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The Advent of Autonomy Drives Novel Considerations for Insurance in a Driverless World

By John P. Mastando III, Jay R. Minga, and Yonatan Shefa

Widespread access to advanced autonomous vehicles remains a futuristic scenario, but that future — which will have a significant impact on the insurance industry — is fast approaching. Developments in AV technology have already begun to disrupt considerations for vehicle manufacturing and insurance,¹ as reflected by industry authorities' new vocabulary for these emerging trends. Novel questions of liability likewise have surfaced since technological error may also need to be considered along with driver error.² These phenomena have begun to stir new ideas around who carries what insurance. Additionally, both state and federal legislation have started to address the new technology, with a diversity of state legislative activity, and federal legislation underway. The uniformity of legislation, or lack thereof, is sure to impact the growth of AV technology and the insurance sector. Moreover, regulation of data and privacy stands to affect insurance coverage. Auto insurance may experience interesting changes.

What is Autonomy: New Nomenclature May Reflect a New Insurance Paradigm

The new AV discourse evidences this new paradigm. The Society of Automotive Engineers describes six levels of automation in terms of driver engagement. These range from Level 0, all-human driving, to Level 5, no human involvement. The intermediate levels vary in the driving the AV performs, under which circumstances, and the human oversight required.³

Consider the current state of vehicle technology insurers operate in. Most vehicles are considered Level 0. Some publicly available vehicles offer Level 1 automation that handles either (1) steering or (2) braking and acceleration assistance, but not both simultaneously.⁴ Certain car companies offer vehicles with Level 2 capabilities of “partial driving automation” that manage steering, acceleration, and braking in certain circumstances, but require the driver to remain alert, often with hands on the steering wheel. To date, no vehicles sold to consumers in the U.S. possess automation Levels 3 to 5, under which an individual no longer needs to actively supervise driving.⁵ A few companies such as Waymo (which provides driverless taxi services via an app) and Nuro (which offers driverless delivery services and has been featured in advertisements for Domino’s Pizza) possess truly driverless vehicles, but those AVs operate commercially in limited circumstances and locations.⁶

The AV Industry Has Brought Us to the Cusp of a Paradigm Shift

As AVs advance to Levels 3 and beyond, issues of liability and insurance coverage may become increasingly complex. Even in a Level 3 AV, where an autonomous system handles all driving in certain situations, the driver must remain ready to take over upon request.⁷ In these situations, commentators argue that human oversight will be implicated if an accident occurs, and personal auto insurance relevant.⁸ However, as human oversight diminishes, product liability may become increasingly prominent, as it already is when vehicles malfunction.⁹ As driving changes, insurance may follow.

Tesla — whose vehicles offer semi-AV features — has been experimenting with specialized insurance programs. In October 2017, Tesla, partnering with Liberty Mutual, launched a car insurance product called InsureMyTesla, tailored for Tesla vehicles.¹⁰ In 2019, Tesla shifted gears with an in-house Tesla Insurance program, working with State National Insurance Company. The insurance program, open to owners of Tesla vehicles, is currently available only in California, though Tesla expressed plans to expand later in 2021.¹¹

Waymo, for its part, announced in December 2017 a partnership with Trōv to insure its passengers.¹² Trōv, an insurance startup, allows companies to offer embedded insurance products to their customers, such as, with Waymo, trip-based insurance coverage.¹³ Reportedly, Trōv would provide Waymo passengers insurance for lost or damaged property and trip-related medical expenses.¹⁴ Although Trōv still advertises its partnership with Waymo, Waymo’s app more recently indicates Blanket Accident Insurance coverage is available to passengers through Liberty Mutual.¹⁵

State Legislation Has Begun to Create New Insurance Frameworks

As AVs evolve, federal and state statutes and regulations appear poised to have an impact on the insurance industry. The Hawaii Legislature recently found that twenty-nine states and D.C. have enacted legislation, and governors in eleven states have issued executive orders, regarding AVs.¹⁶ Such regulations, and how they vary, will be important to watch.

While auto insurance regulation is currently a function primarily of state law, the National Highway Traffic Safety Administration (NHTSA) has issued guidance for states regarding AV liability and insurance regulation. The NHTSA considerations include: (a) allocation of liability among AV owners, operators, passengers, manufacturers, and other entities in the event of a crash; (b) determination of which parties should carry vehicle insurance; and (c) operation of laws allocating tort liability.¹⁷ Further, NHTSA suggests that entities applying to test AVs on public roadways be required to prove ability to satisfy judgments for damages, and cites the American Association of Motor Vehicle Administrators’ recommended minimum requirement of \$5 million in insurance.¹⁸

Concerning liability, with higher-level AVs not yet available to consumers, many existing state AV laws regulate manufacturers and commercial service providers permitted to test AVs on public roads.¹⁹ In line with NHTSA’s guidance, states like New York and Washington require the testing entity to maintain a \$5 million insurance policy.²⁰

States like California, which allow AVs to operate for testing and non-testing purposes, seem to require AV manufacturers to maintain a \$5 million insurance policy in either context.²¹ States like Nevada have a \$5 million insurance requirement for testing,²² but have different requirements in commercial contexts, such as \$1,500,000 per accident while an AV operates as part of a transportation network company (TNC), also known as a rideshare company.²³ Still, other states, like Arizona, simply provide that the entity testing or operating the AV meet applicable insurance requirements.²⁴

Which entities must carry insurance similarly varies by state and context. Certain states appear to offer flexibility in certain situations. For example, in Nevada, an entity testing AVs on a highway must submit proof of insurance, but for a monitored AV provider operating a vehicle for a TNC, TNC insurance may be provided through one or a combination of policies by any one or a combination of the TNC, driver, and monitored AV provider.²⁵ In Florida, an AV used as part of a TNC must be covered by a specific insurance policy maintained by either the AV owner, the TNC, or a combination of the two.²⁶ Separately, Florida permits the operation of low-speed delivery AVs not capable of human occupancy.²⁷ Such AVs may be covered by a policy belonging to either the AV owner, the teleoperation system owner, the remote human operator, or a combination thereof. States like Texas seem to simply provide that *the AV* maintain liability coverage.²⁸

