the Pennsylvania Equal Rights Amendment that includes protections against “sex discrimination.” The Insurance Commissioner of Pennsylvania, when evaluating the use of gender in automobile insurance premium costs, found it unfairly discriminatory); PA. CONST. art. I, § 28 (“Equality of rights under the law shall not be denied or abridged in the Commonwealth of Pennsylvania because of the sex of the individual.”).

<sup>80</sup> Cicero, *supra* note 65, at 212; Leah Wortham, *Insurance Classification: Too Important to be Left to the Actuaries*, 19 UNIV. MICH. J.L. REFORM 349, 380 (1986); Prince & Schwarcz, *supra* note 74, at 1317 (“[A] causality requirement has the ability to limit proxy discrimination and increase perceptions of fairness in predictive models.”).

<sup>81</sup> Cather, *supra* note 5, at 428 (“One such innovation is usage-based insurance (UBI), an increasingly popular pricing innovation in many auto insurance markets. . . . Telematics also offers the promise of reducing insurance discrimination related to age- and gender-based pricing.”); Manda Winlaw, Stefan H. Steiner, R. Jock MacKay & Allaa R. Hilal, *Using Telematics Data to Find Risky Driver Behaviour*, ACCIDENT ANALYSIS & PREVENTION 131, 131 (2019) (explaining that telematics can be used to better assess a driver’s risk and influence policy pricing, which in turn would incentive drivers to perform more safely”); Robert D. Helfand, *Big Data and Insurance: What Lawyers Need to Know*, 21 J. INTERNET L. 1, 5 (2017). *See also id.* at 3 (“In the near future, insurers will have integrated Big Data into every facet of their operations, from marketing and underwriting to claims handling and investment.”); Rachel C. Adams, Petroc Sumner, Solveiga Vivian-Griffiths, Amy Barrington, Andrew Williams, Jacky Boivin, Christopher D. Chambers & Lewis Bott, *How Readers Understand Causal and Correlational Expressions Used in News Headlines*, 1 J. EXPERIMENTAL PSYCH. 1, 5 (2017); Anton Kok, *Motor Vehicle Insurance, the Constitution and the Promotion of*

Because sex/gender is not causally linked to automobile accident likelihood, it unduly punishes individuals to whom those generalizations do not apply.<sup>82</sup> Instead of using a factor such as sex/gender as a convenient and relatively easy-to-use classification for risk of loss, insurers could replace sex/gender with more accurate factors—such as driver experience, mileage driven, and accident and drunk driving records<sup>83</sup>—which have an actual causal link to automobile accident risk thereby bolstering trust, utility, and social acceptability in the metrics employed in pricing policies.<sup>84</sup>

#### E. PREVIOUS JUSTIFICATIONS ARE OUTDATED

Many of the studies that have considered sex/gender-based differences in driving may not reflect current driving patterns and likelihood of risk.<sup>85</sup> The supposed gap between historical male and female automobile accident risk is no longer accurate. Newly emerging data is in opposition to historical findings of men being a riskier classification group for automobile insurance.<sup>86</sup> Over time, female drivers have begun to drive

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*Equality and Prevention of Unfair Discrimination Act*, 18 S. AFR. J. HUM. RTS. 59, 75 (2002).

<sup>82</sup> Paula Sharp, *Insurance as a Public Accommodation: Challenging Gender-Based Actuarial Tables at the State Level*, 15 COLUM. HUM. RTS. L. REV. 227, 256 (1984) (“Gender, like race, is not causally [sic] linked to longevity, auto accident rate or propensity to illness. Insurance classification schemes which link gender or race to these kinds of risk are necessarily dependent on generalizations which unduly penalize individuals to whom such generalizations do not apply.”); Amy J. Schmitz, *Sex Matters: Considering Gender in Consumer Contracting*, 19 CARDOZO J.L. & GENDER 437, 473 (2013). (“Moreover, not all women or men are alike; generalizations are unwise.”); Anthea Natalie Wagener, *Motor-Vehicle Insurance and Discrimination: A Comparative Analysis of the Acceptability of Actuarial Evidence*, 23 S. AFR. MERCANTILE L. J. 376, 387–88 (2011).

<sup>83</sup> Sharp, *supra* note 82, at 229–30.

<sup>84</sup> Kok, *supra* note 81, at 76; Wagener, *supra* note 81, at 387–88 (“Although age and gender are simplistic, stable and easily verifiable rating variables, this should not outweigh the need for a causal link. Alternative rating variables exist which do show a causal link between themselves and the risk of loss, such as mileage.”); Stephen R. Ryan, *Elimination of Gender Discrimination in Insurance Pricing: Does Automobile Insurance Rate Without Sex?*, 61 NOTRE DAME L. REV. 748, 758–59 (1986).

<sup>85</sup> Cordellieri et al., *supra* note 69, at 8. Commonly cited for gender-based insurance premiums costs include: U.S. DEP’T. OF TRANSP., 2009 NATIONAL HOUSEHOLD TRAVEL SURVEY, *supra* note 69, and U.S. DEP’T OF TRANSP., TRAFFIC SAFETY FACTS 2008, *supra* note 69.

<sup>86</sup> Eduardo Romano, Tara Kelley-Baker & Robert B. Voas, *Female Involvement in Fatal Crashes: Increasingly Riskier or Increasingly Exposed?*, 40 ACCIDENT ANALYSIS & PREVENTION 1781, 1786 (2008).

more often and to adopt more traditionally male-perceived driving habits (e.g., alcohol use, speeding), and thus, any previously believed difference in risk of an accident compared by sex/gender is no longer significant.<sup>87</sup> Insurance companies that still promote men being riskier drivers are basing these premium decisions on old data that is not reflective of the newer female attitudes and driving practices that appear to contribute to their increasing risk of automobile injury and fatality.<sup>88</sup> Further, these historical assertions do not include projections for individuals who are nonbinary either.<sup>89</sup>

## V. UNFAIR SEX/GENDER DISCRIMINATION

### A. FAIR/UNFAIR DISCRIMINATION

Even if basing automobile premiums on sex/gender were actuarially sound, the practice should still be prohibited because it is an unfair sex/gender discrimination practice. Discrimination in insurance is a necessary part of its structure.<sup>90</sup> Insurance discrimination can be categorized as either fair/efficient discrimination or unfair discrimination.<sup>91</sup> Efficient discrimination is described as classifying individuals into groupings based on their risk of loss as supported by statistical data.<sup>92</sup> Efficient discrimination based on actuarial validity is at odds with some social conceptions of fairness.<sup>93</sup> Most states have provisions that prohibit

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<sup>87</sup> *Id.* at 1788; Dipan Bose, Maria Segui-Gomez & Jeff R. Crandall, *Vulnerability of Female Drivers Involved in Motor Vehicle Crashes: An Analysis of US Population at Risk*, 101 AM. J. PUB. HEALTH 2368, 2368 (2012).

<sup>88</sup> Bose et al., *supra* note 87, at 2371–72 (“Female motor vehicle drivers today may not be as safe as their male counterparts; therefore, the relative higher vulnerability of female drivers (approximately 50% or higher odds of sustaining injuries) when exposed to moderate and serious crashes must be taken into account.”); Medders et al., *supra* note 13, at 11 (“Some of the controversy relates to a narrowing of the loss/claims gap between males and females and thus instability in gender as a rating factor over time. This potential instability in the distinct male-female risk differential may owe both to societal changes over time, as well as within-insured changes over time.”).

<sup>89</sup> See *supra* Section IV.b.

<sup>90</sup> Rosenfield, *supra* note 3, at 109.

<sup>91</sup> Gaulding, *supra* note 15, at 1674.

<sup>92</sup> Cicero, *supra* note 65, at 218 (“Under the industry view, fair discrimination permits the use of group classifications legitimized by data establishing that those classifications correlate strongly with insurable risks.”); Daniel Schwarcz, *Towards a Civil Rights Approach to Insurance Anti-Discrimination Law*, 69 DEPAUL L. REV. 657, 666 (2020).

<sup>93</sup> Ryan, *supra* note 84, at 749.

“unfairly discriminatory” insurance rates.<sup>94</sup> Most often, states try to define unfair discrimination as that which is not actuarially supported.<sup>95</sup> However, other states support another definition of unfair discrimination, as advocated here, which is discrimination based on specific protected characteristics, whether or not they are justified by actuarial science.<sup>96</sup> In other words, insurers should only be allowed to use characteristics that are “(a) causally connected to the risk measured, (b) controllable, and (c) not associated with historical or invidious discrimination—the anti-discrimination view.”<sup>97</sup> Commonly prohibited examples include race, ethnicity, and national origin.<sup>98</sup> For the purposes of this note, the application of this definition of unfair discrimination will be referred to as “prejudicially unfair discrimination” for clarity.

One area where the definitions of unfair discrimination from an actuarial standpoint and prejudicially unfair discrimination from a social justice perspective differ is whether a correlative relationship is enough to justify the use of a criterion or whether a stronger causal relationship is necessary.<sup>99</sup> To have a system that is fair to all participants, the insurance structure must balance actuarially efficient discrimination while prohibiting prejudicially unfair discrimination.<sup>100</sup> In more recent years, the complete elimination of sex-based classifications in insurance can be viewed as

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<sup>94</sup> Schwarcz, *supra* note 92, at 667; Valarie K. Blake, *Ensuring an Underclass: Stigma in Insurance*, 41 CARDOZO L. REV. 1441, 1441 (2020).

<sup>95</sup> Cicero, *supra* note 65, at 217 (“While conceding that the use of sex as a risk factor is facially discriminatory, the industry propounds a standard of ‘fair discrimination’ against which to assess its rating and underwriting practices.”).

<sup>96</sup> Schwarcz, *supra* note 92, at 669; SCHAUER, *supra* note 43, at 17 (“But when such people describe as ‘prejudices’ the statistically sound generalization about the propensity toward crime of ex-convicts, it is because they believe it is usually wrong to prejudice people even on the basis of statistically sound group characteristics.”).

<sup>97</sup> Gaulding, *supra* note 15, at 1647, 1657–58 (“[I]t would not be fair to charge them higher rates, because people do not choose their race, their sex, or their genes: these are non-causal, immutable factors, historically linked to unfair treatment.”). See Edward W. (Jed) Frees & Fei Huang, *The Discriminating (Pricing) Actuary*, N. AM. ACTUARIAL J. 1, 5 (2021) (suggesting the use of reviewing the following factors for fairness: 1) control/voluntariness, 2) mutability, 3) statistical discrimination, 4) causality, 5) Limiting or reversing the effects of past prejudice, and 6) inhibiting socially valuable behavior). See also Kok, *supra* note 83, at 71 (suggesting review of the following factors for fairness: 1) Homogeneity, 2) Separation, 3) Causality, 4) Social Acceptability, and 5) Incentive Value).

<sup>98</sup> Schwarcz, *supra* note 92, at 669.

<sup>99</sup> Cicero, *supra* note 65, at 219.

<sup>100</sup> Ryan, *supra* note 84, at 749; Avraham et al., *supra* note 45, at 214–16.

socially fair because it provides “equal treatment of the sexes.”<sup>101</sup> Even if the use of sex/gender in automobile insurance premium pricing is statistically supported, it should be prohibited because it is socially unacceptable and prejudicially unfair discrimination to use as a basis for cost justification.<sup>102</sup> Statistical association with loss is necessary to justify use as a premium cost factor, but statistical association alone is not *sufficient* proof that the factor should be permitted.<sup>103</sup> Though it is obvious that due to market stability and profitability, an insurance company’s financial concerns must be part of the consideration, that is not the end of the conversation when deciding whether a rating variable is appropriate.<sup>104</sup> It is unfair and objectionable to apply suspect sex/gender-based assumptions to individuals where the statistical correlation is a generalization and is not valid in that individual’s specific case.<sup>105</sup> When considering a person’s fundamental right to equal treatment, one must be considered as an individual and not just in their capacity as a member of a larger group.<sup>106</sup> Even if statistical generalizations may be found valid for a larger group, those generalizations should not be applied to an individual that it may not be true for, especially when those generalizations are based on a grouping that the individual has not chosen to belong in, as can often be the case with sex/gender.<sup>107</sup>

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<sup>101</sup> Ryan, *supra* note 84, at 749.

<sup>102</sup> Brian J. Glenn, *The Shifting Rhetoric of Insurance Denial*, 34 L. SOC’Y REV. 779, 782–83 (2000); Ryan, *supra* note 84, at 762 (“The abandonment of cost-based pricing cannot be tolerated when insurers can implement other factors to account for the loss of sex in classification; other factors which can achieve the actuarial validity of the sex classification without the social unfairness.”); SCHAUER, *supra* note 43, at 18 (“This primary concern, a concern that the definitional ambiguity between statistically sound and statistically unsound generalizations illuminates, is about the appropriate (and inappropriate) uses of statistically sound but nonuniversal generalizations.”).

<sup>103</sup> Wortham, *supra* note 5, at 883.

<sup>104</sup> Kok, *supra* note 81, at 84.

<sup>105</sup> Raghav Harini N, *Equality and Efficiency in the Economics of Insurance*, OXFORD POL. REV. (Aug. 24, 2022), <https://oxfordpoliticalreview.com/2022/08/24/equality-and-efficiency-in-the-economics-of-insurance/>.

