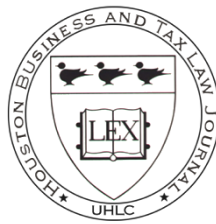


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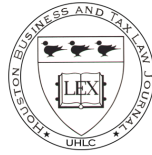
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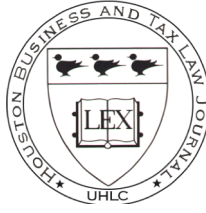
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NEW FUNDS, FAMILIAR FEARS:  
ARE EXCHANGE TRADED FUNDS MAKING  
MARKETS LESS STABLE?  
PART II – INTERACTION RISKS

*Ryan Clements\**

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## ABSTRACT

Exchange Traded Funds (ETFs) are tradeable investments that provide a return based on an underlying index or basket of assets. These investments are likely the most successful financial product since the 2008 financial crisis thanks to their remarkable growth over the past decade. Regardless of their widespread use, these products have the potential to make the financial system unstable. Like Wall Street innovations of the past, ETFs connect banks and Main Street with dangerous implications. This final article of a two-part study on ETF risks posits that these products may be introducing two interaction risks into financial markets. First, ETFs could create information cascades as well as facilitate investor herding and financial contagion. Second, ETFs could distort the informational efficiency of both the underlying assets and the securities prices by disincentivizing an active price discovery in a way that masks market risk.

Part I of this study demonstrated how ETFs could generate a fragile illusion of liquidity. This illusion is created because financial intermediaries often act unpredictably and pursue discretionary incentives in a financial crisis. This article builds on its predecessor and, as a combined study, these articles complement prior work on financial market systemic risk. Given the ETF market's continuing growth and interest from retail investors, institutions, and pensions, ETFs should be given increasing regulatory and academic attention to ensure the risks created are both understood and appropriately mitigated. This article introduces several areas where heightened focus is warranted.

## I. INTRODUCTION

A strong case can be made that Exchange Traded Funds (ETFs), which are tradeable investments that provide a return based on an underlying index or basket of assets, are the most successful financial product since the 2008 global financial crisis (GFC).<sup>1</sup> ETFs have experienced a tremendous post-GFC surge,<sup>2</sup> connecting retail investors with pension funds and major financial institutions.<sup>3</sup> Many market analysts believe ETFs are a lower-cost, tax-advantaged option over mutual funds.<sup>4</sup> Additionally, ETFs are easily tradable and instantly diversifiable—an upgrade from mutual funds.<sup>5</sup> Although they clearly generate benefits, ETFs may also be making the financial system less stable.<sup>6</sup> Even so, signs point to continued market growth,<sup>7</sup> especially in fixed-income products,<sup>8</sup> due to an ever-

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1. EVA SU, CONG. RESEARCH SERV., R45318, EXCHANGE TRADED FUNDS (ETFs): ISSUES FOR CONGRESS 1–3, 20, (2018).

2. See Mark Kolakowski, *ETF Assets Cross \$4 Trillion Milestone*, INVESTOPEDIA, <https://www.investopedia.com/etf-assets-cross-usd4-trillion-milestone-4692488> (last updated July 10, 2019) (discussing the growth of ETFs).

3. See Rachel Evans & Carolina Wilson, *How ETFs Became the Market*, BLOOMBERG (Sept. 13, 2018), <https://www.bloomberg.com/graphics/2018-growing-etf-market/?srnd=etfs> (“Banks were forced to shed large inventories to bolster their balance sheets. And retail investors who’d lost their shirts went looking for ways to diversify their risk. ETFs offered both a solution.”).

4. Zachary R. Mider et al., BLOOMBERG (Mar. 29, 2019), <https://www.bloomberg.com/graphics/2019-etf-tax-dodge-lets-investors-save-big/>.

5. See *What is an ETF?*, BLACKROCK, <https://www.blackrock.com/ca/individual/en/learning-centre/etf-education/what-is-an-etf?switchLocale=y&siteEntryPassthrough=true> (last visited Nov. 4, 2019) (“An ETF can provide you with access to a diversified portfolio of stocks or bonds in a single investment that trades just like a stock.”).

6. See Marco Pagano et al., *Can ETFs Contribute to Systemic Risk?* 2–3, 8 (Eur. Systemic Risk Bd., Reports of the Advisory Sci. Committee, Working Paper No. 9, 2019), [https://www.esrb.europa.eu/pub/pdf/asc/esrb.asc190617\\_9\\_canetfscontribute\\_systemicrisk~983ea11870.en.pdf](https://www.esrb.europa.eu/pub/pdf/asc/esrb.asc190617_9_canetfscontribute_systemicrisk~983ea11870.en.pdf) [hereinafter ESRB Report] (“[T]here is evidence that ETFs are associated with increased price volatility of the constituent securities: the high liquidity and continuous trading of ETFs enable investors, including noise traders, to take large short-term directional positions on entire asset baskets.”).

7. See *The ETF Network Effect*, BLACKROCK, <https://www.blackrock.com/americas-offshore/insights/etf-growth> (last visited Nov. 4, 2019) (“Four trends will fuel future ETF growth, especially in the U.S. and Europe: Portfolio construction preferences are shifting with the recognition that management fees have significant impact on long-term returns. Use of low-cost, index-based ETFs as core positions is likely to grow with ETFs increasingly used as building blocks in asset allocation and as vehicles to deliver factor-based investment strategies. A transformation in the business model for financial advice is under way in the U.S. and will soon begin in Europe. ETFs are positioned to be prime beneficiaries of this secular transition, since financial advisors and wealth managers will have incentives to place low-cost ETFs at the heart of portfolios. Bond trading is evolving. The liquidity that many institutions once took for granted is evaporating. To facilitate large transactions, investors are increasingly likely to use bond ETFs alongside single securities. ETF market scale and product standardization will reinforce adoption. As more

expanding choice of products, including thematic styles,<sup>9</sup> and a growing dominance of mega-ETF issuers like BlackRock, Vanguard, and State Street.<sup>10</sup>

The ETF ecosystem provides a powerful case study of the financial market's evolution in technology and speed. Not only are these products commonly promoted by algorithmic wealth management platforms (robo-advisors),<sup>11</sup> ETFs are embraced by high-frequency traders (HF traders) who profit by providing daily liquidity and market-making activity.<sup>12</sup> However, an in-depth investigation of the complex ETF operating ecosystem reveals layers of inter-connected relationships amongst product creators, intermediating participants, and retail and institutional investors.<sup>13</sup>

Market risks driven by these products emanate from how ETF intermediaries interact in the ETF ecosystem.<sup>14</sup>

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investors participate, and the market expands, ETFs become more efficient to trade and cheaper to own. The network effect will accelerate future ETF adoption by investors big and small.”).