Federal Law Could Potentially Introduce Radical Changes to Auto Insurance: State Preemption, Cybersecurity & Privacy

While federal AV law has been slower to develop, a bill called the Safely Ensuring Lives Future Deployment and Research in Vehicle Evolution Act, or Self Drive Act, was reintroduced in the U.S. House of Representatives in June 2021, after Senate opposition in 2017, and failing to gain traction when reintroduced in 2020.²⁹ Among other things, the bill preempts states from maintaining regulations of the design, construction, or performance of AVs unless identical to standards prescribed under the bill, and instructs the Secretary of Transportation to establish a “Highly Automated Vehicle Advisory Council” within NHTSA.³⁰

Some Self Drive Act provisions will interest insurance industry stakeholders — even if the draft bill says relatively little regarding AV insurance, other than to state that its preemption provision should not prohibit state regulation of insurance.³¹ For example, Section 5 would *prohibit* manufacture or importation of “any highly automated vehicle, vehicle that performs partial driving automation, or automated driving system *unless* such manufacturer has developed a cybersecurity plan.”³² Under Section 5, such cybersecurity plans would provide for mitigating reasonably foreseeable vulnerabilities from cyberattacks, and preventive and corrective action against such vulnerabilities, including measures to safeguard key controls and systems. This cybersecurity plan requirement is notable because various commentators have asserted that networked AVs could enable damaging cyberattacks.³³ For this reason, many experts believe that demand for cybersecurity insurance will increase with AVs in the market, and some have suggested that auto insurance policies might include cybersecurity riders.³⁴

The Self Drive Act also would require AV manufacturers to develop privacy plans under specific criteria. Commentators have noted AV data may interest auto insurers for their own use and to potentially monetize.³⁵ Accordingly, insurance industry actors have expressed concerns over the potential for disparate state data standards, and have stated that federal standards might be useful.³⁶

Takeaways

- The development of AVs may introduce changes to the auto insurance industry.
- New auto insurance models have accompanied novel AV developments.
- The increasing number of states enacting AV regulation may play an important role in auto insurance’s future.
- Auto industry stakeholders will want to monitor whether the Self Drive Act gains more traction this time around.

¹ Sean Szymkowski, *2022 Cadillac Escalade drops hands-free Super Cruise system amid chip shortage*, Road/Show by CNet (Sept. 29, 2021), <https://www.cnet.com/roadshow/news/2022-cadillac-escalade-super-cruise-hands-free-chip-shortage/>; Neil Winston, *Chronic Auto Chip Shortage Pinpoints Players Ill Equipped To Survive Electric, Autonomous Turmoil*, Forbes (June 24, 2021), <https://www.forbes.com/sites/neilwinton/2021/06/24/chronic-auto-chip-shortage-pinpoints-players-ill-equipped-to-survive-electric-autonomous-turmoil/?sh=41d33a187795> (“The chip shortage is not only a short-term problem for traditional auto manufacturers, it signals to investors which companies have been asleep at the technology switch and won’t survive the upcoming shakeout inspired by the move to connected electric cars and autonomous ones.”).

² See, e.g., Complaint for Damages, *Nilsson v. General Motors LLC*, No. 4:18-cv-00471-JSW (N.D. Cal. Jan. 22, 2018), ECF No. 1 (alleging negligence solely of AV manufacturer in personal injury of a motorcyclist where allegedly AV “suddenly veered back into [motorcyclist’s] lane” after individual in AV driver’s seat had engaged self-driving mode and kept hands off the steering wheel); Joint Notice of Settlement, *id.*, ECF No. 32.

³ *Automated Vehicles for Safety*, NHTSA, <https://www.nhtsa.gov/technology-innovation/automated-vehicles-safety#topic-road-self-driving> (last visited Oct. 29, 2021).

⁴ Jessica Shea Choksey & Christian Wardlaw, *Levels of Autonomous Driving, Explained*, J.D. Power (May 5, 2021), <https://www.jdpower.com/cars/shopping-guides/levels-of-autonomous-driving-explained>.

⁵ *Id.*

⁶ Nelson Mills, *Will Self-Driving Cars Disrupt The Insurance Industry?*, Forbes (March 25, 2021), <https://www.forbes.com/sites/columbiabusinessschool/2021/03/25/will-self-driving-cars-disrupt-the-insurance-industry/?sh=7fa5948e1dbf>; *The Future of Delivery is Self-Driving*, Domino’s Pizza, <https://www.selfdrivingdelivery.dominos.com/en> (last visited Oct. 29, 2021); *Less Driving[,] More Thriving*, Nuro, <https://www.nuro.ai/> (last visited Oct. 29, 2021) (“Trusted by . . . Domino’s[,] Kroger[,] Walmart[,] Chipotle[,] CVS Pharmacy[,] FedEx”).

⁷ See *Automated Vehicles for Safety*, *supra* note 3.

⁸ Zoe Sagalow, *Insurers ask: Who pays when self-driving vehicles crash?*, Roll Call (May 25, 2021), <https://www.rollcall.com/2021/05/25/insurers-ask-who-pays-when-self-driving-vehicles-crash/>.

⁹ See *Nilsson v. General Motors LLC*, *supra* note 2.

¹⁰ Lauren Lyons Cole, *Tesla wants to turn the car insurance world upside down — and it could end up saving you money*, Business Insider (Nov. 1, 2017), <https://www.businessinsider.com/tesla-car-insurance-liberty-mutual-savings-2017-10>.

¹¹ Mary Van Keuren, *Tesla Insurance*, Bankrate (May 25, 2021), <https://www.bankrate.com/insurance/companies/tesla/>.

¹² Andrew J. Hawkins, *Riders in Waymo’s self-driving cars will now be insured*, The Verge (Dec. 19, 2017), <https://www.theverge.com/2017/12/19/16796370/waymo-trov-self-driving-car-insurance>.