<sup>106</sup> More recent interpretations of Equal Protection focus on the individual rather than just on effects to the entire group. *See e.g.*, *City of L.A., Dep’t. of Water & Power v. Manhart*, 435 U.S. 702 (1978). *See also* Richard A. Primus, *Equal Protection and Disparate Impact: Round Three*, 117 HARV. L. REV. 494, 497 n.15, 498–500, 552–54, 563 (2003).

<sup>107</sup> Yves Thiery & Caroline Van Schoubroeck, *Fairness and Equality in Insurance Classification*, 31 THE GENEVA PAPERS RISK & INS. 190, 192 (2006).

Control is viewed as whether or not an insured has the ability to manipulate the factor in a way that changes their likelihood of risk.<sup>108</sup> Historically, sex/gender has been viewed as a non-controllable trait and, therefore, it would be unfair to price insurance costs based on a trait that the individual could not control.<sup>109</sup> The purpose behind using controllable factors to base insurance costs is that an insured would be able to alter the risk factor class that they could be assigned to by modifying their behaviors and efforts. By being able to personally manipulate which class an insured belongs to, there is an incentive to change one's behaviors to fit into the lower-risk class grouping so as to pay lower premiums. For example, if an insurance company uses telematics to see how fast users drive their cars, and drivers know that speed is used to calculate premium costs, then drivers would have an incentive to drive at appropriate and safer speeds. Similarly, if insurance companies use miles driven as a factor to calculate premium costs, drivers would be able to control and adjust the amount that they drive in order to pay lower premiums. Altering one's own risk factors in this way would, in effect, reduce the policyholder's own costs and also the risk of loss within the entire insurance system.<sup>110</sup>

When a factor is unchangeable, however, as sex/gender traditionally has been viewed to be, it can be considered a suspect factor. In *Frontiero v. Richardson*, the United States Supreme Court described gender as a suspect factor similar to race and national origin because of its immutability and stated that it bears no relation to abilities and societal contributions.<sup>111</sup> Even in light of the current understanding of sex/gender, if these factors are considered controllable because they can change, it would still not be useful as a factor for basing insurance premium costs. The idea

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<sup>108</sup> Frees & Huang, *supra* note 97, at 5.

<sup>109</sup> Harini N, *supra* note 105; Wiegers, *supra* note 35, at 167 ("As a rule, however, some of the variables generally considered in relation to automobile insurance are potentially or functionally more controllable than others. Mileage and the driver's record (particularly the record of traffic convictions), for example, do make it possible for an applicant to improve his or her predictive assessment by curtailing discretionary driving or driving behaviour that is likely to increase the probability of an accident. By contrast, sex and race, much like height and eye colour, are fixed attributes."); Kok, *supra* note 81, at 71.

<sup>110</sup> Walters, *supra* note 42, at 10; Ayuso et al., *supra* note 73, at 9 ("Meanwhile, the advantages for customers are clear: they pay a lower premium if they drive fewer kilometers or drive more safely. In this regard, it has been shown that PAYD policies bring about changes in driving patterns among those who want to obtain a better premium under this pricing system. More specifically, PAYD has a positive effect on mileage reduction and also on speed reduction.").

<sup>111</sup> See generally *Frontiero v. Richardson*, 411 U.S. 677 (1973). See also Thiery & Van Schoubroeck, *supra* note 107, at 197–98.



behind ‘controllability’ for the purpose of determining insurance premium costs is reflective of its purpose in promoting safer practices.<sup>112</sup> Even though sex/gender may now be understood on a more fluid and less concrete spectrum, it is still not controllable in the ways that factors which affect an individual’s driving risk are (e.g., miles driven, speed). Unfortunately, there have been a small number of cases of sex/gender fraud or misrepresentations on automobile insurance documentation to achieve cheaper premium pricing.<sup>113</sup> However, marking a different designation does not actually affect the individual’s driving performance and their subsequent risk of an accident. The premise for the previous justification of insurance premium costs under this idea of controllability is different than fraudulent misrepresentation. Regardless of whether sex/gender is considered not controllable (from a historical perspective), or controllable (in light of modern understandings), in either framework sex/gender as a basis for premium costs is not a useful factor to influence safe driving practices. A suspect factor that is out of a person’s control imposes benefits and burdens that are not deserved and are “presumptively unjust.”<sup>114</sup> For these reasons, sex/gender, especially as understood as a fluid and nonbinary concept, should be considered a suspect factor and, therefore, presumptively unjust as a determination for automobile insurance premium costs.

## B. ANTI-DISCRIMINATION

From the perspective of a social definition of anti-discrimination, classifications that harm unprivileged groups should be prohibited. Classifications that involve “historically disenfranchised groups, such as people discriminated against on the basis of race or gender, should be off limits.”<sup>115</sup> Continuing to use sex/gender as a determinant for automobile

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<sup>112</sup> Lemaire et al, *supra* note 73, at 45 (“Mileage is a socially acceptable variable, mostly because of controllability: drivers have a strong incentive to affect their accident rate by reducing their driving. It improves fairness by shifting weight in pricing towards an individually controllable factor rather than based on involuntary membership in a group.”).

<sup>113</sup> O’Neill, *supra* note 61; Hughes, *supra* note 61.

<sup>114</sup> Wieggers, *supra* note 35, at 163; Amy Fontinelle, *Gender and Insurance Costs*, INVESTOPEDIA, (July 25, 2022), <https://www.investopedia.com/gender-and-insurance-costs-5114126>.

<sup>115</sup> Blake, *supra* note 94, at 1453; Kent West, *Gender in Automobile Insurance Underwriting: Some Insureds Are More Equal Than Others*, 50 ALTA. L. REV. 679, 683 (2013) (“Western society has decided that race should not be used as a basis of distinguishing between individuals, even if it could be shown statistically that there is a relationship between a person’s race and his or her risk as an

insurance premium costs prolongs harmful sex/gender stereotypes and prejudices that support male aggression and female docility and ignores the existence of alternative identifications.<sup>116</sup> It may seem counterintuitive to support prohibiting the use of sex/gender in automobile insurance premiums because the current system seemingly benefits the traditionally viewed marginalized female, but that is not necessarily correct.<sup>117</sup> Women are not always charged less than their male counterparts for automobile insurance, and there are systemic problems inherent in continuing to differentiate insureds on the basis of sex/gender. It should be prohibited because of the “expressive harm associated with reaffirming the relevance of gender-based social patterns and practices.”<sup>118</sup> Likewise, under this

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insured.”); SCHAUER, *supra* note 43, at 186 (“Yet recall our discussion of gender, and of the possibility that at times we may wish to impose a compensatory underuse of a relevant factor in order to account for an expected overuse. Just as we may at times prohibit the use of gender even when it is statistically relevant in order to prevent it from being more of a factor than it actually is, so too might the same apply to race or ethnicity.”).

<sup>116</sup> Butler et al., *supra* note 36, at 412.

<sup>117</sup> *Id.*; West, *supra* note 115, at 695 (“For example, even if it could be proven that people of a certain race or religion were statistically more likely to be involved in an automobile accident, it is highly unlikely that society would approve of the use of such variables in setting premiums.”); *id.* at 694 (“One of the main philosophical underpinnings of anti-discrimination laws is that it is repugnant that people be judged based on presumptions which are associated with innate characteristics over which they have no control. In the insurance context, this means that factors such as ethnic origin, race, and gender should not be used to distinguish between applicants. Even if there is a correlative relationship between gender and average risk of loss, it seems unfair to judge the risk of an individual applicant based on the presence or absence of a Y chromosome.”); Hatch, *supra* note 69, at 10 (“Supporters of “sex-blind” insurance acknowledge that one result of eliminating sex as a rating factor would be increased rates for women, but they contend that, in the long run, women would be better off. Moreover, they say, higher insurance rates for women may simply be part of the price of equality.”); Avraham et al, *supra* note 3, at 16 (“First, insurers’ use of certain risk characteristics may reinforce or perpetuate broader social inequalities by making insurance less available or more expensive to historically disadvantaged groups. For instance, insurers who charged more to immigrant drivers would thereby perpetuate preexisting inequalities. Second, risk-classification schemes may be socially suspect because they cause some sort of expressive harm, even though they do not penalize with higher rates members of groups who are traditionally disadvantaged.”).

<sup>118</sup> Avraham et al, *supra* note 3, at 17. See *supra* Section IV.a.

premise, the system does not account for inequities that occur beyond a binary understanding of sex/gender.<sup>119</sup>

A factor is more likely to be found prejudicially unfairly discriminatory if it impairs human dignity.<sup>120</sup> “If a prospective rating variable perpetuates negative stereotypes about a group or may result in disparate outcomes by group, it is understandably considered by many in society to be socially disadvantageous for use even if the economic connections are statistically valid.”<sup>121</sup> The use of sex/gender as a category for differentiating treatment in insurance is socially suspect if it “reinforces or perpetuates broader social inequalities, or [] causes some sort of expressive harm by acknowledging and legitimating prior unfair treatment.”<sup>122</sup> Insurance discrimination based on sex/gender is likely to impair human dignity because it equates a perception and a cost of unsafe driving onto a class of individuals that may not be representative of all the individual persons within the class.<sup>123</sup> Even if one believes that women are safer automobile drivers than men, the imposition of a class-based justification for insurance price would not provide justification for the use of a female premium to a member of the female group who was not a safer driver.<sup>124</sup> Although perfect homogeneity is an unattainable standard, in the face of finding the best classification groupings for automobile insurance premiums, easily attainable and more direct factors should be substituted for the suspect classification of sex/gender.

In other contexts, such as employment or housing, this type of delineation of characteristics has been held to be “explicit sex

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<sup>119</sup> Robert J. Carney and Donald W. Hardigree, *The Economic Impact of Gender-Neutral Insurance Rating on Women*, 13 J. INS. ISSUES & PRACS. 1, 6, n.14 (1990) (“The use of gender may not be intended to harm women, but given the prevalence of gender discrimination in society, there are many who are offended by it. Thus, even if the variable were used with the best intentions and with no direct economic harm to women, the use of gender as a classification, just as the use of race or religion, should not be acceptable in our society.”).

<sup>120</sup> Kok, *supra* note 81, at 70–72 (“The Court reasoned that ‘public policy’ or ‘social acceptability’ was reason enough to disallow sex discrimination.”).

<sup>121</sup> Medders et al., *supra* note 13, at 15; SCHAUER, *supra* note 43, at 154 (“The truth is that it is because gender discrimination is wrong that gender-based generalization, even when statistically rational, is wrong as well.”).

<sup>122</sup> Avraham et al., *supra* note 45, at 216–217.

<sup>123</sup> Kok, *supra* note 81, at 72.

<sup>124</sup> See e.g., *City of L.A., Dep’t. of Water & Power v. Manhart*, 435 U.S. 702 (1978). See also *Developments in the Law: Employment Discrimination and Title VII of the Civil Rights Act of 1964*, 84 HARV. L. REV. 1109, 1174 (1971) (“Automobile insurance statistics show women to be safer drivers than men. Even assuming the validity of this statistic, a trucking company could not refuse to hire men on the theory that they are, on the whole, less safe drivers.”).

discrimination.”<sup>125</sup> In American jurisprudence and legislation the use of sex/gender as a classification has been prohibited in many different areas, including in employment, housing, credit, and healthcare, to name a few.<sup>126</sup> The same reasons that the public found the use of sex/gender unacceptable in those contexts, in the name of equal rights, could easily and should be spread to the automobile insurance realm as well. Using factors such as miles driven, speed driven, or other “pay as you drive” factors instead, insurance companies and policyholders would benefit not only financially but would also avoid unfairly prejudicial discrimination.<sup>127</sup>

The Supreme Court has supported decisions that prohibit discrimination based on sex/gender regardless of which party benefits. In the case of *Craig v. Boren*, the Supreme Court rejected the use of sex as a classification in the prohibition of alcohol to men under the age of 21, in a situation where women over the age of 18 could purchase alcohol.<sup>128</sup> Even though statistics supported the use of sex as a means to differentiate between the groups, sex-based discrimination was found to deny males equal protection of the law.<sup>129</sup> In that case, women were seen as the group with the advantage, but the Court’s decision still disallowed the delineation

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<sup>125</sup> *Id.* (“A ban on sex discrimination must mean that attributes of one sex cannot be used to burden any single employee who may not share that attribute. Since some men are safe drivers, and some women are not, this type of policy constitutes explicit sex discrimination. The employer is not, strictly speaking, hiring only safe drivers; he is hiring only women safe drivers.”); Blake, *supra* note 94, at 1454.