8. See ESRB Report, *supra* note 6, at 4 n.2 (“The passive nature of ETFs in that they constitute investments in fixed-income products may in principle create a moral hazard problem in the issuance of such products: anticipating that they will be bought by ETFs, bond underwriters may forgo due diligence on such instruments, as was the case in the originate-to-distribute business model before the global financial crisis.”); see also Amiyatosh Purnanandam, *Originate-to-Distribute Model and the Subprime Mortgage Crisis*, 24 REV. FIN. STUD. 1881, 1892–93 (2011), [https://pdfs.semanticscholar.org/cc7f/51f52c2f6e296b734ee024e785b08122b194.pdf?\\_ga=2.28322300.1748229761.1581291199-2038099047.1581291199](https://pdfs.semanticscholar.org/cc7f/51f52c2f6e296b734ee024e785b08122b194.pdf?_ga=2.28322300.1748229761.1581291199-2038099047.1581291199).

9. See Jennifer Thompson, *Virtue Signaling ETFs: Religion, Veganism and Marijuana Used to Tap Trends*, FIN. TIMES (July 28, 2019), <https://www.ft.com/content/7d4147e2-9e2e-11e9-b8ce-8b459ed04726> (noting that the ever-expanding menu of ETF choices also includes virtue signals and trends including religion, veganism and marijuana).

10. SU, *supra* note 1, at 16 (“The top three ETF sponsors (also known as asset managers or issuers)—BlackRock (40%), Vanguard (25%), and State Street (18%)—account for around 83% of U.S. ETF market share.”).

11. See Hugh Son, *JP Morgan Is Rolling Out a Robo-Adviser with Free ETFs to Lure New Investors*, CNBC (July 10, 2019, 7:00 AM), <https://www.cnbc.com/2019/07/10/jpmorgan-creates-robo-adviser-you-invest-portfolios-with-free-etfs.html>.

12. See Ivan Martchev, *Opinion: This is How Some ETFs are Run Like a Shell-Game Scam*, MARKETWATCH (June 27, 2018, 10:54 AM), <https://www.marketwatch.com/story/this-is-how-some-etfs-are-run-like-a-shell-game-scam-2018-06-27> (“There are numerous ways to ‘shave’ nickels and dimes with bid-ask spreads, tracking errors and the like, so in the majority of cases the arbitrageurs are the ones that make the money at the expense of individual investors.”).

13. See generally SU, *supra* note 1, at 2–7 (describing the general structure and mechanics of ETFs).

14. Ryan Clements, *New Funds, Familiar Fears: Are Exchange Traded Funds Making Markets Less Stable? Part I, Liquidity Illusions*, 20 HOUS. BUS. & TAX. L. J. 14, 17 (2020) (“[ETF] liquidity, however, could prove both illusory and fragile when it matters most, like during a stock market crash or a full-blown financial crisis, because it relies on

Unfortunately, due to operational complexity, the risks ETFs generate are not well understood. This study's first article described how intermediary interactions with ETFs have the potential to create the illusion of liquidity, an illusion that could prove fragile in a crisis if ETF participants pursue incentives that are discretionary and self-interested.<sup>15</sup> It used examples from 1987's "Black Monday" crash and the GFC to highlight the idea that relying on certain actions by financial intermediaries in the middle of a crisis is tenuous.<sup>16</sup> In such a situation, it is questionable whether these financial intermediaries will act to provide discretionary liquidity to investors or stabilize prices through touted arbitrage intervention methods.<sup>17</sup>

This article complements its predecessor and argues that two significant interaction risks originate from the ETF ecosystem. First, ETFs have the potential to create information cascades, facilitate investor herding, and induce contagion.<sup>18</sup> Second, ETFs may distort the prices of underlying assets, thus disincentivizing price discovery and making markets less informationally efficient.<sup>19</sup>

Given these risks and the substantial participation in ETF markets by retail investors, pensions, and large institutions, heightened attention in regulatory, investor, and academic areas should be directed to these instruments in order to gain a better understanding of the consequences of ETF's post-GFC growth and to ensure that mitigating safeguards are established against emerging instabilities.<sup>20</sup>

The first section of this article outlines how ETFs could contribute to information cascades, investor herds, and contagion. It defines the concept of concentration risk as applied to the ETF ecosystem intermediaries such as authorized participants (APs),<sup>21</sup> market makers,<sup>22</sup> and fund sponsors.<sup>23</sup> It

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the discretionary behaviors of intermediating financial institutions in a complex operational ecosystem.”).

15. *Id.* at 39–40.

16. *Id.* at 45.

17. See Andrei Shleifer & Robert W. Vishny, *The Limits of Arbitrage*, 52 J. FIN. 35, 37 (1997) (“We show that performance-based arbitrage is particularly ineffective in extreme circumstances, where prices are significantly out of line and arbitrageurs are fully invested. In these circumstances, arbitrageurs might bail out of the market when their participation is most needed.”).

18. See *infra* Section II.

19. See *infra* Section III.

20. See *infra* Section IV.

21. See Clements, *supra* note 14, at 42 (“Liquidity shortages via concentration risk are a relevant consideration for APs . . . because an idiosyncratic even for a prominent ETF ecosystem intermediary could trigger a contagion across the market.”) (footnote omitted); see also ROCHELLE ANTONIEWICZ & JANE HEINRICH, INV. CO. INST., THE ROLE

continues to show how the failure of a prominent intermediary could trigger an investor run.<sup>24</sup> Finally, it discusses how cascade selling could arise from either independent profit-seeking actions of APs or interactions between ETF secondary market trading and sales of underlying assets.<sup>25</sup> This section also notes the impact robo-advisors and HF traders have on information cascades and investor herding in ETFs.<sup>26</sup>

The article's second section argues that complex interactions in the ETF ecosystem could be both making financial markets less informationally efficient and disincentivizing active price discovery.<sup>27</sup> This section outlines how prices of underlying ETF assets and securities might be artificially inflated by demand from index investors who are not engaging in active price discovery—a contention supported by several prominent investors. This artificial inflation can distort the true value of index securities via noise transmission coming from intermediating participants.<sup>28</sup> To support this contention, this article presents empirical evidence from several recent studies that show how price and liquidity co-movement in securities can comprise ETF indices and contribute to more volatile markets.<sup>29</sup>