¹³ *Trov and Waymo Partner to Launch Insurance for Ride-Hailing*, Cision PR Newswire (Dec. 19, 2017), <https://www.prnewswire.com/news-releases/trov-and-waymo-partner-to-launch-insurance-for-ride-hailing-300573229.html>. Companies like Uber, however, use more traditional insurance models, providing the rideshare driver with \$1 million in third-party liability as well as uninsured/underinsured motorist bodily injury insurance while customers are in the car. See *New York City Insurance requirements*, Uber, <https://www.uber.com/us/en/drive/insurance/> (last visited Oct. 29, 2021).

¹⁴ Scott Walchek, *Trov + Waymo: Accelerating Trov’s Bigger Picture*, Trōv (Dec. 20, 2017), <https://blog.trov.com/trov-waymo-accelerating-trovs-bigger-picture>; Hawkins, *supra* note 12.

¹⁵ Trōv, *About Us* (“Trusted by some of the biggest brands in the world [including] WAYMO.”), <https://www.trov.com/about/> (last visited Oct. 29, 2021); Waymo LLC (2021), *Additional Insurance for Waymo One rides (version number 1.24) [Mobile application software]*, also available at <https://support.google.com/waymo/answer/7673120?hl=en> (last visited Oct. 29, 2021).

¹⁶ S.B. No. 1008, Thirty-First Legislature - Regular Session (Haw. 2021), https://www.capitol.hawaii.gov/session2021/bills/SB1008_.HTM.

¹⁷ U.S. Dep’t of Transportation, NHTSA, *Automated Driving Systems: A Vision for Safety*, 24 (Sept. 2017), https://www.nhtsa.gov/sites/nhtsa.gov/files/documents/13069a-ads2.0_090617_v9a_tag.pdf.

¹⁸ *Id.* at 23, 27 n.34.

¹⁹ See, e.g., Nev. Rev. Stat. Ann. § 482A.080; Cal. Veh. Code § 38750(b).

²⁰ See N.Y. State Dep’t of Motor Vehicles, *Apply for an Autonomous Vehicle Technology Demonstration / Testing Permit*, <https://dmv.ny.gov/dmv/apply-autonomous-vehicle-technology-demonstration-testing-permit> (last visited Oct. 29, 2021); Wash. Rev. Code Ann. § 46.30.050. According to a recent regulation, companies seeking a testing permit must also indemnify the city of New York against legal

liabilities associated with testing AVs on public highways in the city. See Ryan Deffenbaugh, *How the city is preparing for the arrival of self-driving cars*, Crain's New York Business (Sept. 2, 2021), <https://www.crainsnewyork.com/technology/how-new-york-city-preparing-arrival-self-driving-cars>.

²¹ See Cal. Veh. Code §§ 38750(a)(5) (“A ‘manufacturer’ of autonomous technology is the person . . . that originally manufactures a vehicle and equips autonomous technology on the originally completed vehicle or, in the case of a vehicle not originally equipped with autonomous technology by the vehicle manufacturer, the person that modifies the vehicle by installing autonomous technology . . .”), (b)(3) (“Prior to the start of testing in this state, the manufacturer performing the testing shall obtain an instrument of insurance, surety bond, or proof of self-insurance in the amount of five million dollars (\$5,000,000).”), (c)(3) (“an autonomous vehicle shall not be operated on public roads until the manufacturer submits an application . . . [that] shall contain . . . A certification that the manufacturer will maintain, an instrument of insurance, a surety bond, or proof of self-insurance . . . in an amount of five million dollars (\$5,000,000)”).

²² Nev. Rev. Stat. Ann. § 482A.060.

²³ Nev. Rev. Stat. Ann. §§ 690B.470, 706A.050; N.Y. State Dep’t of Motor Vehicles, *FAQ for TNC Drivers*, <https://dmv.ny.gov/more-info/faq-tnc-drivers> (last visited Oct. 29, 2021).

²⁴ Ariz. Executive Order No. 2018-04; Ariz. Rev. Stat. Ann. § 28-9702.

²⁵ Nev. Rev. Stat. Ann. §§ 482A.060, 690B.470.

²⁶ Fla. Stat. Ann. § 627.749(2).

²⁷ Fla. Stat. Ann. §§ 316.003, 316.2122(2).

²⁸ Tex. Transp. Code Ann. § 545.454(b).

²⁹ Eugene Mulero, *Rep. Bob Latta Reintroduces Self-Driving Vehicle Bill*, Transport Topics (June 14, 2021), <https://www.ttnews.com/articles/rep-bob-latta-reintroduces-self-driving-vehicle-bill>.

³⁰ Self Drive Act, H.R. 3388, 115th Cong. §§ 3, 9 (2021), <https://www.congress.gov/bill/115th-congress/house-bill/3388/text>.

³¹ *Id.* § 3(1)(b)(3)(A).

³² *Id.* § 5(a) (emphasis added).

³³ See, e.g., Bryant Walker Smith, *Automated Driving and Product Liability*, 2017 Mich. St. L. Rev. 1, 19, 43-44, <https://ssrn.com/abstract=2923240>.

³⁴ Karlyn D. Stanley, Michelle Grisé & James M. Anderson, RAND Corporation, *Autonomous Vehicles and the Future of Auto Insurance* 53-54 (2020), https://www.rand.org/pubs/research_reports/RRA878-1.html.

³⁵ Karlyn D. Stanley & Jason Wagner, Texas A&M Transportation Institute, *Revolutionizing Our Roadways: Data Privacy Considerations for Automated and Connected Vehicles* 23 (Nov. 2015), <https://static.tti.tamu.edu/tti.tamu.edu/documents/TTI-2015-13.pdf>.

³⁶ *Id.* at 28.