<sup>126</sup> *Equality Maps: Public Accommodations Nondiscrimination Laws*, MOVEMENT ADVANCEMENT PROJECT, [https://www.lgbtmap.org/equality-maps/non\\_discrimination\\_laws/public-accommodations](https://www.lgbtmap.org/equality-maps/non_discrimination_laws/public-accommodations) (last visited Nov. 26, 2022); *Housing Discrimination and Persons Identifying as Lesbian, Gay, Bisexual, Transgender, And/Or Queer/Questioning (LGBTQ)*, U.S. DEP’T OF HOUS. & URB. DEV., (Feb. 1, 2022), [https://www.hud.gov/program\\_offices/fair\\_housing\\_equal\\_opp/housing\\_discrimination\\_and\\_persons\\_identifying\\_lgbtq#\\_Fair\\_Housing\\_Act](https://www.hud.gov/program_offices/fair_housing_equal_opp/housing_discrimination_and_persons_identifying_lgbtq#_Fair_Housing_Act); *HHS Announces Prohibition on Sex Discrimination Includes Discrimination on the Basis of Sexual Orientation and Gender Identity*, U.S. DEP’T OF HEALTH & HUM. SERVS., (May 10, 2021), <https://www.hhs.gov/about/news/2021/05/10/hhs-announces-prohibition-sex-discrimination-includes-discrimination-basis-sexual-orientation-gender-identity.html> [hereinafter *HHS Prohibition*].

<sup>127</sup> Ayuso et al., *supra* note 73, at 9; J.W. Bolderdijk, J. Knockaert, E.M. Steg & E.T. Verhoef, *Effects of Pay-As-You-Drive Vehicle Insurance on Young Drivers’ Speed Choice: Results of a Dutch Field Experiment*, 43 ACCIDENT ANALYSIS & PREVENTION 1181, 1182 (2011) (“PAYD entails that insurance premiums are directly based on the driving behavior of policyholders.”).

<sup>128</sup> *Craig v. Boren*, 429 U.S. 190, 199 (1976).

<sup>129</sup> *Id.* at 201; McCluskey, *supra* note 6, at 466–67.

based on sex. Even though adverse selection, moral hazard, and cross-subsidization are lesser risks when considered in the context of purchasing alcohol, the same prejudicially unfair anti-discrimination principles should be applied to prohibit the use of sex/gender classification systems in the automobile insurance context. There are many areas where discriminating on the basis of sex/gender is not permitted, and automobile insurance should not be any different.<sup>130</sup>

The United States Department of Health and Human Services (HHS) announced that in light of the Supreme Court's decision in *Bostock v. Clayton County*, it will prohibit discrimination on the basis of sex to also include sexual orientation and gender identity.<sup>131</sup> In that decision, HHS Secretary Xavier Becerra announced, "The Supreme Court has made clear that people have a right not to be discriminated against on the basis of sex and receive equal treatment under the law, no matter their gender identity or sexual orientation."<sup>132</sup> The *Bostock* decision was based on prejudicially unfair discrimination in employment, where firing an employee for their sexual orientation or gender identity was seen as a violation of Title VII of the Civil Rights Act.<sup>133</sup> Though HHS's decision focused on unequal access to healthcare resources on the basis of gender identity, the underlying principles should be extended to other fields, including automobile insurance.

Social acceptability of a risk classification class is interconnected to its perceived fairness and legitimacy.<sup>134</sup> One of the factors that the American Academy of Actuaries suggests should be considered in risk classifications is that "[t]he system should be acceptable to the public."<sup>135</sup> Race, color, religion, sex, and national origin are often viewed as not socially acceptable risk classification groups.<sup>136</sup> Like the prohibition of the use of race and religion in the insurance context, using similar reasoning,

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<sup>130</sup> Wortham, *supra* note 80, at 404 ("The federal government has seen fit to forbid the use of race, religion, sex, marital status, and national origin classification in credit.").

<sup>131</sup> *HHS Prohibition*, *supra* note 126.

<sup>132</sup> *Id.*

<sup>133</sup> *Bostock v. Clayton Cnty.*, 140 S. Ct. 1731 (2020).

<sup>134</sup> Linda J. Skitka, Christopher W. Bauman & Brad L. Lytle, *Limits on Legitimacy: Moral and Religious Convictions as Constraints on Deference to Authority*, 97 J. PERSONALITY & SOC. PSYCH. 567, 567 (2009).

<sup>135</sup> Robert L. Brown, Darren Charters, Sally Gunz & Neil Haddow, *Colliding Interests – Age as an Automobile Insurance Rating Variable: Equitable Rate-Making or Unfair Discrimination?*, 72 J. BUS. ETHICS 103, 107–08 (2007).

<sup>136</sup> Wortham, *supra* note 80, at 412.

surely sex/gender should be prohibited as well.<sup>137</sup> For instance, religion may be considered a factor that could be changed, but under American anti-discrimination standards, it is impermissible to treat classes of people differently based on their religion.<sup>138</sup> As the ideas about the roles of men, women, and those who identify outside of that binary are constantly evolving and changing, fairness weighs against discriminating on the basis of sex/gender classification systems.<sup>139</sup> When considering equity, social

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<sup>137</sup> Wiegers, *supra* note 35, at 150; McCluskey, *supra* note 6, at 465; Prince, *supra* note 6, at 653–54 (“The further removed a characteristic is from the actual cause of loss, the more questionable its use becomes. In these cases, either a characteristic is a proxy factor for a variable that is much harder to identify or measure or insurers are using a characteristic as a measure of risk simply for convenience, both of which are problematic motivations from a social acceptability perspective.”).

<sup>138</sup> Ronen Avraham, *Discrimination and Insurance*, in THE ROUTLEDGE HANDBOOK OF THE ETHICS OF DISCRIMINATION 340 (Kasper Lippert-Rasmussen ed., 2018) (“Sometimes, however, protection from discrimination is given even to mutable traits such as religion . . . .”); Avraham et al., *supra* note 45, at 216 (“According to the Court, suspect classifications can be identified by virtue of having four factors in common: (1) there is a history of discrimination against the group in question; (2) the characteristics that distinguish the group bear no relationship to the group members’ ability to contribute to society; (3) the distinguishing characteristics are immutable; and (4) the subject class lacks political power. Applying these criteria, the Court has identified three characteristics—race, religion, and national origin—that are considered suspect characteristics and thus receive the highest level of scrutiny, known as strict scrutiny. In addition, the Court has also identified a class of “quasi-suspect” characteristics (to date limited to gender and illegitimacy of birth) that receive an intermediate level of judicial scrutiny. Given the criteria cited above, these judicial categories appear to be meant to provide protection for groups who not only have been habitually and unjustifiably discriminated against, but who also lack the political power to do anything about it. Although these Constitutional principles obviously do not apply to insurers—who are not public actors, and thus not subject to the Equal Protection Clause—they describe broad principles that could be applied to insurers via state antidiscrimination law.”); Avraham et al., *supra* note 3, at 24–25 (“Correspondingly, gender – the next most heavily regulated characteristic in state insurance regulation – is subject to similar, though slightly less robust, federal anti-discrimination protections than the big three. Both Title VII and Title VIII prohibit discrimination on the basis of gender to the same extent that they prohibit discrimination on the basis of race, national origin, and religion.”).

<sup>139</sup> West, *supra* note 115, at 695; SCHAUER, *supra* note 43, at 153 (“For some the prohibition on gender-based generalizations is a product of a desire to prevent the subordination of women and to compensate for its past effects. For others the prohibition stems from the importance of guarding against dividing a society by

justice, and anti-prejudicial fairness, the use of sex/gender in auto insurance classifications does not comport with society's expectations of fairness and justice.<sup>140</sup>

## VI. BARRIERS TO IMPLEMENTING PRACTICES PROHIBITING THE USE OF SEX/GENDER

There have been many barriers influencing the reasons why banning the use of sex/gender in automobile insurance premium pricing has not yet been successful throughout the entire country. These include legislative avoidance, lobbyist actions, and misguided ideas about the cost of implementation.

### A. LEGISLATIVE AVOIDANCE

Legislators may shy away from combating the use of sex/gender in automobile insurance premium pricing because of a lack of social support and fear that they may not be reelected or supported by constituents who do not support advocacy efforts for non-binary individuals.<sup>141</sup> Persons who are transgender and nonbinary risk adverse reactions and even violence when

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gender (and thus isolating the socially nondominant gender) in the same way we think it important to guard against dividing it by race.”).

<sup>140</sup> Christia Spears Brown & Rebecca S. Bigler, *Children's Perceptions of Gender Discrimination*, 40 DEV. PSYCH. 714, 714 (2004) (“As racial and gender biases have become less socially acceptable in this country, discriminatory actions have become increasingly subtle and ambiguous, requiring individuals to make attributions about the motivations of others on the basis of situational information.”).

<sup>141</sup> Anna Brown, *Republicans, Democrats Have Starkly Different Views on Transgender Issues*, PEW RSCH. CTR. (Nov. 8, 2017), <https://www.pewresearch.org/fact-tank/2017/11/08/transgender-issues-divide-republicans-and-democrats/>; Ola Adebayo, *The contagion sweeping the nation: Anti-trans legislation*, WASH. U. ST. LOUIS INST. PUB. HEALTH (Apr. 25, 2022), <https://publichealth.wustl.edu/the-contagion-sweeping-the-nation-anti-trans-legislation/>; Matt Laviertes & Elliot Ramos, *Nearly 240 Anti-LGBTQ Bills Filed in 2022 So Far, Most of Them Targeting Trans People*, NBC NEWS (Mar. 20, 2022, 6:00 AM), <https://www.nbcnews.com/nbc-out/out-politics-and-policy/nearly-240-anti-lgbtq-bills-filed-2022-far-targeting-trans-people-rcna20418>; Avraham et al., *supra* note 3, at 3–4 (“One would expect that much of the variation in state anti-discrimination laws depends on state-specific circumstances like the preferences of the constituents regarding questions of discrimination, the ideology of the legislature, the strength of the insurance lobby, and a host of other socio-economic factors that are unique to each state.”).

trying to voice their concerns, so advocacy and interests might be muted.<sup>142</sup> Additionally, because of the lack of transgender and nonbinary representation in legislatures at both federal and state levels, there are few powerful players who personally identify with the need to advance this important concern.<sup>143</sup> Insurance companies themselves are reluctant to offer innovative products out of fear of attracting extra scrutiny from regulators.<sup>144</sup> Similarly, politicians may be reluctant to advocate for change out of fear of gaining a negative place in the political limelight.<sup>145</sup>

## B. LOBBYING

Many powerful lobbyists who are in favor of using sex/gender in automobile insurance premium costs have been successful at persuading legislators to maintain the current status quo.<sup>146</sup> Lobbyists claim that gender

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<sup>142</sup> Walter Liszewski, J. Klint Peebles, Howa Yeung & Sarah Arron, *Persons of Nonbinary Gender — Awareness, Visibility, and Health Disparities*, 25 NEW ENG. J. MED. 2391, 2391 (2018); *The Struggle of Trans and Gender-Diverse Persons*, U.N. HUM. RTS. <https://www.ohchr.org/en/special-procedures/ie-sexual-orientation-and-gender-identity/struggle-trans-and-gender-diverse-persons> (last visited Jan. 28, 2023).

<sup>143</sup> Jami Kathleen Taylor, *Transgender Identities and Public Policy in the United States: The Relevance for Public Administration*, 39 ADMIN. & SOC'Y 833, 836 (2007) (“Public policy toward transgender identity is incoherent for several reasons. Perhaps most important, there has been legislative avoidance of these issues.”).

<sup>144</sup> Jason E. Bordoff & Pascal J. Noel, *Pay-As-You-Drive Auto Insurance: A Simple Way to Reduce Driving-Related Harms and Increase Equity*, BROOKINGS INST. 1, 18 (2008).

<sup>145</sup> David A. Marcello, *The Ethics and Politics of Legislative Drafting*, 70 TUL. L. REV. 2437, 2449 (1996) (discussing how using gender-neutral language in legislative drafting is highly politicized; “Drafting to eliminate gender-based references is an intensely ‘political’ issue for some commentators in the scholarly literature with strong opinions both for and against the proposition.”).

<sup>146</sup> Wortham, *supra* note 80, at 366 n.78; Sharp, *supra* note 82, at 235; An Act Limiting Private Passenger Nonfleet Automobile Insurance Underwriting Factors and Increasing the Motor Vehicle Minimum Amount of Proof of Financial Responsibility For Property Damage, H.B. No. 6866, (2015); An Act Prohibiting Insurance Companies From Using Sex or Gender Identity or Expression As A Factor in Underwriting or Rating Private Passenger Nonfleet Auto Insurance Policies, H.B. No. 7263, (2019); Nancy Egan, *Banning the Use of Gender in Auto Insurance Pricing Could Impact Women* | Opinion, DEL. ONLINE (Apr. 4, 2022), <https://www.delawareonline.com/story/opinion/2022/04/04/banning-gender-auto-insurance-pricing-could-raise-rates-women/7243060001/>; Ryan, *supra* note 84, at 762 (“The insurance lobby has maintained that sex-based distinctions are needed to ensure cost-based pricing.”).



and sex classifications should be permitted in automobile insurance pricing determinations, citing justifications such as greater market stability through presentations of suspect statistical evidence.<sup>147</sup> Other lobbyists that do not support gender-affirming legislative efforts do so to further conservative and religious interests.<sup>148</sup> Lobbyists on behalf of ill-informed insurance companies also advocate for not moving the needle on this hot-button topic.<sup>149</sup> Though statistical justifications may be cited as a reason to avoid reclassification, that statistical evidence is indeed suspect.<sup>150</sup> When considering the broader array of gender identities that are now understood, statistical justifications fall flat, and financial concerns alone should not be the only consideration.