This article seeks to provide a unique contribution to the literature on systemic risk and financial crises by illustrating how information cascades, investor herds, and price and informational inefficiencies were present leading up to the GFC,

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AND ACTIVITIES OF AUTHORIZED PARTICIPANTS OF EXCHANGE-TRADED FUNDS, 1 n.2 (Mar. 2015), [https://www.ici.org/pdf/ppr\\_15\\_aps\\_etfs.pdf](https://www.ici.org/pdf/ppr_15_aps_etfs.pdf) (“In addition, APs are U.S.-registered self-clearing broker-dealers that can process all required trade submission, clearance, and settlement transactions on their own account, as well as full participating members of the National Securities Clearing Corporation and Depository Trust Company.”); BLACKROCK, A PRIMER ON ETF PRIMARY TRADING AND THE ROLE OF AUTHORIZED PARTICIPANTS 3 (Mar. 2017), <https://www.blackrock.com/corporate/literature/whitepaper/viewpoint-etf-primary-trading-role-of-authorized-participants-march-2017.pdf> (listing examples of “Common U.S. APs” such as Bank of America Merrill Lynch, Citigroup, Credit Suisse, Deutsche Bank, Goldman Sachs & Co., Jeffries, JP Morgan, KCG, Morgan Stanley, UBS Securities, and Virtu).

22. See Clements, *supra* note 14, at 42 (“Liquidity shortages via concentration risk are a relevant consideration for . . . non-AP market makers . . . because an idiosyncratic event for a prominent ETF ecosystem intermediary could trigger a contagion across the market.”) (footnote omitted).

23. *Id.*

24. See *infra* Section II(C).

25. See *infra* Section II(E).

26. See *infra* Section II(F).

27. See *infra* Section III.

28. See *infra* Section III(C).

29. See *infra* Section III(C)–(D).

during the GFC, and in post-GFC flash crashes.<sup>30</sup> Specifically, information cascades and investor herds were evidenced by the demand for mortgage-backed securities and the subsequent run on Lehman Brothers in the wholesale funding market.<sup>31</sup> Herding behavior was also prominent in the auction rate securities (ARS) market failure during the GFC.<sup>32</sup>

The GFC provides a tragic lesson on how complexity in financial product innovation and intermediary interconnectedness can decrease the efficiency of information in financial markets. When this happens, catastrophic risks build up and go unnoticed until the market crashes. During the GFC, this was evidenced not only by the market's inability to respond to new information leading up to Lehman's failure,<sup>33</sup> but also by the risks that were overlooked in the market for mortgage-backed securities during the subprime lending boom.<sup>34</sup> This article presents a growing body of empirical evidence to support the proposition that ETFs are also contributing to a less efficient market, a development that should be seriously considered by regulators, academics, and investors of all stripes. The concluding section will identify specific areas where heightened research attention is warranted.

## II. COULD ETFs FACILITATE INVESTOR HERDING?

### A. *Herding, Information Cascades, and Crowd-Panic in Financial Markets*

As documented by Michael Lewis, a best-selling author and former bond trader, instances of investor herding and crowd mania were prevalent in the "Black Monday" stock market crash of 1987,<sup>35</sup> the East-Asian financial crisis in the 1990s,<sup>36</sup> the dot-

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30. See Dave Nadig, *Understanding ETF Flash Crashes*, ETF.COM (Aug. 26, 2015), <https://www.etf.com/sections/blog/understanding-etf-flash-crashes?nopaging=1>; *infra* Section II(B); *infra* Section III(E).

31. See Viral V. Acharya & Matthew Richardson, *Causes of the Financial Crisis*, 21 CRITICAL REV.: J. POL. & SOC'Y 195, 196, 208–09 (2009); William O. Fisher, *Predicting a Heart Attack: The Fundamental Opacity of Extreme Liquidity Risk*, 86 TEMP. L. REV. 465, 467 (2014); *infra* Section III(E).

32. See *infra* Section III(E).

33. See Fisher, *supra* note 31, at 485 ("[T]he lenders continued to lend—without adjusting terms in response to new information—through the decline in Lehman's fortunes during the first and second quarters.") (footnote omitted).

34. Steven L. Schwarcz, *Regulating Complexity in Financial Markets*, 87 WASH U. L. REV. 211, 218–220 (2009) [hereinafter *Regulating Complexity*].

35. MICHAEL LEWIS, PANIC! THE STORY OF MODERN FINANCIAL INSANITY 46–56 (1st ed. 2009).

36. *Id.* at 117–18.

com boom,<sup>37</sup> and the GFC.<sup>38</sup> Researchers have suggested that investor herding increases systemic risk and negatively impacts the production of information.<sup>39</sup> Additionally, during a financial panic, mimicry in the marketplace creates information cascades that disable portions of the market altogether.<sup>40</sup> Information cascades have been described as situations “when a market participant can easily observe the behavior of those around him and follows the behavior of the other market participants without regard to his or her information, beliefs, or views of the market.”<sup>41</sup> In other words, information cascades are a form of market group think “where even rational individuals will choose to abandon their private information (or not make efforts to gather information in the first place) and instead to follow the crowd.”<sup>42</sup> Thus, these information cascades cause investors to follow the behavior of other investors instead of relying on the “subjective probability regarding the payoff of a particular action, transaction, or contractual term” even though the latter is generally a more effective signal of market trends and information.<sup>43</sup>

Professor Steven Schwarcz has captured how such events create sequential ordering and how some investor actions, such as selling a particular asset class, are seen by other investors as decisions supported by better information.<sup>44</sup> This response can

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37. *Id.* at 162–263.

38. *Id.* at 283–366.

39. See Ian Ayres & Joshua Mitts, *Anti-Herding Regulation*, 5 HARV. BUS. L. REV. 1, 2 (2015).

40. See *id.* at 4.

41. Jonathan R. Macey & James P. Holdcroft, Jr., *Failure is an Option: An Ersatz-Antitrust Approach to Financial Regulation*, 120 YALE L. J. 1368, 1383–84 (2011); see also Bryan Druzin & Jessica Li, *Censorship's Fragile Grip on the Internet: Can Online Speech be Controlled*, 49 CORNELL INT'L L. J. 369, 387–88 (2016) (“The basic crux of the [information cascade] concept is as follows: people observe the behavior of others and draw a conclusion regarding a certain factual state of affairs. This conclusion then informs their own behavior, which in turn affects the beliefs and behaviors of others running through the same calculation. The result is that this can set off a chain reaction of sorts, where a single spark can ignite a prairie fire, as one scholar vividly describes it.”) (footnote omitted).