Revisiting the Messy Math of Business Interruption Losses in the Aftermath of COVID-19 and Other Recent Disasters

By David L. Yohai and Heather Weaver*

Courts across the globe are flooded with business interruption insurance claims arising out of the COVID-19 pandemic, extreme weather events, cyberattacks and other catastrophes. COVID-19 has affected nearly every business, especially wreaking havoc on those in the hospitality, travel and entertainment industries. Natural disasters are also devastating businesses in growing numbers, and are expected to worsen due to climate change. Likewise, cyberattacks are surging, causing businesses to shut down for weeks at a time. Now, more than ever, business interruption insurance has proven to be a critical component of every business's insurance portfolio, with some businesses relying on the recovery of pending claims to ensure their survival.

This article discusses the challenges that COVID-19 and other recent catastrophes present when calculating business interruption claims. It surveys the two common approaches adopted by courts, examines their outsized impact on an insured's recovery and discusses how the influx of new decisions will change the business interruption landscape. It also analyzes how the underwriting process is evolving to account for the economic impact of these recent disasters.

Courts are Divided on Whether to Consider Post-Loss Market Conditions in Calculating Business Interruption Losses

Large-scale catastrophes devastate local and regional economies. Courts are split on whether to consider post-loss market conditions in calculating the insured's business interruption losses. While a major catastrophe is likely to financially depress affected areas, the impact on businesses is varied. Some businesses, such as hotels and home improvement retailers, may actually prosper in the aftermath of a hurricane given an increase in demand for their goods and services. This raises the question of whether such businesses should be able to recover for the increased profits they would have earned had they been able to continue operating. Alternatively, questions arise as to whether an insured's losses should be reduced if the insured would have generated minimal revenue or even operated at a loss in the post-catastrophe environment.

Courts generally follow one of two approaches: 1) the "Economy Ignored" approach, which calculates the loss as if the peril had not occurred; or 2) the "Economy Considered" approach, which calculates the loss as if the peril occurred but the insured was not damaged. Neither approach inherently favors the insured or insurer. Whether a given approach is coverage maximizing or coverage minimizing turns, in part, on the type of disaster, nature of the business, and policy language at issue. However, the court's approach can drastically impact recovery.

The Economy Ignored Approach

Under the Economy Ignored approach, courts look to pre-loss income to determine a business's expected profits in a hypothetical post-loss world where the catastrophe never occurred.

Coverage Maximizing

In *Finger Furniture Co. v. Commonwealth Insurance Co.*,¹ the insured furniture retailer was forced to close its stores due to flooding.² When Finger reopened, its sales skyrocketed.³ The insurer sought to reduce Finger's business interruption losses by its post-storm profits.⁴ Rejecting this argument, the Fifth Circuit found that the policy did not allow one to "look prospectively to what occurred after the loss," requiring the loss to "be based on historical sales figures."⁵

In *Consolidated Companies, Inc. v. Lexington Insurance Co.*,⁶ the Fifth Circuit considered whether an insurer could rely on post-catastrophe market conditions to reduce an insured's recovery, since the depressed post-Katrina economy would have reduced their profits even if they had not been damaged.⁷ The court again found that the jury was "not to look at the real-world opportunities for profit post-Katrina, but instead was to decide the amount of money required to place [the insured] in the same positions in which it would have been had Katrina not occurred."⁸

Coverage Minimizing

The Fifth Circuit maintained its Economy Ignored approach with a pro-insurer holding in *Catlin Syndicate Ltd. v. Imperial Palace of Mississippi, Inc.*⁹ An insured casino whose revenue spiked when it reopened before its competitors after Hurricane Katrina argued that its claim should be calculated using its higher post-hurricane sales, increasing its claim by \$70 million dollars.¹⁰ Unpersuaded, the court held that "sales figures after reopening should not be taken into account" and directed the parties to use historical sales figures to determine the loss.¹¹

The Economy Considered Approach

Under the Economy Considered approach, business interruption losses are calculated based on a hypothetical situation where the peril occurred, but the insured was able to continue operating.

Coverage Maximizing

In *Levitz Furniture Corp. v. Houston Casualty Co.*,¹² a furniture retailer that suffered flood damage sought to recover for its "lost opportunity" to benefit from increased, post-disaster consumer demand.¹³ The insurer argued that business interruption coverage was designed to place the insured "in the position it would have been had no loss occurred," and, absent the flood, there would have been no increased demand for Levitz's products.¹⁴ Favoring the insured, the court found that the policy allowed for recovery of earnings Levitz would have made "had no business interruption occurred, *i.e.*, had Levitz not been forced to shut down after the flood."¹⁵

Coverage Minimizing

In *Penford Corp. v. National Union Fire Insurance Co.*,¹⁶ flooding damaged the insured's manufacturing facility.¹⁷ Penford sought to bar the opinion of the insurer's expert that Penford's losses should be adjusted downward to account for the effect of the 2008 recession.¹⁸ Finding in favor of the insurer, the court held that "unfavorable market conditions" were "relevant to the question of what Penford's likely revenues would have been in the absence of the flood" as the recession would have affected Penford's earnings even if the flood did not occur.¹⁹

The Influx of Business Interruption Cases Will Reshape the Landscape for Post-Catastrophe Damages Calculations

Recent precedent analyzing the proper method for calculating business interruption claims is limited.²⁰ That will soon change as courts begin to resolve the thousands of pending COVID-19 and other business interruption claims. To date, the analysis of COVID-19 claims has focused on whether insurers have an obligation to pay (*e.g.*, whether the presence of a virus constitutes a "physical loss" under the policies), not *how much* they should pay. Before long, in those cases that survive, courts will shift gears to focus on the value of those claims, a complex but critical process for both insurers and insureds.

The method adopted by courts in COVID-19 cases in particular, where businesses experienced extended closures and restrictions, could impact the value of a claim by tens or even hundreds of millions of dollars. This is especially true given COVID-19's major economic impact. For many businesses, the Economy Considered approach could potentially be harmful as courts could find that those businesses would have taken a financial hit even if they had continued operating given reduced consumer demand. Alternatively, a court could find that if a business had been

able to continue operating without its competitors, demand would have increased due to the limited supply or access to other similar businesses.