### C. MARKET COMPETITION

With respect to competition and market stability, these too are suspect justifications for retaining sex/gender as classification groupings. Competition with other insurance companies may actually be enhanced through the prohibition of sex/gender as classification groupings because companies could instead base premium costs on more accurate classifiers and compete more aggressively with other companies. By using risk factor classifications that the policyholder can counteract by implementing safer driving practices, the cost of insurance as a whole can be decreased by limiting individual risky behaviors.<sup>151</sup> Some supporters of the use of

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<sup>147</sup> Wortham, *supra* note 80, at 407 (“Promoting desirable competition requires not only eliminating barriers in the regulatory structure but also sufficient market information to enable insurance consumers to comparison shop.”); Sharp, *supra* note 82, at 252 (“During the outcry over the Fair Insurance Practices Act and employment-related cases, insurance lobbyists asserted that abandonment of gender-based actuarial tables would result in financial ruin of the insurance industry.”); Gaulding, *supra* note 15, at 1678 (“Guidelines written for underwriters contribute to the suspicion shared by anti-discrimination proponents that underwriters’ ‘actuarial facts’ are really just subjective opinions.”).

<sup>148</sup> Lavietes & Ramos, *supra* note 141 (“LGBTQ advocates and political experts say the uptick in state bills is less about public sentiment and more about lobbying on behalf of conservative and religious groups.”).

<sup>149</sup> Carney & Hardigree, *supra* note 119, at 14 (“In America today, the use of gender by insurance companies to discriminate is strongly defended by the insurance industry.”).

<sup>150</sup> See *supra* Section V.b.

<sup>151</sup> Wiegers, *supra* note 35, at 167 (“As a rule, however, some of the variables generally considered in relation to automobile insurance are potentially or functionally more controllable than others. Mileage and the driver’s record (particularly the record of traffic convictions), for example, do make it possible for an applicant to improve his or her predictive assessment by curtailing discretionary

sex/gender in automobile insurance claim that its use supports market stability.<sup>152</sup> The claim suggests that if sex/gender were not used, it would cause unisex pricing that would end up costing women more and men less.<sup>153</sup> As a result, the theory goes, women would feel unfairly charged and would stop purchasing automobile insurance.<sup>154</sup> This would lead to an insurance market highly saturated with high-risk individuals not offset by lower risk individuals and would lead to market collapse.<sup>155</sup> However, this adverse selection risk is unrealistic because automobile insurance is compulsory for all legal drivers.<sup>156</sup> This concern is also unrealistic because it has not been supported by anything other than conjecture that does not take into account the many other variables at play that are and can be used to define insurance risk and costs.<sup>157</sup> The concerns that insurance companies and lobbyists have against changing a system that does not

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driving or driving behaviour that is likely to increase the probability of an accident.”); Gardner & Marlett, *supra* note 32, at 59 (“When bad drivers are charged higher rates, they have an incentive to improve their driving.”).

<sup>152</sup> Ryan, *supra* note 84, at 756 (“Critics of unisex insurance claim that prohibiting classification by sex disrupts economic efficiency.”).

<sup>153</sup> *Id.* (“In automobile insurance, for example, critics claim that imposition of unisex insurance will cause women’s rates to rise unnaturally in proportion to their risk.”).

<sup>154</sup> *Id.* (“Those who are under-charged will buy more, and those who are overcharged will buy less. This process would lead to further market distortions and force insurers to leave the market because of rising costs.”).

<sup>155</sup> *Id.*; Avraham et al., *supra* note 3, at 26 (“[Automobile insurance lines are] relatively less susceptible to adverse selection than other lines of coverage, giving the state more leeway to prohibit discrimination without triggering adverse selection.”).

<sup>156</sup> Wortham, *supra* note 5, at 888 (“If automobile insurance is mandatory, the adverse selection problem is likely less severe although studies show enforcement of mandatory schemes is difficult.”); Avraham et al., *supra* note 3, at 11 (“Third, risk-classification regulation is not likely to produce adverse selection when the purchase of minimum insurance policies is legally mandated. In these settings, low-risk individuals are legally compelled to remain within the insurance pool and cross-subsidize high-risk individuals.”).

<sup>157</sup> Blake, *supra* note 94, at 1488–89 (“Some worry that insurers overinflate concerns about adverse selection and moral hazard to advance whatever classification they want.”); Wiegers, *supra* note 35, at 179 (“It is not apparent that the private market for automobile insurance coverage would collapse if the use of the variables of age, sex, and marital status was proscribed . . .”); Ryan, *supra* note 84, at 759 (“Likewise, the insurance argument of predicted market imbalances does not apply to automobile insurance because it fails to account for the substitution of other rating variables. If automobile rates were adjusted to reflect valid differences in insurable risk, rather than left artificially neutral, no unfair subsidization between classes would result.”).

allow the use of sex/gender in premium cost calculations are not as harmful as suggested.<sup>158</sup> Further, market stability would not be affected at all if all states and/or all insurance companies adopted the ban against the use of sex/gender in automobile insurance premium costs.<sup>159</sup>

#### D. COST OF CHANGE

Many advocates for the use of sex/gender as a basis for automobile insurance premium costs often cite the cost of implementing this change as strong support for maintaining the current system. One aspect of this is that supporters of the use of sex/gender classifications incorrectly believe that women would be harmed by prohibiting the use of sex/gender. However, this is not always the case, and if other measures that more accurately reflect individual risk were used, it would be fairer to all drivers and would lower costs collectively.<sup>160</sup> Likewise, through subsidization and

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<sup>158</sup> Blake, *supra* note 94, at 1456 (The law undergirds actuarial fairness for one primary reason—it thinks it is necessary to do so in order to protect insurers and their important role in society. But leading insurance scholars are not so sure that this is necessary. In a forthcoming article, Professor Tom Baker draws from the development of insurance runoff markets to suggest that insurers don't need as much safeguarding as the law allows. His work suggests that, in the face of great uncertainty in different times in history, insurers have found ways to make do.”).

<sup>159</sup> Cicero, *supra* note 65, at 266–67 (“The state legislatures are uniquely able to incorporate new standards of discrimination into existing insurance regulatory statutes, thereby minimizing the destabilization of the system. Even though multiple state bills can lead to a patchwork of inconsistent standards, once a few states with large insurance markets pass legislation eliminating sex discrimination in insurance, the industry may find it cheaper to adopt a consistent method of operation and resign itself to comprehensive national legislation.”).

<sup>160</sup> *Id.* at 263 (“Under current insurance practices, the lower-risk sex is now being rewarded for possessing a gender characteristic that it never actually earned. Similarly, under current practices, the higher-risk sex is not getting all the insurance it deserves solely because of the fortuity of belonging to the higher-risk sex. Furthermore, if unisex insurance leads to the replacement of sex classifications by sex-neutral factors within the control of the insured (such as smoking), then any gap between the price and cost of insurance should be narrowed. Precisely because these sex-neutral rating factors are controllable, their use provides an incentive to reduce risks, thereby reducing the costs of insurance for the entire society.”); Ayuso et al., *supra* note 73, at 9 (“Our results show that once we have information about a policyholder’s driving pattern and vehicle usage, then knowing whether the driver is a man or a woman becomes irrelevant. In other words, driving patterns and vehicle usage can substitute gender as a rating variable in the context of *PAYD* [*Pay As You Drive*] insurance.”); Edlin, *supra* note 68, at 5; Ryan, *supra* note 84, at 759 (“The substitution of rating factors would also refute the cost arguments of unisex insurance opponents.”).

incongruency in application within the insurance market, women are already forced to pay more than their share of risk.<sup>161</sup> Therefore, this justification holds little weight. If banning the use of sex/gender in automobile insurance premium pricing was banned on a national level, this too would neutralize the cost concerns.<sup>162</sup>

Another consideration regarding the cost of change is the idea that shifting to a different system would create increased costs due to logistical implementation changes.<sup>163</sup> However, the actual costs associated with the change in classification system are likely to be minimal in the long run, especially since changes are required in a growing number of states where national insurance companies do business.<sup>164</sup> Sex/gender has historically been an inexpensive way of classifying insurance policyholders.<sup>165</sup> Previously, it may have been cost-prohibitive to use certain metrics, such as miles driven or driving behaviors; however, now with the use of telematics and other technologic advances, those barriers are no longer salient.<sup>166</sup>

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<sup>161</sup> Butler et al., *supra* note 36, at 408 (“Insurers who offer as a credible argument against unisex pricing that lowering men’s sex-divided prices to a unisex level would force women to subsidize men’s higher costs can hardly deny that this threatened subsidization already exists, as described above.”).

<sup>162</sup> Avraham et al., *supra* note 3, at 12 (“Thus, larger and more comprehensive insurance mandates will tend to reduce the risk of adverse selection more than minimal insurance mandates.”).

<sup>163</sup> Ryan, *supra* note 84, at 756 (“The most controversial aspect of proposed unisex legislation is the costs of such a wholesale change in the insurance market.”); *id.* at 755 (“Insurers, for example, claim that gender-based classification schemes are actuarially valid, and that the proposed legislation will create adverse economic effects.”).

<sup>164</sup> Wiegers, *supra* note 35, at 186 (“Alternative variables will impose additional costs of usage and enforcement upon consumers of insurance, though these costs may not be significant in the long run.”); Bordoff & Noel, *supra* note 144, at 16 (“These monitoring costs are borne by firms and their customers, but the benefits spill over to other insurance companies, other drivers, and society as a whole. If an insurance company is able to reduce the driving of its insureds, substantial savings will accrue to other insurance companies too, insofar as their insureds are less likely to be involved in accidents if fewer vehicles are on the road.”); Edlin, *supra* note 68, at 33; Ryan, *supra* note 83, at 760 (“In addition, administrative costs of compliance with unisex legislation pose no obstacles to successful implementation of the law.”).

<sup>165</sup> West, *supra* note 115, at 683; Wiegers, *supra* note 35, at 182 (“Age and sex are generally the preferred criteria because they are easily identifiable at a low cost relative to other variables.”).

<sup>166</sup> Ma et al., *supra* note 5, at 244 (“Typical underwriting factors for auto insurance include driver characteristics such as age, gender, prior driving experience and information of vehicle, as data on those factors are easily available.”).

Likewise, because of the current understandings of sex/gender outside of the binary, the cost of additional research to cover these larger and more varied sex/gender classifications to determine the actuarial basis for costs for these individuals could instead be substituted for the cost to change to a different classification system. In the face of prejudicial anti-discrimination concerns, cost alone should not be the sole factor in consideration when the factor perpetuates the use of an unjust classification system.<sup>167</sup>

## VII. HOW THIS CHANGE COULD BE SUCCESSFUL

Effectuating a change where sex/gender would not be used as a factor to determine automobile insurance premium costs could take place through administrative agency action, adjudication, federal legislation, state legislation, or by insurance companies themselves.<sup>168</sup> To provide context, through various methods, at the time of this note, it is not permissible to use sex/gender in automobile insurance cost setting in California, Hawaii, Maine, Massachusetts, Michigan, North Carolina, and Pennsylvania.<sup>169</sup> Oregon allows gender-based pricing but requires insurers to offer a third

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Driving habits, which are often key attributes to accidents, have not been incorporated into actuarial pricing until recently simply because such data is not available and/ or the cost of obtaining such information is too high.”); Bordoff & Noel, *supra* note 142, at 15 (“Some established companies are already using monitoring technology to offer mileage discounts on insurance premiums.”). *Cf.* Ayuso et al., *supra* note 73 (emphasizing that telematics can now easily be used in automobile insurance).

<sup>167</sup> Wiegers, *supra* note 35, at 184 (“Under anti-discrimination statutes, the treatment of economic concerns has rarely been fully and coherently articulated.”); Bordoff & Noel, *supra* note 144, at 17 (“The significant discrepancy between the social and private benefits suggests that even if the benefits to the firm and its insureds do not justify an insurance company’s incurring the monitoring and plan development costs, the full social benefits would justify the costs.”).

<sup>168</sup> See generally Cicero, *supra* note 65; Shengkun Xie, Rebecca Luo & Yuanshun Li, *Exploring Industry-Level Fairness of Auto Insurance Premiums by Statistical Modeling of Automobile Rate and Classification Data*, 10 RISKS 1, 4 (2022) (“Furthermore, regulation efforts have been made to improve fairness by restricting the use of some risk factors, such as gender, eliminating gender discrimination.”).

<sup>169</sup> Charles Megginson, *Bill Banning Use of Gender for Car Insurance Rates Passes Senate*, TOWN SQUARE DELAWARE (Apr. 5, 2022), <https://townsquaredelaware.com/bill-banning-use-of-gender-for-car-insurance-rates-passes-senate/#:~:text=States%20which%20ban%20gender%20as,Michigan%2C%20North%20Carolina%20and%20Pennsylvania>.

gender option.<sup>170</sup> Colorado and Delaware are in the process of prohibiting the use of sex/gender in determining automobile insurance premium costs.<sup>171</sup>

In other states and countries, banning the use of sex/gender in insurance premiums has been implemented effectively. “[T]he Court of Justice of the European Union ruled that all insurance contracts entered on or after December 21, 2012, cannot price males and females differently. The use of gender is also prohibited in ten U.S. states and limited in 22 others.”<sup>172</sup> Recognizing that prohibitions on the use of sex/gender in insurance have been successful in these applications should strengthen support for implementing widespread change.