42. Seth C. Oranburg, *A Place of Their Own: Crowds in the New Market for Equity Crowdfunding*, 100 MINN. L. REV. HEADNOTES 147, 152 (2016).

43. See Ayres & Mitts, *supra* note 39, at 18; see also Sushil Bikhchandani, David Hirshleifer & Ivo Welch, *A Theory of Fads, Fashion, Custom, and Cultural Change as Informational Cascades*, 100 J. POL. ECON. 992, 994, 1016 (1992); Sushil Bikhchandani, David Hirshleifer & Ivo Welch, *Learning from the Behavior of Others: Conformity, Fads, and Informational Cascades*, 12 J. ECON. PERSP., Summer 1998, at 151, 167–68.

44. See Steven L. Schwarcz, *Regulating Complacency: Human Limitations and Legal Efficacy*, 93 NOTRE DAME L. REV. 1073, 1077–78 (2018) (“An information cascade ‘has the potential to occur when people make decisions sequentially, with later people

set off a chain reaction of group behavior, also known as “the fragility of mass behaviors,” which can produce a procyclical effect.<sup>45</sup> Professor Robert Hockett calls this a recursive collective action problem and notes that many “familiar regulatory and policy challenges [in financial markets] . . . constitute instances of this general phenomenon.”<sup>46</sup>

*B. Herding and Information Cascades During and After the Global Financial Crisis*

Early in the GFC, Professor Cass Sunstein warned about mass herding and information cascades problems, ones he called “lemmings” problems, and suggested that psychology was just as important as economics in determining the necessary regulatory response.<sup>47</sup> Sunstein identified numerous cascades where an individual’s actions seemed to be influenced by the judgments of others, not by that individual’s private decision making process.<sup>48</sup> The net result was a “social contagion” of bad decisions involving stereotypical assumptions, including both the pre-GFC axiom that real estate prices always increased over time and the pessimism that stocks were inherently risky, which lead to widespread selling and price destabilization.<sup>49</sup>

The frenzied worldwide demand for mortgage-backed securities leading up to the GFC, which was driven by “a misleading information cascade about the value of such MBS,”<sup>50</sup> is another example of herding behavior and information cascades. Commercial and investment banks were not immune; there is also documented evidence from the GFC of herding behavior by these sophisticated institutions as well.<sup>51</sup> Ultimately, the GFC showed how the onset of information cascades leads to

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watching the actions of earlier people and from these actions inferring something about what the earlier people know.”).

45. Druzin & Li, *supra* note 41, at 387 (explaining that a procyclical effect is where the behaviors of the crowd cause the initial fallout from the crisis to become worse).

46. See Robert Hockett, *Recursive Collective Action Problems: The Structure of Procyclicality in Financial and Monetary Markets, Macroeconomics and Formally Similar Contexts*, 3 J. FIN. PERSP., July 2015, at 1, 1.

47. Cass R. Sunstein, *Wall Street’s Lemmings*, NEW REPUBLIC (Oct. 10, 2008), <https://newrepublic.com/article/63023/wall-streets-lemmings>.

48. *Id.*

49. *Id.*

50. Schwarcz, *supra* note 44, at 1078; see also Brett McDonnell, *Don’t Panic! Defending Cowardly Interventions During and After a Financial Crisis*, 116 PENN. ST. L. REV. 1, 27 (2011) (“[I]n the presence of widespread high degrees of leverage, even relatively small bad news can lead to a downward cascade: as borrowers default, banks face possible runs, and banks become unwilling to lend additional funds”).

51. See M. Humayun Kabir, *Did Investors Herd During the Financial Crisis?: Evidence from the US Financial Industry*, 18 INT’L REV. FIN. 59, 86–87 (2018).



panicked selling and creates a financial contagion across global markets.<sup>52</sup> Further, investor runs on liquidity create self-fulfilling panics and cause a nearly simultaneous intermediary coordination failure in the ARS market.<sup>53</sup> A Federal Reserve Board working study on the ARS market noted that “coordination failure among dealers triggered by . . . an unexpected first-mover” caused all major broker-dealers to simultaneously withdraw their liquidity support.<sup>54</sup>

World Bank researchers note that wholesale funding markets were also affected by this cascade.<sup>55</sup> Wholesale funding markets—including commercial paper, repos, and interbank loans—provide banks with a non-depository source of short-term financing.<sup>56</sup> In September 2008, banks, such as Lehman Brothers, were exposed to substantial liquidity crunches, which froze wholesale funding markets.<sup>57</sup> Observers reported that “access to wholesale funding evaporated in a matter of days, if not hours,”<sup>58</sup> and caused a sharp, widespread collapse. Thus, one important lesson learned from the GFC that can be used to evaluate ETF-related risks is that interactions between financial intermediaries can exacerbate a financial crisis.<sup>59</sup>

Before the GFC, financial institutions acted as both lenders and borrowers, driving amplification mechanisms and causing other network effects. The securitization practices of these institutions “led to an opaque web of interconnected obligations” and the result was catastrophic.<sup>60</sup> Although ETF intermediaries

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52. See Steven B. Kamin & Laurie Pounder DeMarco, *How Did a Domestic Housing Slump Turn into a Global Financial Crisis?* 31 J. INT'L MONEY & FIN. 10, 11 (2012); see also OXFORD ANALYTICA, *U.S. Financial Crisis Goes Global*, FORBES (Sept. 22, 2008, 5:00 AM), [https://www.forbes.com/2008/09/19/banks-contagion-globalization-cx\\_0919oxford.html#12eb57b33ed9](https://www.forbes.com/2008/09/19/banks-contagion-globalization-cx_0919oxford.html#12eb57b33ed9).

53. See Song Han & Dan Li, *Liquidity Crisis, Runs, and Security Design: Lessons from the Collapse of the Auction Rate Securities Market* 27–28 (Fed. Reserve Bd., Fin. & Econ. Discussion Series, Working Paper No. 2010-50, 2010), <https://www.federalreserve.gov/pubs/feds/2010/201050/201050pap.pdf>.

54. *Id.* at 2.

55. See Claudio Raddatz, *When the Rivers Run Dry: Liquidity and the Use of Wholesale Funds in the Transmission of the U.S. Subprime Crisis* 2–3 (World Bank, Policy Research Working Paper No. 5203, 2010), [https://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=1559720](https://papers.ssrn.com/sol3/papers.cfm?abstract_id=1559720) (discussing the banks' reliance on wholesale funding and its contribution to the financial crises with a particular focus on the bankruptcy of Lehman Brothers).

56. *See id.* at 7.

57. *See id.* at 3.