The calculation of COVID-19 business interruption claims is further complicated by the fact that restrictions and regulations were constantly changing. As a result, the income of certain businesses fluctuated considerably based on various factors such as the season and state of the pandemic. For example, when a national emergency was declared in March 2020, most restaurants were forced to shut down completely. Many restaurants then reopened for takeout and delivery. Eventually, restaurants were permitted to reopen for indoor dining but with varying capacity restrictions. During the warmer months, many restaurants converted their outdoor spaces to maximize business. All of these factors, which remained in flux over an extended timeframe, complicate the calculations of COVID-19 business interruption losses.

The resolution of COVID-19 claims will also affect the calculation of other types of business interruption claims. For example, courts in many jurisdictions, including those that have not yet addressed the issue, will be forced to set precedent regarding which approach to take when calculating business interruption losses. COVID-19, in general, will also affect the value of pending and future claims given its substantial economic impact regardless of which approach a court adopts. Under the Economy Considered approach, some businesses will struggle to show that their income would not have plummeted regardless due to COVID-19, while others might be able to establish a pandemic-related increase in demand for their goods or services. Under the Economy Ignored approach, COVID-19 may still affect claim calculations because recent sales data preceding the loss event could reflect atypical numbers due to COVID-19. For example, a question arises as to how the historical profits of a business affected by Hurricane Ida should be calculated if the business experienced pandemic-related supply chain disruptions and labor shortages. This raises other questions regarding whether a longer lookback period would more accurately reflect the revenue of a particular business over time, and therefore be a more appropriate business loss calculation.

Avoiding the Unknown Through Inclusion of Clear Policy Language

The COVID-19 pandemic has underscored the importance of a meaningful underwriting process and more meticulous policy drafting so that the coverage being afforded is clear and predictable. Many business interruption policies include standard language measuring the insured's recovery in terms of the insured's net income "had no loss occurred." While some courts interpret "loss" to mean the peril (consistent with the Economy Ignored approach),²¹ others interpret "loss" to mean damage to the insured (consistent with the Economy Considered approach).²²

Given these conflicting interpretations, some insurers have sought to add clarifying policy language expressly denying an insured's recovery of advantageous post-catastrophe market earnings. Such provisions, typically referred to as "favorable conditions" clauses, exclude the consideration of "any Net Income that would likely have been earned as a result of *an increase in the volume of the business due to favorable business conditions caused by the impact of the Covered Cause of Loss* on customers or on other businesses."²³ These provisions, which first became popular following Hurricane Katrina,²⁴ exist in many of the policies at issue in COVID-19 and other business interruption claims working their way through the courts.²⁵

Few cases have addressed the impact of "favorable conditions" clauses on post-loss recovery and, thus, the pending cases will play a significant role in clarifying the law in this area. The limited cases dealing with this issue, however, have not all favored insurers.²⁶ Because the policy language typically requires that the favorable business conditions be "caused by" the insured peril, some courts are disinclined to apply them where the changed economic conditions are tied to other external events. For example, in *Hampden Auto Body Co. v. Owners Insurance Co.*, the court permitted expert testimony considering advantageous post-catastrophe profits despite a "favorable conditions" provision because the increased business demand stemmed from a series of subsequent storms and not only the storm that caused the interruption to the insured's business.²⁷ This raises interesting questions regarding the

effectiveness of these provisions in today's environment where natural disasters are more frequent and often overlap.

In light of COVID-19 and the uptick of other disasters, insureds and insurers will be incentivized to include policy language clarifying how post-catastrophe economic conditions will affect the calculation of business interruption losses. For example, insureds may seek to exclude "favorable conditions" clauses, and instead include language that would allow recovery of any increased profits that would likely have been earned due to beneficial business conditions after the catastrophe. Insurers will likely continue to push for "favorable conditions" clauses to exclude recovery of any increased profits due to the post-catastrophe economy. Both sides may wish to ensure that their respective language applies regardless of whether the favorable post-loss business conditions were caused by the peril that initially interrupted the insured's business. For example, if an insured hotel is forced to shut down after sustaining fire damage, and then a subsequent hurricane increases demand for that hotel, the insured will want to make sure that it can recover those increased profits even though the fire is what caused the hotel to close. To the contrary, an insurer will want to ensure that the "favorable conditions" clause excludes recovery of increased profits regardless of whether the fire or a subsequent hurricane triggered the increased demand.

It is also possible that insurers and insureds will increasingly wish to avoid the uncertainties of post-loss economic conditions altogether, and agree to include policy language that would allow an insured to recover based on its historical sales data and financial performance before the loss occurred. To ensure further predictability, the parties may seek to define the lookback period in the policy so that there is no debate as to the timeframe that should be considered in calculating losses. These are just a few ways that insurers and insureds can manage expectations and clarify coverage on the front-end to avoid unforeseen circumstances arising out of major crises such as COVID-19 and other recent disasters.

* Associate Sherry Safavi, who is not yet admitted, assisted with the drafting of this article.

¹ 404 F.3d 312 (5th Cir. 2005).

² *Id.* at 313.

³ *Id.*

⁴ *Id.*

⁵ *Id.* at 314.

⁶ 616 F.3d 422 (5th Cir. 2010).

⁷ *Id.* at 430-32.

⁸ *Id.* at 432 (cleaned up).

⁹ 600 F.3d 511 (5th Cir. 2010).

¹⁰ *Id.* at 512.

¹¹ *Id.* at 516.

¹² No. 96-1790, 1997 U.S. Dist. LEXIS 5883 (E.D. La. Apr. 28, 1997).

¹³ *Id.* at *6.

¹⁴ *Id.*

¹⁵ *Id.* at *8.

¹⁶ No. 09-CV-13-LRR, 2010 U.S. Dist. LEXIS 60083 (N.D. Iowa June 17, 2010).

¹⁷ *Penford Corp. v. Nat'l Union Fire Ins. Co.*, No. 09-CV-13-LRR, 2010 U.S. Dist. LEXIS 3737, at *13 (N.D. Iowa Jan. 19, 2010).