#### A. ADMINISTRATIVE AGENCY ACTION

The National Association of Insurance Commissioners (NAIC) and/or the state Insurance Commissioner could spearhead a change towards prohibiting the use of sex/gender in automobile insurance with recommendations or policy implications, respectively.<sup>173</sup> Currently, the NAIC functions to craft model state insurance laws and regulations, promote discourse among state regulators, and emphasize cohesion within the insurance industry.<sup>174</sup> The Supreme Court has established that an administrative agency has the authority to analyze and interpret statutes for compliance with public policy.<sup>175</sup> A recommendation from the NAIC would likely be promoted for adoption by the individual states through the advocacy of each state’s Insurance Commission/Regulator (because the members who make up the NAIC are each state’s Insurance Commissioner). Depending on the particular Insurance Commissioner and the state that the Commissioner operates in, whether or not a recommendation by the NAIC would be adopted could depend on political climate, social importance, and beliefs.<sup>176</sup> Insurance Commissioners can also independently advocate for this change because in their role they are tasked with regulating insurance company solvency and balancing that need with equity and fairness.<sup>177</sup>

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<sup>170</sup> Norman, *supra* note 46; Deventer, *supra* note 46.

<sup>171</sup> Megginson, *supra* note 169.

<sup>172</sup> Lemaire et al., *supra* note 73, at 42.

<sup>173</sup> Frees & Huang, *supra* note 97, at 10.

<sup>174</sup> Daniel Schwarcz, *Is U.S. Insurance Regulation Unconstitutional?*, 25 CONN. INS. L.J. 197, 207 (2018).

<sup>175</sup> Cicero, *supra* note 65, at 230.

<sup>176</sup> *Id.* at 228.

<sup>177</sup> *Id.* at 227.

Likewise, although each state's Insurance Commissioner is a government official charged with supervising insurance practices and regulating within their state, they are bound by balancing and sometimes competing powers. As will be mentioned in Section VII.b., *infra*, an Insurance Commissioner's decision can be questioned and even overruled through adjudication or legislation. In 2019, California's Insurance Commissioner successfully passed the Gender Non-Discrimination in Automobile Insurance Rating Regulation, which mandated that all automobile insurance companies in the state submit a plan that eliminates the use of gender as a factor used to price insurance.<sup>178</sup> The NAIC or the Insurance Commissioner can independently take up the charge and advocate for these changes, or individual policyholders can also petition the NAIC or their state Insurance Commissioner to act on their behalf.<sup>179</sup>

## B. ADJUDICATION

Different litigation approaches can be taken to address sex/gender discrimination in automobile insurance. One approach could include an extension of the administrative route whereby one sues the Insurance Commissioner for their inaction in combating current sex/gender discrimination practices.<sup>180</sup> Another approach would be to challenge insurance regulation legislation for unconstitutionality. A third approach would be to directly sue the insurance company for violating public policy and not upholding constitutional rights.<sup>181</sup> Litigation could be pursued under a theory of Equal Rights protections under the United States Constitution or similar provisions in individual State Constitutions, under a civil rights premise,<sup>182</sup> or under state or federal public accommodations laws.<sup>183</sup> Some of these approaches, or similar methods, have already been observed in some jurisdictions.<sup>184</sup>

The Supreme Court has not yet mandated the exclusion of sex/gender as a factor for discrimination in automobile insurance. However, in *City of L.A., Department of Water & Power v. Manhart* (a case about

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<sup>178</sup> Press Release, Cal. Dep't of Ins., Comm'r Issues Reguls. Prohibiting Gender Discrimination in Auto. Ins. Rates (Jan. 3, 2019) <https://www.insurance.ca.gov/0400-news/0100-press-releases/2019/release003-19.cfm>.

<sup>179</sup> Cicero, *supra* note 65, at 234–35.

<sup>180</sup> *Id.* at 235–36.

<sup>181</sup> *Id.* at 236–37.

<sup>182</sup> McCluskey, *supra* note 6, at 460–61.

<sup>183</sup> Sharp, *supra* note 82, at 236–37.

<sup>184</sup> Cicero, *supra* note 65, at 235–37; McCluskey, *supra* note 6, at 460–61; Sharp, *supra* note 82, at 236–37.

female employees suing their employer for pension discrimination), the Supreme Court did express that classification on the basis of sex preserves “traditional assumptions about groups rather than thoughtful scrutiny of individuals,” and further, that characteristics used to differentiate a class do not apply to all individuals in that respective class.<sup>185</sup> Following the reasoning in *Manhart*, even if the generalization about a class of individuals is true, it is not appropriate to apply that generalization to all of its class members, especially those whom the generalization does not represent.<sup>186</sup> *Manhart* goes further to explain that fairness should be extended to the individual and not the class itself.<sup>187</sup> Though the *Manhart* case dealt with employment discrimination, the opinion seems to suggest that prohibiting the use of sex as a classification group is not limited to only employment insurance contexts.<sup>188</sup> The reasoning in this case could also be applied to advocate for banning the use of sex/gender in automobile insurance premium determinations as well.

Similarly, in *Arizona Governing Board v. Norris*, the Supreme Court held that a classification on the basis of being male or female in the context of employer insurance costs violated Title VII of the Civil Rights Act.<sup>189</sup> This was decided even though statistics supported that females lived longer than males because equality among men and women was paramount to statistically accurate generalizations that highlighted their differences.<sup>190</sup> The United States has already seen examples of how the use of sex/gender

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<sup>185</sup> *City of L.A., Dep’t. of Water & Power v. Manhart*, 435 U.S. 702, 709 (1978); Blake, *supra* note 94, at 1470–71.

<sup>186</sup> *Manhart*, 435 U.S. at 707–08; Cicero, *supra* note 65, at 223 (“In so doing, it [the *Manhart* Court] articulated a sweeping test for establishing that a sex classification is unlawfully discriminatory under Title VII: whether the use of the classification results in “treatment of a person in a manner which but for that person’s sex would have been different.”); Wiegers, *supra* note 35, at 157 (“Decisions of human rights tribunals are replete with references to the ‘basic premise’ that persons are to be treated on the basis of ‘individual merit,’ and not as members or components of a group.”).

<sup>187</sup> *Manhart*, 435 U.S. at 709; McCluskey, *supra* note 6, at 461 (“In *Manhart*, the Court recognized that the Civil Rights Act focuses on fairness to the individual and precludes treating individuals merely as components of a group. Justice Stevens, writing for the majority states that ‘even a true generalization about the class is an insufficient reason for disqualifying an individual to whom the generalization does not apply.’ Thus, that women as a group outlive men cannot support using sex as the sole factor in a life expectancy determination. Instead, this determination should be based on individual factors.”).

<sup>188</sup> *Manhart*, 435 U.S. at 709.

<sup>189</sup> *See Ariz. Governing Comm. for Tax Deferred Annuity and Deferred Comp. Plans v. Norris*, 463 U.S. 1073 (1983); Kok, *supra* note 81, at 70–71.

<sup>190</sup> *See generally Norris*, 463 U.S. at 1073; Kok, *supra* note 81, at 70–71.



in automobile insurance premium costs has been eradicated through adjudicatory affirmation. Most notable is the Pennsylvania Supreme Court case, *Hartford Accident & Indemnity Co. v. Insurance Commissioner of the Commonwealth of Pennsylvania*, which upheld the State's Insurance Commissioner's decision to prohibit the Hartford Insurance Company's use of sex/gender in automobile insurance costs.<sup>191</sup> In that case, the Pennsylvania Supreme Court upheld the Commissioner's ban on the use of sex in automobile insurance because it was unfairly discriminatory in light of public policy and "allegedly relied upon and perpetuated traditional stereotypical roles of men and women."<sup>192</sup> The decision noted that although the insurance costs could be supported by actuarial science, the use of gender as a classification group was incongruent with the State's Rate Act which prohibited unfairly discriminatory insurance rates. Ultimately, the court held that the use of gender was unfairly discriminatory because it "failed to treat equals equally" and was invalid as a matter of public policy.<sup>193</sup> "To read the term 'unfairly discriminatory' as excluding sex discrimination would contradict the plain mandate of the Equal Rights Amendment to our Pennsylvania Constitution."<sup>194</sup>

In contrast, in *State, Department of Insurance v. Insurance Services Office*, the Pennsylvania Supreme Court affirmed a lower court decision invalidating the prohibition of sex/gender, among other factors, in determining automobile insurance costs.<sup>195</sup> The court reasoned that sex was not the only factor being used to base insurance costs and supported the definition of unfair discrimination as that which is not supported by actuarial data. Seeing these two contrasting outcomes shows why judicial interpretation is not the most effective way to combat sex/gender discrimination in automobile insurance. Depending on a state's interests at any given time, sex/gender discrimination may not be interpreted in the way that this note supports. Likewise, states could have dissimilar outcomes that could even further complicate insurance regulation in our increasingly mobile country.

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<sup>191</sup> See *Hartford Accident & Indem. Co. v. Ins. Comm'r of Commonwealth of Pa.*, 482 A.2d 542 (Pa. 1984).

<sup>192</sup> *Id.* at 548; Wieggers, *supra* note 35, at 168.

<sup>193</sup> *Hartford Accident & Indem. Co.*, 482 A.2d at 544.

<sup>194</sup> Richard A. Miller, *Discrimination by Gender in Automobile Insurance: A Note on Hartford Accident and Indemnity Co. v. Insurance Commissioner*, 23 DUQ. L. REV. 621, 623 (1985).

<sup>195</sup> *State, Dept. of Ins. v. Ins. Servs. Off.*, 434 So. 2d 908, 909–10 (Fla. Dist. Ct. App. 1983).

## C. FEDERAL LEGISLATION

Federal legislation in this context has not yet mandated a ban on the use of sex/gender in automobile insurance premium price determinations. The Nondiscrimination in Insurance Act proposed in 1983 would have forbidden discrimination in insurance on the basis of race, color, religion, national origin, and sex.<sup>196</sup> Unfortunately, it was not successful at that time and still has not yet been adopted.<sup>197</sup> Following the premise that it is the federal government's obligation to intervene when a state refuses to legislate civil rights issues, because this issue can be properly classified as pertaining to civil rights, it would follow that federal legislation prohibiting the use of sex/gender in automobile insurance premiums should result.<sup>198</sup> With the current cultural focus on anti-discrimination efforts and the more comprehensive understanding of what sex/gender means, a bill such as the Nondiscrimination in Insurance Act may have more success in the present day. Currently, the only federal protections against sex/gender discrimination in insurance are in the health insurance realm, achieved through the Affordable Care Act.<sup>199</sup> A federal approach, as opposed to a state-based approach, would be desirable because it would create national cohesion, limit patchwork interpretations, and take a positive stance on combatting the national sex/gender-based discrimination problem.<sup>200</sup> Federal legislation would also likely gain more favor from insurance companies who might otherwise feel disadvantaged by incongruous regulations affecting them differently across the states.<sup>201</sup> Because all insurance companies in the country would be required to follow the same rule eliminating the use of sex/gender in automobile insurance premium pricing across the board, all insurance companies would have an even playing field.<sup>202</sup> In contrast to the lack of political

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<sup>196</sup> Sharp, *supra* note 82, at 233.

<sup>197</sup> *Id.*

<sup>198</sup> McCluskey, *supra* note 6, at 464 ("When the states refuse or neglect to legislate civil rights issues, the Federal Government is *obliged* to step in. The discrimination practiced by insurance companies limits social and economic opportunities for women to such an extent that a federal law is needed to correct the inequities which result.").

<sup>199</sup> Blake, *supra* note 94, at 1454.

<sup>200</sup> Cicero, *supra* note 65, at 258 ("A state-by-state approach would create a patchwork of regulations which would be 'administratively unfeasible for the industry to operate under.'").

<sup>201</sup> *Id.* at 265.

<sup>202</sup> *Id.* ("Federal legislation also reduces the significance of a major fear of insurance companies: self-selection out of the insurance market. . . . However, self-selection out of a market is much more likely to occur if sex classifications are eliminated state by state, rather than nationwide, because the insured can simply

support that has been evident thus far, by framing the matter as a civil rights issue, legislators may be more inclined to support a bill that would prohibit the use of sex/gender in automobile insurance policies. Regardless of political affiliation, it is unlikely that a politician would want to be viewed as acting in opposition to civil rights.<sup>203</sup>

#### D. STATE LEGISLATION

Up until the writing of this Note, most states have permitted the use of sex/gender as classifiers in automobile insurance, citing actuarial soundness as justification.<sup>204</sup> Legislative change is one effective vehicle to promote altering this practice.<sup>205</sup> Though there has been some back-pedaling, Montana, in 1983, was the first state to prohibit the use of sex-based automobile insurance pricing.<sup>206</sup> Since then, Hawaii, Maine, Massachusetts, Michigan, and North Carolina have passed laws that

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select out of the system that requires unisex rates into a system that offers lower rates for sex-based insurance. Whether, and to what extent, there would be similar self-selection out of a national market remains unclear. The broad sweep of the federal bill does have drawbacks, the most important of which is that it cannot overlay perfectly with each state's system of insurance regulation, because each state has its own standards and mechanisms for enforcement. Any gap created between the federal standard and a state standard might lead to the renewal of sex discrimination.”).