58. *Id.* (quoting *Lifelines*, ECONOMIST (Oct. 9, 2008), <https://www.economist.com/finance-and-economics/2008/10/09/lifelines>).

59. See Markus Brunnermeier, *Deciphering the Liquidity and Credit Crunch 2007–2008*, 23 J. ECON. PERSP., Winter 2009, at 77, 78.

60. *Id.* at 78, 96–98.

do not act as both lenders and borrowers, similar results are possible when these intermediaries act as both ETF arbitrageurs and the underlying asset managers or dealers.<sup>61</sup>

Herding did not end with the GFC; recent empirical evidence has also identified herding in the flash crash of May 2010.<sup>62</sup> Intraday S&P 500 price data was used to show that market herding behavior started right before the crash and continued through the aftermath.<sup>63</sup> The price data also demonstrates a correlation between herding, flash events, and sudden price fluctuations.<sup>64</sup>

### C. How Could ETFs Create Investor Herds?

An ETF is a collective investment vehicle that provides “market exposure at lower fees.”<sup>65</sup> ETFs, like index mutual funds, are based on a momentum strategy; underlying assets are purchased when ETF investor money flows in and are sold when investor money flows out.<sup>66</sup> Thus, investor demand for ETFs creates artificial popularity for the underlying assets comprising an index—or representative basket—during in-flow periods, while simultaneously having the potential to unleash a bottleneck of future risk during a market sell-off.<sup>67</sup> Given the nascent surge in passive investing, a bear market sell-off in ETFs could facilitate an investor stampede on the underlying asset market if active arbitrageurs are unable to stabilize the market by purchasing the underlying assets.<sup>68</sup> However, as noted in Part I of this study, ETF arbitrageurs are notoriously unreliable during a liquidity crisis, which can further intensify herding behavior and investor stampedes.<sup>69</sup> As John Bogle, the late founder of Vanguard, ominously stated: “If everybody indexed,

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61. See Kevin Pan & Yao Zeng, *ETF Arbitrage Under Liquidity Mismatch 2* (Eur. Systemic Risk Bd., Working Paper No. 59, 2017).

62. Riza Demirer et al., *Herding and Flash Events: Evidence From the 2010 Flash Crash*, 31 FIN. RES. LETTERS 476, 476 (2019).

63. *Id.*

64. *Id.*

65. David Thomas, *A Warning from the Late John Bogle*, FORBES (Feb. 12, 2019, 5:55 AM), <https://www.forbes.com/sites/greatspeculations/2019/02/12/a-warning-from-the-late-john-bogle/#6c00a7d62b99>.

66. *Id.*; see also Clements, *supra* note 14, at 23–25 (providing further explanation of the relationships between demand for ETFs and the purchasing of underlying assets).

67. See Michael Cannivet, *The Passive Investing Boom Poses a New Risk: Artificial Popularity*, FORBES (June 27, 2018, 9:44 AM), <https://www.forbes.com/sites/michaelcannivet/2018/06/27/the-passive-investing-boom-poses-a-new-risk-artificial-popularity/#4ef54d843e93>.

68. Thomas, *supra* note 65; see also Clements, *supra* note 14, at 45.

69. See Clements, *supra* note 14, at 48.

the only word you could use is chaos, catastrophe . . . . The markets would fail.”<sup>70</sup> Regulators and lawmakers would do well to take heed of Bogle’s warning and institute safeguards where necessary.

Because the ETF-issuing market is highly concentrated,<sup>71</sup> ETFs generate a second possible information cascade with regards to financial intermediaries (like APs and market makers) and swap counterparties (for synthetic ETFs).<sup>72</sup> In a report from June 2019 (the ESRB Report), the European Systemic Risk Board (ESRB) concluded that if a large ETF fund issuer had an operational disruption or a serious case of fraud or financial misconduct, then trust in the market could quickly evaporate and lead to an ETF contagion sell-off.<sup>73</sup> Additionally, as noted recently by Ireland’s Central Bank, a stress event affecting a large AP could cause a significant ripple effect throughout the ETF market.<sup>74</sup> If consolidation occurs between market maker or AP firms,<sup>75</sup> it could further intensify the potential for herding and first-mover influence while concurrently reducing the number of available APs who could step in to correct mispricing and liquidity shortages.<sup>76</sup> This situation itself could cause a crisis due to inherent dangers and market fragility associated with liquidity issues.<sup>77</sup>

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70. Thomas, *supra* note 65.

71. See, e.g., SU, *supra* note 1, at 16 (finding that the top three ETF issuers (BlackRock, Vanguard, and State Street) account for roughly 83% of U.S. ETF market share); ESRB Report, *supra* note 6, at 31 (finding that the three main suppliers in the ETF market segment manage assets, not limited to ETFs, in excess of USD 10 trillion).

72. See ESRB Report, *supra* note 6, at 3, 16–18, 20, 30 (finding that due to this high degree of concentration, materialisation of operational risks in a major issuer may generate widespread sales of ETFs and other systematic consequences).

73. *Id.* at 31.

74. CENT. BANK OF IR., FEEDBACK STATEMENT ON DP6 – EXCHANGE TRADED FUNDS 11 (Sept. 14, 2018), <https://www.centralbank.ie/docs/default-source/publications/discussion-papers/discussion-paper-6/feedback-statement-on-exchange-traded-funds---discussion-paper-6.pdf?sfvrsn=2> [hereinafter DP6 FEEDBACK STATEMENT].

75. *Id.* There is some evidence that the market for AP ETF arbitrage is, however, growing more robust with additional competition. See Siobhan Riding, *Watchdogs Probe Systemic Risks of Passive Fund Growth*, FIN. TIMES (Apr. 1, 2019, 3:07 AM), <https://www.ft.com/content/a1deabc2-3eab-11e9-9499-290979c9807a> (claiming an industry source stated that his company used 30 market makers or APs in 2019, and less than 10 in 2014).

76. See Song Han & Dan Li, *The Fragility of Discretionary Liquidity Provision: Lessons from the Collapse of the Auction Rate Securities Market* 1, 3–4, 27, 29 (Fed. Reserve Bd., Working Paper No. 210-50, 2010), [https://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=1898324](https://papers.ssrn.com/sol3/papers.cfm?abstract_id=1898324) (illustrating an analogous application from the GFC that shows how liquidity is “fragile” during a crisis).