¹⁸ *Penford Corp.*, 2010 U.S. Dist. LEXIS 60083, at *28.

¹⁹ *Id.* at *31-32.

²⁰ See *Hampden Auto Body Co. v. Owners Ins. Co.*, No. 17-cv-1894-WJM-SKC, 2020 U.S. Dist. LEXIS 206926 (D. Colo. Nov. 5, 2020); *Alley Theatre v. Hanover Ins. Co.*, No. H-19-1987, 2020 WL 1650659 (S.D. Tex. Mar. 26, 2020).

²¹ See, e.g., *Imperial Palace*, 600 F.3d at 515; *Finger Furniture*, 404 F.3d at 314.

²² *Stamen v. Cigna Prop. & Cas. Ins. Co.*, No. 93-1005-CIV-DAVIS, 1994 U.S. Dist LEXIS 21905, at *7-8 (S.D. Fla. June 10, 1994).

²³ ISO Commercial Property Form, CP 00-30-04-02, ¶ C(3)(a)(1)-(2) (emphasis added).

²⁴ See, e.g., *Rimkus Consulting Group, Inc. v. Hartford Cas. Ins. Co.*, 552 F. Supp. 2d 637, 639 (S.D. Tex. 2011); *Berk-Cohen Assocs., LLC v. Landmark Am. Ins. Co.*, Nos. 07-9205, 07-9207, 2009 U.S. Dist. LEXIS 77300, at *10 (E.D. La. Aug. 27, 2009).

²⁵ See, e.g., *Ramaco Res., LLC v. Fed. Ins. Co.*, No. 2:19-cv-00703, 2021 U.S. Dist. LEXIS 117249, at *56 (S.D.W. Va. June 23, 2021); *Dotexamdr, PLLC v. Hartford Underwriters Ins. Co.*, No. 3:20cv698(MPS), 2021 U.S. Dist. LEXIS 145713, at *5 (D. Conn. Aug. 4, 2021).

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²⁷ 2020 U.S. Dist. LEXIS 206926, at *8; see also *Berk-Cohen Assocs.*, 433 Fed. App. at 270.

DeFi: Blockchain Risks Make the Case for Blockchain Insurance

By John P. Mastando III, Jay R. Minga, and Aaron J. Brogan

A surge of interest in blockchain has resulted in a growing insurance market. The technology famously behind Bitcoin has expanded into an entire “Decentralized Finance” ecosystem, colloquially known as “DeFi.” Some observers claim that the abundance of blockchain-native financial products that have sprouted offer new opportunities to the public and the insurance industry. Prominent commentators, including SEC Chair Gary Gensler, have declared DeFi a “Wild West” — with many highlighting new risks such as smart contract risk, governance risk, and oracle risk that present novel drivers of insurance demand.¹ This new frontier has been said to offer insurers the chance to delve into new markets, improve fraud detection and pricing, and reduce expenses. Insurers have harnessed blockchain technology to build novel products as well.² Understanding the developing regulatory environment will also help insurers navigate this expanding market.

Beyond Bitcoin: Building Blockchains Have Laid a Groundwork of Opportunity

Blockchain technology, a type of Distributed Ledger Technology (DLT), refers to the infrastructure and protocols for otherwise independent computers to simultaneously access, validate, and maintain data by replicating, saving, and updating identical copies of a ledger without a central authority.³

Bitcoin, first outlined in 2008, is generally considered to have been the first blockchain used effectively as a store of value.⁴ But by design, the Bitcoin blockchain is limited to being a medium of exchange by functioning as a record of transactions. By contrast, many observers have traced the origin of DeFi to around 2015 when a new blockchain called Ethereum introduced the capacity for developers to embed business applications, or “smart contracts,” on the blockchain.⁵ The technology enabled sophisticated decentralized financial products.⁶ Thus, DeFi was born.

In the paradigmatic DeFi protocol, a smart contract is coded to “lock” some value on the blockchain, and will unlock upon a predefined event. A protocol can thereby act as a decentralized and automatic investment or lending vehicle. Likewise, corporate governance of these smart contracts can be designed to be decentralized.⁷ For example, Aave, currently the largest DeFi protocol, allows users to invest and earn interest, and uses the pool of capital from those investments to fund smart contract lending.⁸ In exchange for depositing funds, users receive Aave tokens, which entitle them both to propose and vote on governance changes, their vote proportionally weighted by their tokens’ value.⁹

Analysts have suggested that smart contracts lower barriers of access to financing; increase efficiency, interoperability, and transparency; and reduce costs associated with disputes.¹⁰ The DeFi sector has reportedly grown to over roughly \$100 billion in market capital.¹¹

Insurance Options Have Appeared In Connection With Risks Unique to DeFi

While commentators generally have suggested that DeFi offers decentralized financial products, they have also widely identified novel forms of associated risk. Bitcoin insurance policies for risk of theft or loss coverage have already appeared. For instance, the cryptocurrency exchange Coinbase announced the purchase of \$255 million in such coverage from Aon in 2019 — to cover crypto assets held in so-called “hot” storage, reportedly meaning the assets were stored “essentially online and open to potential hacks.”¹² Daily price fluctuation can also make for additional considerations when insuring assets such as Bitcoin, but this has led insurers to innovate.¹³ Lloyd’s notably advertises a “first of its kind liability policy” that provides “flexible limits” that increase or decrease in

accordance with price changes of crypto assets to “indemnif[y] for the underlying value” even if that value fluctuates over the policy period.¹⁴

Beyond cryptocurrency, commentators have identified a number of other risks unique to DeFi including: (1) smart contract risk, (2) governance risk, and (3) oracle risk.¹⁵ Observers have further noted the potential of rapidly emerging DeFi regulation. Analysts have commented that competent insurance options may be important to the continued growth and viability of the space.¹⁶ Speaking to *Forbes* about DeFi insurance, Marouane Hajji, blockchain entrepreneur and founder of crypto insurance platform Unslashed, stated: “[Insurance is] really the bedrock on which everything else is built . . . It’s of paramount importance for banking, trade, international commerce, anything in finance really, relies on insurance.”¹⁷ A closer look at certain of these risks and the insurance offerings already emerging to respond to them highlights the development of insurance in the rapidly growing DeFi space.