<sup>203</sup> Hatch, *supra* note 70, at 12 (“Members of Congress can be expected to be attracted to the issue. No politician wants to be considered anti- woman or anti-civil rights, whatever his party or political persuasion. A member of Congress could anticipate that a vote for the bills would gain favor with important segments of the public.”); Avraham et al., *supra* note 3, at 4 (2014) (“State legislatures will be more inclined to *prohibit* risk classification based on a characteristic (like age) to the extent that doing so would help combat (or appear to combat) illicit discrimination.”).

<sup>204</sup> Gaulding, *supra* note 15, at 1662.

<sup>205</sup> Wieggers, *supra* note 35, at 188 (“Changes to classification schemes may be best effected through automobile insurance regulatory legislation.”); Avraham et al., *supra* note 3, at 51 (“At varying points in time, states prohibit specific forms of insurance discrimination, based on current insurer practices, insurance market realities, and social norms.”).

<sup>206</sup> Sharp, *supra* note 82, at 235; Press Release, Consumer Fed’n of Am., Newly Signed Montana Law Will Raise Auto Insurance Rates for Women, Unmarried Drivers, and Widows, (Apr. 22, 2021), [https://consumerfed.org/press\\_release/newly-signed-montana-law-will-raise-auto-insurance-rates-for-women-unmarried-drivers-and-widows/](https://consumerfed.org/press_release/newly-signed-montana-law-will-raise-auto-insurance-rates-for-women-unmarried-drivers-and-widows/).

prohibit the use of sex or gender in automobile insurance rating,<sup>207</sup> and other states could adopt similar legislation. States that have constitutions with Equal Rights Amendments that prohibit discrimination on the basis of sex, gender, or gender identity would likely have the most successful transition by citing these Amendments as support for the prohibition of sex/gender in automobile insurance premium rating.<sup>208</sup>

Insurance is primarily regulated at the state level, so any legislative initiative from this perspective would fit the current regulatory structure.<sup>209</sup> Most, if not all, states have adopted the NAIC's Model Unfair Trade Practices Act, which prohibits unfair discrimination. However, individual states interpret what constitutes unfair discrimination differently.<sup>210</sup> Some states allow the use of sex/gender in automobile insurance premium classifications completely;<sup>211</sup> others allow it only if it is actuarially sound;<sup>212</sup> and still others prohibit it completely, whether or not supported by actuarial studies.<sup>213</sup> I would advocate that all states adopt the notion that

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<sup>207</sup> HAW. REV. STAT. ANN. § 431:10C-207 (West 2023); 211 MASS. CODE REGS. 79.04; ME. REV. tit. 24-A, § 2169-B; MICH. COMP. LAWS ANN. § 500.2111 (West 2023); N.C. GEN. STAT. ANN. § 58-3-25 (West 2023).

<sup>208</sup> CONN. CONST. art. I, § 20 ("No person shall be denied the equal protection of the law nor be subjected to segregation or discrimination in the exercise or enjoyment of his or her civil or political rights because of religion, race, color, ancestry, national origin, sex or physical or mental disability."); Ryan, *supra* note 83, at 770 ("In *Marchiorov.Chaney*, the court held that the passage of the state ERA required that *no* sexual classifications would be tolerated regardless of the governmental interest involved. Such an interpretation of state equal rights provisions would clearly prohibit the current disparate treatment of men and women in automobile insurance. Furthermore, such a reading is correct since any other, more limited, interpretation does not do justice to the sweeping mandatory language of the majority of state equal rights provisions. Thus, additional state protection from gender-based distinctions, through the application of strict scrutiny or a more penetrating standard of review, would enhance the success rate of challenges to automobile insurance rating practices."); *Hartford Accident & Indem. Co. v. Ins. Comm'r of Commonwealth of Pa.*, 482 A.2d 542, 550 (Pa. 1984).

<sup>209</sup> Cicero, *supra* note 65, at 266.

<sup>210</sup> Gaulding, *supra* note 15, at 1656–57.

<sup>211</sup> *Nat'l Org. for Women v. Mut. of Omaha Ins. Co., Inc.*, 531 A.2d 274 (D.C. App. 1987) (holding that Human Rights Act did not proscribe use of gender-based categories in setting insurance rates).

<sup>212</sup> *State, Dep't. of Ins. v. Ins. Servs. Off.*, 434 So. 2d 908, 913 (Fla. Dist. Ct. App. 1983); Wagener, *supra* note 82, at 380.

<sup>213</sup> HAW. REV. STAT. ANN. § 431:10C-207 (West 2023); 211 MASS. CODE REGS. 79.04; ME. REV. tit. 24-A, § 2169-B; MICH. COMP. LAWS ANN. § 500.2111 (West 2023); N.C. GEN. STAT. ANN. § 58-3-25 (West 2023).

sex/gender discrimination, whether actuarially supported or not, is prejudicially unfair discrimination and should be prohibited.

#### E. INSURANCE COMPANY POLICY

There are many reasons why insurance companies themselves may be interested in leading the effort to prohibit the use of sex/gender in automobile insurance premium calculations. Insurers can potentially reap many benefits by eliminating the use of sex/gender in automobile insurance cost ratings. One area that would likely improve by eliminating the use of sex/gender would be an insurance company's marketability. Also, by using other, more accurate markers, insurance companies could cut costs related to loss and accidents. Insurance companies would also be incentivized to implement this change themselves to avoid litigation with expensive payouts and bad publicity.<sup>214</sup> It would also be wise for insurance companies to act proactively to effectuate this change in a way that they can control rather than having to act post hoc in response to future possible legislative impositions.

##### 1. Marketability

One reason that insurance companies may want to stand at the forefront of efforts to remove sex/gender as automobile insurance premium justifications would be to enhance the marketability of their brand. By acting to remove sex/gender as classifications to justify premium costs for automobile insurance, companies can be viewed as more inclusive.<sup>215</sup> Many companies have begun examining and changing their sex/gender policies and marketing to enhance their Diversity, Equity, and Inclusion (DE&I) initiatives and create more welcoming environments and company

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<sup>214</sup> Avraham et al., *supra* note 3, at 8 (“Finally, the case for regulation is relatively strong if insurers are refraining from using problematic policyholder characteristics because they fear the potential reputational or regulatory consequences of doing so.”).

<sup>215</sup> *Creating Inclusive Forms*, PRINCETON GENDER & SEXUALITY RES. CTR., <https://www.gsrc.princeton.edu/creating-inclusive-forms> (last visited Jan. 10, 2023); *Asking About Gender and Sex on Web Forms*, WASH. U. IN ST. LOUIS DIVERSITY & INCLUSION (2023), <https://diversity.wustl.edu/framework/advisory-best-practice-groups/best-practices/> (last visited Jan. 12, 2023); Camilla Rydzek, *Gen Z Fashion Report Shows 65% Want “Gender Neutral” Search Option Online*, THE INDUSTRY, (Mar. 1, 2022), <https://www.theindustry.fashion/gen-z-fashion-report-shows-65-want-gender-neutral-search-option-online/> (“The Gen Z Fashion Report by UNiDAYS has revealed that almost two thirds (65%) of Gen Z's think their shopping experience would be improved if there was a ‘gender neutral’ search option online.”).

branding.<sup>216</sup> Consumers as a whole have become more interested in giving their business to companies that have inclusive advertising and campaigning,<sup>217</sup> and insurance companies could likely profit from taking advantage of this approach as well. Despite the enormous positive societal outcomes that an insurance company would foster by removing sex/gender from automobile insurance policy premium costs determinations, when focusing on just the financial incentives, there is evidence that consumers would be attracted to a more inclusive style of marketing.<sup>218</sup> Though

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<sup>216</sup> Elena Prokopets, *Gender-Neutral Marketing: It's More Than A Trend*, LATANA (May 3, 2022), <https://latana.com/post/three-brands-gender-neutral/> (“The affinity for gender-neutral products and marketing is already prevalent in apparel, cosmetics, toys, and FMCG segments, among others.”); Imogen Watson, *The Future is Fluid: Is the Age of Gender Neutral Marketing Upon Us?*, THE DRUM (Jan. 11, 2021), <https://www.thedrum.com/news/2021/01/11/the-future-fluid-the-age-gender-neutral-marketing-upon-us>; *Start Using Inclusive Language with Your Team and Customers*, ZENDESK BLOG (Mar. 3, 2021), <https://www.zendesk.com/blog/start-using-inclusive-language/#:~:text=Inclusive%20language%20also%20builds%20stronger,products%20that%20address%20their%20needs>; Ashley Stahl, *What's To Come In 2021 For Diversity, Equity and Inclusion in the Workplace*, FORBES, (Apr. 14, 2021, 9:00 AM), <https://www.forbes.com/sites/ashleystahl/2021/04/14/whats-to-come-in-2021-for-diversity-equity-and-inclusion-in-the-workplace/?sh=73afde337f26>; Nora Zelevansky, *The Big Business of Unconscious Bias*, THE NEW YORK TIMES (Nov. 20, 2019), <https://www.nytimes.com/2019/11/20/style/diversity-consultants.html>.

<sup>217</sup> Christina Brodzik, Nathan Young, Nikki Drake & Sarah Cuthill, *Authentically Inclusive Marketing: Winning Future Customers with Diversity, Equity, and Inclusion*, DELOITTE INSIGHTS (Oct. 19, 2021), <https://www2.deloitte.com/us/en/insights/topics/marketing-and-sales-operations/global-marketing-trends/2022/diversity-and-inclusion-in-marketing.html> (“Consumers—especially the youngest generations—are expecting more from these messages than just details about the latest seasonal sale. Rather, they are questioning whether a brand supports diversity and inclusion both publicly *and* behind the camera—and this focus is becoming increasingly important to brands as well.”); Prokopets, *supra* note 213 (“48% of Gen Z consumers and 38% of consumers in other generations value brands that don’t classify products by gender.”).

<sup>218</sup> Brodzik et al., *supra* note 217 (“As the consumer population diversifies—by race and ethnicity, sexual orientation, or differences in ability, for example—it’s imperative for brands to authentically reflect a range of backgrounds and experiences within their messaging if they expect to effectively connect with future customers. In our survey of 11,500 global consumers, we found the youngest respondents (from 18 to 25 years old) took greater notice of inclusive advertising when making purchase decisions. . . . [H]igh-growth brands (defined as those with annual revenue growth of 10% or more) are more frequently establishing key

research is lacking specifically on automobile insurance marketing that is inclusive of all gender and sex identities, when reviewing data from other fields, it seems to follow that it would also be beneficial for the automobile insurance industry to implement more inclusive changes as well.<sup>219</sup> Some may advocate that a better marketing strategy than eliminating sex/gender altogether would be to allow applicants a broad array of options or write-in options to describe their own sex/gender.<sup>220</sup> Though this might be supportive in a social sense, by affirming gender fluidity and the broad array of classifications beyond the male/female binary, using a wider sex/gender classification system for automobile insurance premium pricing would miss the mark completely. Because of the fluidity of gender,<sup>221</sup> the lack of clear definitions and understanding of the terms sex and gender,<sup>222</sup> heterogeneity in self-identification,<sup>223</sup> and the continuing evolution of

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performance metrics for diversity, equity, and inclusion (DEI) objectives than their lower-growth competitors.”); Quy Ma, *Why Brands Should Embrace Gender-Neutral Marketing*, MEDIUM (Oct. 10, 2020), <https://medium.com/swlh/why-brands-should-lean-in-to-gender-neutral-product-marketing-2f1bd0cef516> (“Savvy businesses that can tap into this growing market will be ahead of the competition or risk facing a future where news articles frequently detail which industries do Millennials and Gen Z kill.”).

<sup>219</sup> *Start Using Inclusive Language with Your Team and Customers*, ZENDESK BLOG (Mar. 3, 2021), <https://www.zendesk.com/blog/start-using-inclusive-language/#:~:text=Inclusive%20language%20also%20builds%20stronger,products%20that%20address%20their%20needs>; Andrew McCaskill, *Inclusive Language in Marketing Isn't Just Important – It's Essential*, LINKEDIN, (Sept. 28, 2021), <https://www.linkedin.com/business/marketing/blog/diversity/inclusive-language-in-marketing-isnt-just-important-its-essential>; Ma, *supra* note 218 (“These consumers will reward brands that are more gender-inclusive financially.”).

<sup>220</sup> Alexander Lussenhop, *Beyond the Male/Female Binary: Gender Equity and Inclusion in Evaluation Surveys*, 43 J. OF MUSEUM EDUC. 194, 200 (2018); Schmitz, *supra* note 82, at 474. (“In contrast, other feminists highlight gender differences and warn that a focus on gender-neutrality may impede women’s advancement in the marketplace. They propose that the law should recognize gender differences and provide protections that address these differences.”).