77. See Clements, *supra* note 14, at 17, 20.

If dealers and market makers start incurring losses, or if their balance sheets are negatively impacted by other exposures and can no longer bear additional risk, they will stop providing liquidity to the secondary ETF market.<sup>78</sup> Administratively speaking, ETFs are cheap and, generally, there is a low tolerance for liquidity risk.<sup>79</sup> Therefore, active funds holding ETFs in their portfolio will likely sell alongside the herd because the risk of being wrong is too high—they cannot afford to contest the crowd.<sup>80</sup>

Professors Ayan Bhattacharya and Maureen O’Hara have theorized about the potential for herding-induced fragility in ETFs using a tractable model of ETF trading.<sup>81</sup> Specifically, Bhattacharya and O’Hara identify a potential “tail wagging the dog” phenomenon that occurs when ETF market volatility impacts the price volatility of the underlying assets “even [though] such information is irrelevant for a particular underlying asset.”<sup>82</sup> In other words, market makers who interpret price data in ETFs by using pricing information from the underlying assets “cannot perfectly distinguish between price changes caused by factors pertinent to their asset, and other factors irrelevant to them.”<sup>83</sup> This creates market instability.<sup>84</sup>

The potential for herding emerges when market makers cannot synchronize the ETF and underlying asset prices (via the ETF arbitrage mechanism) and spectators start trading in unison based on the systematic factor signal—a signal that is unhinged from asset price information.<sup>85</sup> For example, the ETF arbitrage mechanism temporarily failed in February 2018 when Inverse VIX products traded at 18 times its net asset value, resulting in coordinated market maker movements, decreased liquidity, and deviations between ETF prices and their net asset values.<sup>86</sup>

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78. Cf. Han & Li, *supra* note 76, at 4, 29 (discussing the failure of auction dealers to continue making markets for investors during the 2008 financial crisis to save their own financial capital).

79. See DP6 FEEDBACK STATEMENT, *supra* note 74, at 4.

80. See Steven L. Schwarcz, *Rethinking the Disclosure Paradigm in a World of Complexity*, 2004 U. ILL. L. REV. 1, 14–15, 33–34 (2004).

81. Ayan Bhattacharya & Maureen O’Hara, *Can ETFs Increase Market Fragility? Effect of Information Linkages in ETF Markets* 3–4 (Apr. 17, 2018) (unpublished manuscript), <https://ssrn.com/abstract=2740699>.

82. *Id.* at 31.

83. *Id.* at 3.

84. *Id.* at 3–4.

85. *Id.* at 4. The authors define “systematic factor signal” as a situation where a “short-horizon equilibrium involves all speculators trading on the same signal.” *Id.* at 24.

86. See Henry T. C. Hu & John D. Morley, *A Regulatory Framework for Exchange-Traded Funds*, 91 S. CAL. L. REV. 839, 846, 861–63 (2018).

During the May 2010 flash crash, and again in August 2015, ETFs that held long exposure to U.S. domestic equities suffered an arbitrage breakdown with similar mischief.<sup>87</sup> The ETF market is only expected to grow, and the regulatory regime must be updated accordingly to protect the market from these inherent dangers. The unified regime was recently proposed by Professors Henry Hu and John Morley; it requires enhanced qualitative and quantitative disclosures for the ETF arbitrage mechanism.<sup>88</sup> Another proposed reform would open primary market access to holders of ETF shares that were obtained in the secondary market.<sup>89</sup> However, this second proposed reform is beset with practical complexities.

The ESRB Report is another important resource for regulators that identifies the possibility for procyclical market movements influenced by complex ETFs, such as those utilizing leverage and rule-based trading strategies.<sup>90</sup> A decoupling of the ETF arbitrage mechanism could lead to a coordinated fire sale as investors lose faith in the ETF operational ecosystem and look to liquidate positions en masse.<sup>91</sup> The ESRB Report also notes that ETFs increase market risk by “inducing investors to take correlated [risk] exposures that may trigger a chain reaction with systemic . . . implications.”<sup>92</sup> Regulators and lawmakers should take these findings into account when instituting a regulatory regime for ETFs.

#### *D. The Rise of the Passive Investor*

Since 2009, passive equity investments have increased by more than \$2.5 trillion while over \$2.0 trillion has been withdrawn from actively managed funds.<sup>93</sup> This trend has become so pervasive that one reporter recently referred to it as

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87. *Id.* at 846, 857–62.

88. *Id.* at 849.

89. *See* CENT. BANK OF IR., EXCHANGE TRADED FUNDS DISCUSSION PAPER 26 (2017), <https://www.centralbank.ie/docs/default-source/publications/discussion-papers/discussion-paper-6/discussion-paper-6---exchange-traded-funds.pdf?sfvrsn=6> [hereinafter CBI DISCUSSION PAPER].

90. *See* ESRB Report, *supra* note 6, at 22–23.

91. *Id.*; *see also* Qing Bai et al., *The Impact of Leveraged and Inverse ETFs on Underlying Real Estate Returns*, 43 REAL EST. ECON. 37, 37 (2015); Pauline Shum et al., *Intraday Share Price Volatility and Leveraged ETF Rebalancing*, 20 REV. OF FIN. 2379, 2380 (2016); Clements, *supra* note 14, at 30–32.

92. ESRB Report, *supra* note 6, at 3, 18.

93. James Rickards, *Free-Riding Investors Set up Markets for a Major Collapse*, DAILY RECKONING (Sept. 24, 2018), <https://dailyreckoning.com/free-riding-investors-set-up-markets-for-a-major-collapse/>.

the “Passive Singularity.”<sup>94</sup> However, the growth of passive investments has been met with mixed reactions. For example, in 2017, the managers at FPA Capital Fund referred to ETFs as “weapons of mass destruction” because investors can purchase ETFs without regard for valuation.<sup>95</sup>

There are numerous reasons why passive investing has risen in popularity. Economists and Nobel Prize Laureates George Akerloff and Robert Shiller have detailed the variability and arbitrariness of individual investment decisions based on what they call “animal spirits,” a human tendency towards irrationality.<sup>96</sup> Even though cultivating savings is a necessary condition for long-term individual welfare and national prosperity,<sup>97</sup> Akerloff and Shiller contend that “[p]eople have a hard time knowing what to save,” which often results in a “deer-in-the-headlights” phenomenon when making investment decisions.<sup>98</sup> An ETF appears to relieve this perplexity by reducing decision-making friction that many individuals experience and facilitating a simple “buy-the-market” dynamic. However, the rise of passive investing has also been attributed to a post-GFC period of liquidity and loose monetary policy that has driven asset value inflation.<sup>99</sup> There has also been a contentious and unsettled debate regarding common ownership by index-based funds (like ETFs) and the additional social utility and deleterious impact on consumer prices, competition, shareholder engagement, and executive compensation.<sup>100</sup>

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94. Dani Burger, *Passive Becomes the New Active as Indexing Rules Everything*, GLOBE & MAIL (Mar. 1, 2018), <https://www.theglobeandmail.com/globe-investor/funds-and-etfs/etfs/passive-becomes-the-new-active-as-indexing-rules-everything/article38161099/>.