Smart Contract Risk

Analysts have indicated that DeFi faces a variety of unique and novel risks, which also offer opportunity for the insurance industry.¹⁸ The first of these has been called “smart contract risk.” Analogous to drafting issues in traditional contracts, smart contracts are vulnerable to coding errors. Such errors — or hacking exploits designed to take advantage of them — can divert the value stored inside smart contracts or render it inaccessible. If a mechanism to correct a fault in the programming is lacking, value can even be irretrievably lost.¹⁹

Over the past few years there have been reports of attacks on DeFi platforms causing substantial losses.²⁰ Famously, a DeFi protocol known as the Distributed Autonomous Organization, or DAO — established to build a smart contract venture capital firm — suffered a hack in 2016 and lost \$50 million in value. This loss led the core developers behind the Ethereum blockchain to hack the hacker to retrieve the lost value and then execute a so-called “hard fork,” reprogramming the Ethereum blockchain itself to unwind the transactions.²¹

Such smart contract risk has produced demand for insurance products. While traditional insurance options to deal with DeFi risks are reportedly still limited, DeFi insurance based on blockchain technology has begun to appear.²² One such market entrant, Nexus Mutual, claims to have grown to insure over \$1 billion in value.²³

Nexus Mutual insures against errors or hacks in blockchain transactions resulting in loss.²⁴ The insurance product is advertised as operating in a discretionary mutual structure, whereby those purchasing the product become members of the product structure who receive voting rights to whether a claim should result in a payout.²⁵ The members commit cryptocurrency to fund share pools of collateral against smart contract vulnerabilities.²⁶ Members pay a small fee, and acquire an “NXM token” that entitles them to participate, as well as to vote on governance decisions.²⁷ Then, members can “stake” (put up as collateral) cryptocurrency to fund a pool for a smart contract, or enter the details of a DeFi investment — including among other things the amount of value and the duration for the investment that will be covered — and receive a quote.²⁸ Insured users can then at any time submit a claim, which is paid when approved by the vote of members, subject to any governance measures instituted by the members.²⁹

Numerous other blockchain-based insurance protocols are also currently on offer or in development in the space.³⁰ Traditional insurers too have begun to venture into blockchain-based smart contract solutions — for instance, in the case of Allianz, to automate catastrophe swap transactions (financial instruments in which an insurer pays a third party to assume the risk of a defined catastrophic event in exchange for a string of payments).³¹

Governance Risk

Another core risk category driving novel insurance offerings in the space has been termed “governance risk.”³² While some DeFi protocols are purely autonomous after launch, many build in governance procedures, as mentioned above.³³ Commentators have suggested that protocols utilizing decentralized governance may be at risk of a malicious actor exploiting procedures to drain value from a protocol.³⁴ Observers have further noted that, while

as of August 2021 there had not yet been a successful governance attack on any Ethereum-based DeFi protocol, such attacks might arise at some point in the future.³⁵

Analysts point to more subtle governance risks that have led to new insurance opportunities as well. For instance, some protocols rely on a practice called “slashing,” which incentivizes consistent processing performance by the entities hosting the blockchain by exacting a predefined monetary penalty for lack of compliance.³⁶ Launched in June 2021, the platform Unslashed offers policies to insure against certain risks including slashing.³⁷ Unslashed’s decentralized insurance protocol has reportedly issued nearly a billion dollars of insurance coverage.³⁸ In one example, Unslashed provides \$200 million worth of slashing coverage for a prominent DeFi protocol Lido, which allows users to invest or “stake” tokens for a return.³⁹

Oracle Risk

“Oracle risk” presents a third core category that commentators have identified as particular to DeFi.⁴⁰ Oracles are systems or third parties that transfer information from the outside world into a blockchain system. For instance, Chainlink is a decentralized oracle network that provides data feeds, such as the price of Bitcoin, to many DeFi platforms, like Aave, which enables loans and interest on deposits.⁴¹ Without oracles, DeFi protocols are isolated from the outside world, and outside information like price data is necessary to make many protocols useful.⁴² However, analysts have indicated that these oracles can also pose a potential point of weakness for malicious actors to attack.⁴³ One such exploit, highlighted by a security researcher known by the Twitter handle “samczun” affected the DeFi platforms bZx and DDEX, exposing, at the time, the equivalent of \$700,000 in value.⁴⁴ Later, when the bZx platform was attacked in a different fashion, its co-founder nonetheless emphasized that the protocol was bolstering oracle security in response, noting concern that oracles could “become a central point of failure.”⁴⁵

Other commentators have identified oracle risks as systemic.⁴⁶ As one commentator noted, even if a technological solution is found “it will still take many years for that system to become trusted. And as the pot of money controlled by the oracles continues to grow, so too will the potential reward for someone who finds a flaw in the design.”⁴⁷

Despite the risk, observers suggest that oracles in their own right have a role to play in offering new opportunities to the insurance industry. The decentralized oracle network Chainlink has advertised its potential use to build “parametric” insurance products — meaning products that provide a pre-specified payout when triggered by a pre-defined event, or parameter, without adjustment — by relaying real-world data onto the blockchain.⁴⁸ Chainlink’s representatives suggest that such parametric insurance contracts could insure against clearly defined events and automatically provide a pre-agreed amount should the event occur.⁴⁹ Indeed, backers of other parametric insurance protocols have contended that such decentralized insurance could make possible reliable, automatic insurance against difficult to predict events like earthquakes, without costly and time-consuming claims investigations.⁵⁰