<sup>221</sup> Xavier Sabastian, *Car Insurance for Transgender and Non-Binary Applicants*, WAY.COM (2023), <https://www.way.com/blog/car-insurance-for-trans-and-non-binary-applicants/> (“However, one component of the application — choosing a gender — might be particularly difficult for transgender or non-binary drivers. This is because non-binary and trans persons frequently lack the flexibility to choose whose gender they identify with, something that others take for granted.”).

<sup>222</sup> See generally Thorne et al., *supra* note 28.

<sup>223</sup> *Id.* at 149 (“gender has come to be seen as heterogeneous in nature rather than a dichotomy of two opposites.”).

understanding of the many facets of the sex and gender spectrum,<sup>224</sup> it would be nearly impossible to perform research that would justify actuarial distinctions based on a wider classification of sex/gender options.<sup>225</sup> Though it may be useful in a marketing campaign for an insurance company to allow individuals the option to self-identify their sex or gender on an application for automobile insurance, because of its limited actuarial justification, I would not advocate its use to support price distinctions based on a wider variety of sex/gender options.<sup>226</sup> Instead, automobile insurance applications should allow applicants to self-identify their sex, gender, and/or pronouns in a way that is personally affirming and inclusive, but this information should not be used to determine premium costs.

## 2. Financial Gain

By removing sex/gender classifications from premium cost determinations, automobile insurance companies could actually increase their financial gains. Insurance companies would be able to replace sex/gender with more actuarially justifiable classification systems that better anticipate risk and would, therefore, increase profits.<sup>227</sup> Some

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<sup>224</sup> *Guide to Being an Ally to Transgender and Nonbinary Young People*, THE TREVOR PROJECT, <https://www.thetrevorproject.org/resources/guide/a-guide-to-being-an-ally-to-transgender-and-nonbinary-youth/>; Thorne et al., *supra* note 28, at 139.

<sup>225</sup> Will J. Beischel, Zach C. Schudson, Rhea Ashley Hoskin & Sari M. van Anders, *The Gender/Sex 3×3: Measuring and Categorizing Gender/Sex Beyond Binaries*, PSYCH. SEXUAL ORIENTATION & GENDER DIVERSITY 1, 2 (Feb. 24, 2022).

<sup>226</sup> Lauren Bishop, *Gender and Sex Designations for Identification Purposes: A Discussion on Inclusive Documentation for a Less Assimilationist Society*, 30 WIS. J. L. GENDER & SOC'Y 131, 155 (2015) ("In the alternative, perhaps sex/gender designations should be scrapped altogether. We should ask: what purpose do they serve? If the purpose is to ensure that travelers are indeed who they portray themselves to be, alternative methods, such as photographs, can serve that function. Passport sex and gender designations are too constraining, not to mention long-lasting to be accurate, effective, and nondiscriminatory."); Lussenhop, *supra* note 220, at 195 ("Thus, if there is no clear use for data, or if you have been collecting data and not using them, they are not necessary to collect."); Avraham et al., *supra* note 3, at 7 ("Second, the case for regulation may be slightly stronger when the reason that carriers do not use a policyholder characteristic is because the cost of determining and verifying the characteristic outweighs the benefits of a more refined classification scheme.").

<sup>227</sup> Sharp, *supra* note 82, at 253 ("In areas such as automobile insurance where sex is only one of many risk predictors, eliminating sex as a factor would entail marginal expense. Some critics have argued that gender is at best a crude predictor



suggested alternatives would be to consider measures such as miles driven, years driven, driving history, or even using telematics to measure an individual's specific risk to justify premiums for automobile insurance.<sup>228</sup> By using more direct risk classifications to calculate premium costs, insurance companies would be better able to calculate costs, thereby minimizing loss and adverse selection risks.<sup>229</sup> This paper does not go so far as to decide which is the best replacement factor, but does identify that there are many reasonable alternatives. Rather than continue to use actuarially suspect sex/gender (indirect/proxy) classifications, insurance

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of longevity, and that adjustment to other more relevant factors would be profitable to the industry. Abandoning the use of sex-based predictors might even act as a catalyst for new, more accurate methods of risk classification. Finally, consumers rather than insurers will bear a large portion of the costs incurred through such research and in shifting to new risk predictors.”); Larisa Yuzvovich, Elena Knyazeva, Elena Razumovskaya & Vadim Katochikov, *Vehicle Insurance Financial Mechanism*, 7 REV. EUR. STUDS. 99, 101 (2015) (“Financial mechanism directly affects the result of the enterprise work. To be exact, well-formed financial mechanism elements of the insurance company affect the economic performance of the company. One of the most important elements of insurance company’s financial mechanism, affecting the economic results of the enterprise, is well-chosen insurance premium rate for each individual insurant.”); Marianne Bonner, *How Insurers Perform a Risk Assessment*, THE BALANCE, <https://www.thebalancemoney.com/how-insurers-assess-your-risks-4159708> (Mar. 9, 2021) (“Loss prediction is an important part of the rate development process. Insurers need the ability to estimate losses accurately so they can develop rates that reflect the risks they’re insuring.”); Rosenfield, *supra* note 3, at 109 (“Instead, auto insurance premiums must be based primarily upon three rating factors in decreasing order of importance: a motorist’s driving safety record, the number of miles he or she drives each year, and the motorist’s years of driving experience.”); McCluskey, *supra* note 6, at 467.

<sup>228</sup> Bordoff & Noel, *supra* note 144, at 20; Butler & Butler, *supra* note 30, at 200 (“Surcharges or discounts based on driver records are politically promoted as a substitute for classes such as sex and territory.”); Ayuso et al., *supra* note 73, at 1 (“We conclude that no gender discrimination is necessary if telematics provides enough information on driving habits.”).

<sup>229</sup> West, *supra* note 115, at 694 (“In addition, this inter-company competition may result in the implementation of other factors, such as mileage, as discussed above, so that insurers create more accurate risk assessment and become more competitive in the marketplace. Historically, public markets have been first to effectively introduce genderless rating systems; however, private markets may ultimately be the best place to see this accomplished.”); Cem Dilmegani, *Insurance Pricing: Determination & New Methods in 2023*, AIMULTIPLE, <https://research.aimultiple.com/insurance-pricing/> (Feb. 9, 2023) (“The most important variable cost for insurance companies is the determination of the cost of risk.”); Antonio & Valdez, *supra* note 9, at 189.

companies could substitute factors that better predict risk and, therefore, would be able to more accurately price policies and minimize waste in revenue from unanticipated loss.<sup>230</sup>

Additionally, by using alternative classifications, such as miles driven or driving history, rather than sex/gender, policyholders would have the ability to manipulate their classification to provide for safer outcomes<sup>231</sup> and policyholders would have a financial incentive to engage in less risky behaviors because it would be reflected in lower premium costs. Insurance companies would also profit by not having to pay out for those accident-related losses. Although sex/gender identities are not as rigid as they once were believed to be, the ability to ‘control’ or ‘manipulate’ one’s own gender or sex does not decrease the risk of an automobile accident.<sup>232</sup> Alternatively, some individuals have taken advantage of systems that still use sex/gender to price automobile insurance premiums.<sup>233</sup> By removing sex and gender as determinants of premium costs, applicants would not be able to modify their insurance applications in the hopes of “gaming the system” to get a cheaper policy.<sup>234</sup> This would cut down on insurance companies’ losses due to misrepresentations and inaccurate label manipulations.

### 3. Litigation Risk

By removing sex/gender as a factor used to justify automobile insurance premiums, insurance companies would potentially limit their exposure to contentious litigation. Currently when applying for automobile

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<sup>230</sup> West, *supra* note 115, at 694 (“In addition, this inter-company competition may result in the implementation of other factors, such as mileage, as discussed above, so that insurers create more accurate risk assessment and become more competitive in the marketplace. Historically, public markets have been first to effectively introduce genderless rating systems; however, private markets may ultimately be the best place to see this accomplished.”); Medders et al., *supra* note 13, at 7–9.

<sup>231</sup> Rosenfield, *supra* note 3, at 109–10.

<sup>232</sup> Blake, *supra* note 94, at 1488–89 (“Insurance classification based on immutable traits like race or sex are particularly critiqued for efficiency reasons; such classifications do nothing to promote risk aversion. It’s not always clear that some of these classifiers do a very good job at predicting loss; there may be better metrics available. And some predictions may be flavored by stereotypes rather than objective measurements of risk.”).

<sup>233</sup> See *supra* Section IV.b.

<sup>234</sup> Medders et al., *supra* note 13, at 16 (“If instead gender remains a rating factor, and Gender X is allowed as a third gender option that is initially charged the female base rate, there would be an economic incentive for males to report as Gender X.”).

insurance with most companies, an individual will need to provide their driver's license.<sup>235</sup> Many automobile insurance applications will request information about an individual's sex or gender, but as previously mentioned, these terms are often unspecified and conflated.<sup>236</sup> Because premium rates often take a person's sex or gender into account when determining the cost, having incongruent documentation can be a problem.<sup>237</sup> The policy enacted between an automobile insurance company and the policyholder is a contract that can be understood as the company's promise to indemnify the policyholder for loss in exchange for the policyholder's payment of premiums.<sup>238</sup> In a dispute between the policyholder and the insurer, the insurance policy can become the basis of the legal dispute.<sup>239</sup> If the driver's license information does not match the insurance application, that may cause problems down the road. The parties can argue as to the validity of the insurance policy under a contract theory such as material misrepresentation,<sup>240</sup> which could invalidate the insurance

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<sup>235</sup> Rachel Bodine, *What Documents Do You Need to Get Auto Insurance?*, AUTOINSURANCE.ORG, (June 26, 2023) <https://www.autoinsurance.org/what-documents-do-i-need-for-car-insurance/>.

<sup>236</sup> Norman, *supra* note 46; Deventer, *supra* note 46.

<sup>237</sup> *The Effect of Material Misrepresentations When Applying for Auto Insurance*, BOONE & DAVIS (Jan. 29, 2016), <https://www.booneanddavislaw.com/the-effect-of-material-misrepresentations-when-applying-for-auto-insurance/> (2016); Greg Meckbach, *The Danger of Lying About Gender for Cheaper Auto Insurance*, CANADIAN UNDERWRITER (Aug. 1, 2018), <https://www.canadianunderwriter.ca/insurance/men-pretend-women-get-break-auto-insurance-1004135174/>.

<sup>238</sup> Jeffrey W. Stempel, *The Insurance Policy as Thing*, 44 TORT TRIAL & INS. PRAC. L.J. 813, 814 (2009).

<sup>239</sup> Jeffrey W. Stempel, *Interpreting Insurance Policies*, 12 COMPLEAT LAW. 1 (1995).

<sup>240</sup> *See* Mut. Ben. Life Ins. Co. v. JMR Elecs. Corp., 848 F.2d 30 (2d Cir. 1988) (affirming that “The Court of Appeals held that insured's misrepresentation about his history of cigarette smoking was material and justified rescission of policy under New York law; since insurer was induced to issue a nonsmoker, discounted premium policy precisely as result of misrepresentation, and even if insurer would have issued policy at higher smoker's premium rate that did not permit beneficiary to recover reduced amount of proceeds.”); *Nationwide Mut. Fire Ins. Co. v. Pascarella*, 993 F. Supp. 134 (N.D.N.Y. 1998) (holding that “Under New York law, an insurance company is entitled to the rescission of a policy if the company relied on a material misrepresentation made by the insured in his or her application by issuing the policy . . . . Rescission is available even if the material misrepresentation was innocently or unintentionally made . . . . A misrepresentation will be “material” if knowledge by the insurance company of the misrepresented fact would have resulted in a refusal to issue the same exact

coverage, depending on how the court interprets the inconsistency.<sup>241</sup> The outcome of the litigation could depend on the specific laws in the jurisdiction<sup>242</sup> or the judge's discretion.<sup>243</sup> Further, it is possible that in the coming years, sex/gender identity may even become a federally protected classification or protected by even more state constitutions.<sup>244</sup> Though few

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policy.”). *But cf.*, *Direct Auto Ins. Co. v. Beltran*, 998 N.E.2d 892 (Ill. App. Ct. 2013) (holding that misrepresentations in application for auto insurance policy were not material); John Dwight Ingram, *Misrepresentations in Applications for Insurance*, 14 U. MIAMI BUS. L. REV. 103, 103 (2005)

(“When a misrepresentation is discovered, the insurer is presumably entitled to deny the claim under the policy and rescind the policy.”).

<sup>241</sup> Richard Craswell, *Taking Information Seriously: Misrepresentation and Nondisclosure in Contract Law and Elsewhere*, 92 VA. L. REV. 565, 568 (2006).

<sup>242</sup> Debora L. Threedy, *Dancing Around Gender: Lessons from Arthur Murray on Gender and Contracts*, 45 WAKE FOREST L. REV. 749, 750 (2010)

(“Traditionally, scholars of contract law have claimed that context based on categories of subordination such as race or gender does not matter. They have seen contract law as untouched by social hierarchies. They believe that contract rules have nothing to do with the construction or maintenance of inequality.”); Ingram, *supra* note 236, at 106 (“A misrepresentation in an application for insurance is ‘a statement of something as a fact which is untrue and affects the risk undertaken by the insurer.’ ‘Incomplete answers or a failure to disclose material information on an application for insurance may constitute a misrepresentation when the omission prevents the insurer from adequately assessing the risk involved.’”); *id.* at 104 (“In many states, any material misrepresentation is grounds for rescission or denial of liability. This is true whether the misrepresentation is made intentionally, knowingly, negligently, or innocently. There need not be any showing of fraud or intent to deceive.”).