95. *A Dire Warning About ETFs*, BARRON'S (Apr. 27, 2017, 4:08 PM), <https://www.barrons.com/amp/articles/a-dire-warning-about-etfs-1493323704>.

96. See GEORGE A. AKERLOFF & ROBERT J. SHILLER, ANIMAL SPIRITS: HOW HUMAN PSYCHOLOGY DRIVES THE ECONOMY, AND WHY IT MATTERS FOR GLOBAL CAPITALISM 116–30 (2nd ed. 2010).

97. See *id.* at 123–27.

98. *Id.* at 119–20.

99. Lance Roberts, *The Risk of an ETF-Driven Liquidity Crash*, SEEKING ALPHA (Oct. 2, 2018, 6:12 AM), <https://seekingalpha.com/article/4209301-risk-etf-driven-liquidity-crash>.

100. Compare BLACKROCK, INDEX INVESTING AND COMMON OWNERSHIP THEORIES 1, 15 (Mar. 2017), <https://www.blackrock.com/corporate/literature/whitepaper/viewpoint-index-investing-and-common-ownership-theories-eng-march.pdf> (explaining that common ownership is defined as “owners that hold shares of several companies in an industry, including asset managers acting on their behalf” and advocating that “[i]ndex investing is a critical tool for asset owners to access financial markets.”) with Eric A. Posner et al., *A Proposal to Limit the Anti-Competitive Power of Institutional Investors*, 81 ANTITRUST L. J. 669, 676–77 (2017) (arguing that common ownership practices by institutional investors are creating competition problems and raising prices); see also Einer Elhauge, *Horizontal Shareholding*, 129 HARV. L. REV. 1267 (2016) (“Horizontal shareholdings exist

Some industry participants believe that passive investing isn't benign at all, but is instead a form of inefficient, centrally-planned Marxist economics.<sup>101</sup> These industry participants also believe that active investment performs an important social function in terms of asset allocation, environmental governance, and social governance. Accordingly, because the number of indexes and passive products has grown so large, determining what products to invest in now requires an active decision—one that can be provided by model portfolios and robo-advisors.<sup>102</sup>

### *E. Collective Ownership, Firm Incentives, and Herd Formation*

One concerning by-product of passive investing is the effect that it may have on firm incentives.<sup>103</sup> Ironically, recent economic research suggests that firms with overlapping sets of investors have a perverse incentive to “distort competitive behavior,

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when a common set of investors own significant shares in corporations that are horizontal competitors in a product market. Economic models show that substantial horizontal shareholdings are likely to anticompetitively raise prices . . . .”); Einer Elhauge, *The Causal Mechanisms of Horizontal Shareholding*, 82 OHIO ST. L. J. (forthcoming 2021) (arguing that common horizontal shareholding lessens competition and affects corporate conduct); Vito J. Racaneli, *Do Institutional Investors Suppress Competition?*, BARRON'S (Sept. 17, 2018, 5:40 PM), <https://www.barrons.com/articles/do-big-investors-push-the-antitrust-envelope-1537220418>; José Azar et al., *Anti-Competitive Effects of Common Ownership*, 73 J. Fin. 1523 (2018) (comparing the private benefits of common ownership, specifically diversification and good governance, against the social costs of reduced market competition); José Azar et al., *Ultimate Ownership and Bank Competition* (May 4, 2019) (unpublished manuscript), [https://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=2710252](https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2710252); Miguel Antón et al., *Common Ownership, Competition, and Top Management Incentives* (CESIFO, Working Paper No. 6178, 2016), [https://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=2885826](https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2885826) (analyzing how common ownership effects managerial incentives); Daniel P. O'Brien & Keith Waehrer, *The Competitive Effects of Common Ownership: We Know Less than We Think*, 81 Antitrust L. J. 729 (2017) (arguing that current research on the harms of common ownership by minority institutional investors is not conclusive to support changes in antitrust policy); Edward B. Rock & Daniel L. Rubinfeld, *Defusing the Antitrust Threat to Institutional Investor Involvement in Corporate Governance* (NYU L. & Econ. Research Paper No. 17-05, Mar. 1, 2017), [https://papers.ssrn.com/sol3/papers2.cfm?abstract\\_id=2925855](https://papers.ssrn.com/sol3/papers2.cfm?abstract_id=2925855) (outlining possible antitrust guidelines to prevent the anticompetitive effects of institutional investing); Jacob Gramlich & Serafin Grundl, *Testing for Competitive Effects of Common Ownership* (Fed. Reserve Bd., Fin. & Econ. Discussion Series, Working Paper No. 2017-029, 2017), <https://doi.org/10.17016/FEDS.2017.029>.

101. Teresa Rivas, *'Passive Investing is Worse Than Marxism': Bernstein*, BARRON'S (Aug. 23, 2016, 12:20 PM), <https://www.barrons.com/articles/advisors-cash-is-king-amid-uncertainty-51546881439>.

102. Burger, *supra* note 94.

103. See Luke Kawa, *Index-Crazed Investors Turning S&P 500 into One Gigantic Company*, BLOOMBERG (Jan. 15, 2019, 5:00 AM), <https://www.bloomberg.com/news/articles/2019-01-15/index-crazed-investors-turning-s-p-500-into-one-gigantic-company>.

affecting pricing, entry, contracting, and virtually all strategic interactions among firms.”<sup>104</sup> In other words, firms with the same owners may have less incentive to compete, and while they may not be engaging directly in legally-defined “anti-competitive behavior,” the internal reward systems are primed for collusion.<sup>105</sup> This could influence herd formation as “investors in firms become more similar to each other over time.”<sup>106</sup> Surprisingly, the referenced study also notes that this trend predates the success of BlackRock and Vanguard.<sup>107</sup> The result has been described as transforming the entire S&P 500 into “one gigantic company.”<sup>108</sup>

Other passive investment critics have noted how these investments can impede good corporate governance and market efficiency.<sup>109</sup> As suggested by one financial markets commentator, ETFs lead to “large blocks of stock held by disinterested holders” such as index funds; “[i]ndex funds are disincentivized from expending resources on improving the performance and corporate governance of the companies in which they invest since this would increase fund management costs.”<sup>110</sup> One potential solution suggested by this commentator would be a system of *pro rata* voting.<sup>111</sup>

In response to the growing problem of block shares held by passive index funds that are disincentivized from expending resources to enhance corporate governance,<sup>112</sup> the SEC recently announced an initiative to study the proxy process, including the role that fund ownership plays in shareholder voting and corporate governance.<sup>113</sup> In his remarks to the *SEC Advisory*

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104. Matthew Backus et al., *Common Ownership in America: 1980-2017* 1 (Nat'l Bureau of Econ. Research, Working Paper No. 25454, 2019), <https://www.nber.org/papers/w25454>.