Regulation and the Compelling Path Forward for Insurance

While insurance in DeFi is clearly a growing market, developing regulation is sure to influence the future of the industry. Observers have taken note of the breadth and speed at which regulatory action has begun to occur. China recently intensified a crackdown on cryptocurrencies with a blanket ban on *all* cryptocurrency trading and mining.⁵¹ The U.S. Department of the Treasury too issued sanctions blacklisting a cryptocurrency platform accused of assisting cybercriminals to convert funds into traditional government-backed currencies, labeling a cryptocurrency exchange, for the first time, a “malicious cyber actor.”⁵² Further, nascent U.S. federal regulatory action has begun at the CFTC, the SEC, and the IRS.⁵³ The SEC notably has approved a Bitcoin futures-based ETF.⁵⁴ No enacted federal legislation has yet focused on DeFi, however, the currently pending infrastructure bill may change that.⁵⁵ The novelty of DeFi technology contributes to ambiguity as to the rules that DeFi must follow, and who will enforce them.⁵⁶

In this fluid space, enforcement actions are shaping the regulatory environment insurers will want to keep apprised of. On August 6, 2021, the SEC issued an order, reprimanding Blockchain Credit Partners, operators of a DeFi Money Market, in part for using smart contracts to sell digital tokens that offered specified returns, which the SEC alleged was an unregistered securities offering.⁵⁷ The DeFi Money Market operators were ordered to disgorge in excess of \$10 million in profits.⁵⁸ Recent remarks by SEC Chair Gary Gensler portend further regulatory attention. Gensler suggested that, in his view, Crypto assets are “highly speculative stores of value” that often “are offered and sold as securities” and thus “are subject to the securities laws and must work within our securities regime.” Gensler states that “significant gaps in investor protection” exist, and claims very broad SEC authority while also calling for Congressional action to grant, among other things, “additional plenary authority to write rules for and attach guardrails to crypto trading and lending.”⁵⁹

In particular, stablecoins have drawn regulatory focus. Stablecoins are crypto tokens that are pegged to some value. Many are tied to the U.S. dollar, such as tokens called USDC, Tether, and Dai. But stablecoins may be pegged to other assets, like gold — as in the case of the recently launched Djed.⁶⁰ Stablecoins are said to facilitate crypto market operation by reducing the volatility associated with other cryptocurrencies like Bitcoin or Ethereum.⁶¹ Notably, in November 2020, Bridge Mutual, a decentralized insurance provider, announced an insurance coverage offering for stablecoins, noting at that time “the massive \$20B+ stablecoin economy, which is growing at an exponential rate.”⁶² In recent remarks, however, Gensler likened stablecoins to “poker chips” and the SEC prevented the cryptocurrency exchange Coinbase from implementing a plan to pay users interest on stablecoin holdings.⁶³ Regulators have announced concerns that stablecoins are susceptible to the equivalent of bank runs and could pose systemic risk.⁶⁴ Stablecoins are said to have helped facilitate the growth of DeFi, and commentators have suggested that it is unclear how their regulation could affect the industry as a whole.⁶⁵

At present, while the DeFi ecosystem and associated insurance offerings are growing rapidly, it is unclear how emerging regulation will mold the sector. Understanding and readiness to advocate from a number of viewpoints will be essential to anyone navigating this exciting space.

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- ²⁰ See, e.g., Derek Rose, *THORChain hacked for third time in a month, with \$11m Stolen*, Stockhead (July 23, 2021), <https://stockhead.com.au/cryptocurrency/thorchain-hacked-for-third-time-in-a-month-with-a-11m-stolen/>; Woon & Kar, *supra* note 10; Klint Finley, *A \$50 Million Hack Just Showed that the DAO Was All Too Human*, Wired (June 18, 2016), <https://www.wired.com/2016/06/50-million-hack-just-showed-dao-human/>.
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famously sold an NFT of a collage for \$69 million at auction at Christie's. Fine art insurance, however, typically deals with destruction or theft of a physical object, whereas NFTs function more akin to a title. The nature of NFTs as an abstract ownership claim, combined with volatile valuations of NFTs, has introduced additional considerations for underwriting according to many observers. See Bethan Moorcraft, *How can we insure NFTs?*, Insurance Business America (July 13, 2021), <https://www.insurancebusinessmag.com/us/news/breaking-news/how-can-we-insure-nfts-260576.aspx>. These markets are reportedly growing rapidly however, and the need for insurance with them. See Adam Zuckerman, *Insuring Crypto: The Birth of Digital Asset Insurance*, 2021 U. Ill. J.L. Tech. & Pol'y 75, 88 (2021) ("The total available coverage for digital assets is projected at around \$ 6 billion with an estimated \$ 200 million to \$ 500 million in annual premiums.").

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³⁵ See Harvey *et al.*, *supra* note 3, at 135-36.

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³⁷ See *Decentralized Insurance Platform Unslashed Launches Offering Wide-ranging Policies Covering over 1\$ [sic] Billion in Crypto Assets*, Yahoo! Finance (June 2, 2021), <https://finance.yahoo.com/news/decentralized-insurance-platform-unslashed-launches-160000913.html>.

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If you have questions concerning the contents of this issue of Insurance Bulletin, or would like more information about Weil's Insurance Litigation practice, please speak to your regular contact at Weil or to the editors listed below:

Insurance Litigation Practice Co-Heads:

David Yohai	View Bio	david.yohai@weil.com	+1 212 310 8275
John P. Mastando III	View Bio	john.mastando@weil.com	+1 212 310 8064

Editor:

John P. Mastando III	View Bio	john.mastando@weil.com	+1 212 310 8064
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Assistant Editor:

Jay R. Minga	View Bio	jay.minga@weil.com	+1 212 310 8378
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Contributing Authors:

David Yohai	View Bio	david.yohai@weil.com	+1 212 310 8275
John P. Mastando III	View Bio	john.mastando@weil.com	+1 212 310 8064
Jay R. Minga	View Bio	jay.minga@weil.com	+1 212 310 8378
Heather Weaver	View Bio	heather.weaver@weil.com	+1 212 310 8864
Aaron J. Brogan	View Bio	aaron.brogan@weil.com	+1 212 310 8368
Yonatan Shefa	View Bio	yonatan.shefa@weil.com	+1 212 310 8483

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