<sup>243</sup> Yuval Sinai & Michal Alberstein, *Expanding Judicial Discretion: Between Legal and Conflict Considerations*, 21 HARVARD NEGOTIATION L. REV. 221, 223, 225 (2016).

<sup>244</sup> Chang & Wildman, *supra* note 16, at 70 (“Many local jurisdictions are fighting over whether to include gender identity and gender expression under anti-discrimination laws. Consistent recognition that gender needs to be a protected category will further democratic inclusion in society.”); Risa Aria Schnebly, *Biological Sex and Gender in the United States*, THE EMBRYO PROJECT ENCYC. (June 13, 2022), <https://embryo.asu.edu/pages/biological-sex-and-gender-united-states-0> (“In 2020, the US Supreme Court case *Bostock v. Clayton County* (2020) was one of the first cases to rule that discrimination based on gender identity in employment is illegal across the US.”); JARED P. COLE & CHRISTINE J. BACK, CONG. RSCH. SERV., LSB10229, TITLE IX: WHO DETERMINES THE LEGAL MEANING OF “SEX”? 3–4 (2018) (“Though this case law continues to develop, several federal appellate courts have recently held or suggested that Title IX protects against discrimination based on gender identity, including transgender status, in light of the Supreme Court’s 1989 *Price-Waterhouse v. Hopkins* decision which

cases have been cited related to sex/gender discrimination, specifically in automobile insurance,<sup>245</sup> there have been numerous and enormous lawsuits related to sex/gender discrimination in health insurance,<sup>246</sup> employment practices,<sup>247</sup> and in education.<sup>248</sup> Insurance companies should avoid this sort of litigation that could welcome large payouts, and to avoid the bad

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recognized “sex-stereotyping” as a method of proving sex discrimination under Title VII.”); Hatch, *supra* note 70, at 9 (“In the courts, the use of sex-based mortality data to calculate annuities is being attacked under federal civil rights laws.”).

<sup>245</sup> See *supra* Section VII.b.

<sup>246</sup> Brendan Pierson, *Case Against Blue Cross Over Gender-Affirming Care Certified as Class Action*, REUTERS (Nov. 9, 2022), <https://www.reuters.com/legal/litigation/case-against-blue-cross-over-gender-affirming-care-certified-class-action-2022-11-09/> (“A lawsuit accusing Blue Cross Blue Shield of Illinois of violating an anti-discrimination provision of the Affordable Care Act by refusing to cover a transgender teenager's gender-affirming care through an employer plan it administers can go forward as a class action, a federal judge has ruled.”); *Class Action Lawsuit Against Aetna Filed by Emery Celli Brinckerhoff Abady Ward & Mazel and NWLC Alleges LGBTQ Discrimination*, NAT'L WOMEN'S L. CEN. (Sept. 13, 2021), <https://nwlc.org/press-release/class-action-lawsuit-against-aetna-filed-by-emery-celli-brinckerhoff-abady-ward-maazel-and-nwlc-alleges-lgbtq-discrimination/> (“The suit alleges that Aetna’s fertility treatment reimbursement policy discriminates against LGBTQ individuals.”).

<sup>247</sup> *Roberts v. Clark Cnty. Sch. Dist.*, 215 F. Supp. 3d 1001, 1001 (D. Nev. 2016) (“Transgender school police officer, who was born biologically female but who was in the process of formally transitioning to male, brought action against school district, alleging gender discrimination, harassment, and retaliation in violation of Title VII and state law after school district required that officer use gender-neutral restrooms until officer had a documented sex change, rather than the men's or women's restroom”); Edward Segal, *Walmart is Sued for Gender and Race Discrimination By EEOC*, FORBES (Feb. 11, 2022, 4:08 PM), <https://www.forbes.com/sites/edwardsegal/2022/02/11/walmart-is-sued-for-gender-and-race-discrimination-by-eoc/?sh=44bda13b5614> (“According to the U.S. Equal Employment Opportunity Commission, there were more than 21,000 filed charges of sex discrimination in fiscal year 2020, up by more than 31% from 2019.”).

<sup>248</sup> See e.g., Mary Anne Pazanowski, *Nurse's Obamacare Suit Over Transgender Care Exclusion Proceeds*, BLOOMBERG L. (Apr. 26, 2022, 10:00 AM), <https://news.bloomberglaw.com/litigation/nurses-obamacare-suit-over-transgender-care-exclusion-proceeds>; *Johnston v. U. of Pittsburgh of Commonwealth Sys. of Higher Educ.*, 97 F. Supp. 3d 657 (W.D. Pa. 2015); David W. Chen, *Sex Discrimination Case in Hawaii Could Change High School Sports Across the U.S.*, N.Y. TIMES (Oct. 22, 2022), <https://www.nytimes.com/2022/10/22/sports/title-ix-lawsuit-hawaii.html>.

publicity of a suit related to sex or gender discrimination because it could negatively affect how the public views their brand and thus its profits.<sup>249</sup>

#### 4. Acting Proactively

As more states are passing legislation that prohibits the use of sex/gender in automobile insurance premium costs, it is likely that the practice may continue to spread to other states or even nationally.<sup>250</sup> In light of other states' automobile insurance sex/gender bans, insurance companies should implement these changes now before they are forced to do so.<sup>251</sup> This would allow insurance companies to create a seamless transition and implement changes in a way that meshes with their current workflows

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<sup>249</sup> Segal, *supra* note 242 (“Several of those lawsuits created negative publicity for companies and organizations and hurt their image and reputation. . . . Employers hoping to avoid the negative effects of discrimination, which includes possible legal liability as well as damage to their reputation, should scrutinize their entire management structure and culture.”); Andrew Pettijohn, *Avoiding the (Albeit Rare) Claim of Male Sex Discrimination in the Workplace*, REMINGER (Feb. 2019), <https://www.reminger.com/publication-772> (“It is axiomatic that sexual discrimination lawsuits can be devastating to any company regardless of the outcome. Whether or not the claim is meritless, not only is its defense expensive and time-consuming, the embarrassment of a public scandal and the hidden cost of lost goodwill with consumers can be potentially crippling.”); Andrew Pettijohn, *Avoiding the (Albeit Rare) Claim of Male Sex Discrimination in the Workplace*, EMP. PRACS. LIAB. NEWSL. WINTER 2019 (Reminger), Feb. 2019, at 3 (“It is axiomatic that sexual discrimination lawsuits can be devastating to any company regardless of the outcome. Whether or not the claim is meritless, not only is its defense expensive and time-consuming, the embarrassment of a public scandal and the hidden cost of lost goodwill with consumers can be potentially crippling.”).

<sup>250</sup> Hatch, *supra* note 70, at 9 (“In Congress, bills to eliminate gender distinctions in all insurance pricing and benefits are being promoted by a broad coalition of groups and the legislative proposals have recently enjoyed steady progress.”); Medders et al., *supra* note 13, at 1 (“[A]s diversity and inclusion continue to be a strategic initiative within the insurance market, the insurance industry and its regulatory environment have to navigate carefully between the business imperatives for adequate pricing and inclusion efforts.”); Carney & Hardigree, *supra* note 119, at 2 (“Although no federal legislation has been enacted, the gender-neutral insurance movement has targeted and achieved success at the state level. Michigan, North Carolina, Hawaii, Montana, and Massachusetts have all passed gender-neutral insurance laws affecting one or more lines of individual insurance. Many other states have proposed and are debating the merits of similar legislation.”).

<sup>251</sup> Avraham et al., *supra* note 3, at 7 (“Legal prohibitions on risk classification can therefore be justified as a mechanism for preventing potentially problematic insurer behavior in the future.”).

rather than be disrupted by a change in legislation that could jolt their infrastructure.<sup>252</sup> Rather than waiting to be told that their practices need to change, insurance companies could determine their best course of action for this change rather than be compelled to make changes in a rushed, less thought-out and orchestrated way. With changes in technology and cultural understandings of sex and gender, sex and gender-based pricing will likely become a thing of the past.<sup>253</sup> Insurance companies could benefit from acting proactively rather than reactively.

## VIII. CONCLUSION

The use of sex/gender to determine automobile insurance premium costs is not an effective basis. The current understanding in American culture of the terms sex/gender is no longer supported by a binary classification system. The incongruity and inconsistency in the use of sex/gender within the automobile insurance industry supports abandoning its use for more accurate and socially acceptable alternative factors. Legislative avoidance, influential lobbying, and misguidance have prevented this change from being effectuated thus far on a broad scale throughout the country. However, this change can be achieved through administrative agency action, adjudication, federal or state legislation, or by insurance companies themselves.

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<sup>252</sup> Ryan, *supra* note 84, at 748 (1986) (“In the five states which have adopted statutes eliminating sex as a rating variable, insurers have adjusted to the legislation by implementing undifferentiated flat prices for drivers under twenty-five. Women’s rates in these states have risen unnaturally to the level of men’s, fulfilling insurance industry predictions of undesirable results from unisex legislation. Contrary to insurance industry contentions, however, these results are not the natural consequences of eliminating sex as a rating variable, but result from the failure of insurance companies to substitute other rating factors for the eliminated variable.”); Medders et al., *supra* note 13, at 16 (“If, however, gender is removed as a rating variable without replacement (via widespread introduction of unisex legislation) or is still used with the introduction of a self-reported, third gender identity (Gender X) option, market problems in auto insurance may be created, at least in the short term.”).

<sup>253</sup> Medders et al., *supra* note 13, at 26 (“With the evolution of the insurance industry toward predictive analytics, gender-based pricing may be moot in the near future. Rather than continue to use an antiquated rating variable, it is timely for the insurance industry and insurance regulators to capitalize on the opportunity now for positive societal impact in pricing modernization.”).

## IX. APPENDIX A

Automobile Insurance Sex/Gender Term Usage

Company	Verbiage Options on Application <sup>254</sup>
State Farm	Gender: Male or Female <sup>255</sup>
Geico	Gender: Female, Male, Unknown, Non-Binary <sup>256</sup>
Progressive	Gender: Male or Female <sup>257</sup>
Allstate	Does not ask about sex or gender on application <sup>258</sup>
Allstate subsidiary (National General)	Gender: Male or Female <sup>259</sup>
Farmers	Gender: Male or Female <sup>260</sup>
Liberty Mutual	“What gender do you identify as?” Male or Female <sup>261</sup>

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<sup>254</sup> This information was obtained by mock-applying as a general user on the company’s website, using the zip code 06606 and age 31.

<sup>255</sup> *Auto Quote*, STATEFARM, <https://auto.statefarm.com/quoteAndPurchase/customer/driver?conversationId=20edfee1-607d-4f60-99de-884ad35f3b9b> (last visited Mar. 15, 2023).

<sup>256</sup> *Quote*, GEICO, <https://sales.geico.com/quote> (last visited Mar. 15, 2023).

<sup>257</sup> *Policyholder Details*, PROGRESSIVE, <https://autoinsurance1.progressivedirect.com/0/UQA/Quote/DriversAddPniDetails> (last visited Mar. 15, 2023).

<sup>258</sup> *Online Insurance Quoting and Bundling*, ALLSTATE INS., <https://purchase.allstate.com/onlineshopping/people/primary/1> (last visited Mar. 15, 2023).

<sup>259</sup> *Adding a Driver*, NAT’L GEN., <https://customer.nationalgeneral.com/AutoInsurance/QuoteDrivers/DGPrimaryDriverInfo> (last visited Mar. 15, 2023).

<sup>260</sup> *Who’s Driving*, FARMERS, <https://esales.farmers.com/fastquote/auto/drivers> (last visited Mar. 15, 2023).

<sup>261</sup> *Drivers*, LIBERTY MUT., <https://buy.libertymutual.com/shop/auto-quote/Q23-03160-05583/driver/6412893e4c636d7fe3d06820> (last visited Mar. 15, 2023).



Nationwide	Sex: Male or Female <sup>262</sup>
Travelers	Gender: Male, Female, Not Specified <sup>263</sup>

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<sup>262</sup> *Nationwide Bundled Quote*, NATIONWIDE, [https://multiproduct.nationwide.com/multi-quote/more-details?quoteType=initiateQuote&zipCode=06606&utm\\_medium=organic&utm\\_source=google&utm\\_campaign=PRS](https://multiproduct.nationwide.com/multi-quote/more-details?quoteType=initiateQuote&zipCode=06606&utm_medium=organic&utm_source=google&utm_campaign=PRS) (last visited Mar. 15, 2023) (Note that within the last year, Nationwide had different selection options including: “Please select your gender as described on your driver’s license” Male or Female. Info box. “Generally speaking, women tend to get in fewer accidents than men. At the end of the day, your individual driving history will have a greater impact on your rate than whether you are a guy or a gal.” However, this information could not be recreated.).

<sup>263</sup> *Tell Us a Little About Yourself*, TRAVELERS, <https://pijas.travelers.com/quickquote/TravelersQuote.ahtml#WELCOME> (last visited Mar. 15, 2023).