105. See Kawa, *supra* note 103.

106. *Id.*

107. See Backus et al., *supra* note 104, at 19.

108. Kawa, *supra* note 103.

109. See, e.g., Maurice M. Lefkort, *The Problem with Index Investing*, WHARTON MAG. (May 14, 2018), <http://whartonmagazine.com/blogs/the-problem-with-index-investing/#sthash.iZtyeTxN.5V7LdkX5.dpbs>.

110. *Id.*

111. Maurice M. Lefkort, *A Proposed Solution to the Index Fund Free Rider Problem*, WHARTON MAG. (June 8, 2018), <http://whartonmagazine.com/blogs/a-proposed-solution-to-the-index-fund-free-rider-problem/#sthash.mluoN6A.JYuxvwzmz.dpbs>.

112. Lefkort, *supra* note 109.

113. See Jay Clayton, *Statement Announcing SEC Staff Roundtable on the Proxy Process*, U.S. SEC. & EXCH. COMM'N (July 30, 2018), <https://www.sec.gov/news/public-statement/statement-announcing-sec-staff-roundtable-proxy-process>; see also Edward Rock & Marcel Kahan, *Index Funds and Corporate Governance: Let Shareholders Be Shareholders* 2–3, 9 (N.Y. Univ. Law & Econ. Research Paper Series, Working Paper No. 18-39, 2019).



*Committee*, SEC Chairman Jay Clayton noted the particular importance of reviewing passive investment growth and the resulting effects, including concentration risk, proxy considerations, and “questions [about] how passive funds should approach engagement with companies on the one hand and engagement with their investors on the other hand.”<sup>114</sup>

An interaction risk may also be facilitated with respect to market intermediaries and the expanding investor base for ETFs, including institutional, retail, algorithmic, and HF traders, all of whom have diverse investment goals and preferences, which can undermine market efficiency and information synthesis.<sup>115</sup> Professor Benoit Mandelbrot and Richard L. Hudson have argued against the orthodox view of efficient markets, noting evidence of historical investor irrationality and non-continuous price changes.<sup>116</sup> Mandelbrot and Hudson note that non-homogenous investor interactions yield unexpected price movements, price bubbles, and crashes.<sup>117</sup> Additionally, citing research from economists Paul De Grauwe and Marianna Grimaldi,<sup>118</sup> Mandelbrot and Hudson suggest that with multiple investor class interactions “[t]he market switches from a well-behaved ‘linear’ system in which one factor adds predictably to the next, to a chaotic ‘non-linear’ system in which factors interact and yield the unanticipated.”<sup>119</sup>

#### *F. The Impact of High-Frequency Trading and Robo-Advisors on ETF Herding*

Because of high secondary market liquidity, ETFs have attracted a variety of short-term, directional, and algorithmic traders and have become a preferred vehicle for HF trading.<sup>120</sup>

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114. Jay Clayton, *Remarks to the SEC Investor Advisory Committee*, U.S. SEC. & EXCH. COMM’N (Sept. 13, 2018), <https://www.sec.gov/news/public-statement/statement-clayton-iac-091318>.

115. See BENOIT B. MANDELBROT & RICHARD L. HUDSON, *THE (MIS)BEHAVIOR OF MARKETS, A FRACTAL VIEW OF RISK, RUIN, AND REWARD* 85 (1st ed. 2004).

116. See *id.* at 89–107.

117. See *id.* at 85.

118. See generally Paul De Grauwe & Marianna Grimaldi, *Bubbling and Crashing Exchange Rates* (CESIFO, Working Paper No. 1045, 2003) (developing a model of the foreign exchange market where bubbles and crashes are unpredictable).

119. MANDELBROT & HUDSON, *supra* note 115, at 85.

120. See ESRB Report, *supra* note 6, at 2, 27; see also Markus S. Broman & Pauline Shum, *Relative Liquidity, Fund Flows and Short-Term Demand: Evidence from Exchange-Traded Funds*, 53 FIN. REV. 87, 89 (2018); Markus S. Broman, *Liquidity, Style Investing and Excess Comovement of Exchange Traded Fund Returns*, 30 J. FIN. MKTS., 27, 51 (2016) (“[D]ue to the ease of investing in ETFs and because of their high liquidity, ETFs attract a clientele of short-term investors who are more exposed to common non-fundamental demand shocks at the style level relative to the investors in the ETFs’

Although HF trading undoubtedly provides liquidity for ETFs, the nature of their contribution to the ETF market ecosystem is debatable.<sup>121</sup> HF traders have been criticized as “active and aggressive traders, committing fratricide when it suits them, or withdrawing altogether from volatile markets.”<sup>122</sup> Additionally, the algorithms behind HF trading are generally based on similar assumptions and, therefore, could react with herd-like behavior in a crisis.<sup>123</sup> Further, when HF traders are programmed to act in unison, it is possible for ETFs to create an environment where micro-efficient behavior could exacerbate procyclical action since the market consists of many individual algorithmic trading platforms reacting to market conditions and each other.<sup>124</sup>

Legitimate HF trading market makers can also tread dangerously close to market manipulation and scalping.<sup>125</sup> Market participants have expressed recent concerns that liquidity sourced by HF trading could vanish in a crisis.<sup>126</sup> One theory surrounding Goldman Sachs’ trading desks states that HF trading provides liquidity “without taking into account fundamental information,” and as such, the trading desks could

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underlying baskets.”); Anna Calamia et al., *Liquidity in European Equity ETFs: What Really Matters?* 1–2 (Groupe de Recherche en Droit, Economie, Gestion, Working Paper No. 2013-10, 2013), <https://ideas.repec.org/p/gre/wpaper/2013-10.html>; Sophia J.W. Hamm, *The Effect of ETFs on Stock Liquidity* 3–4, 26 (Apr. 23, 2014) (unpublished manuscript), <https://ssrn.com/abstract=1687914>.

121. See generally Ted Knutson, *HFT Mixed Bag for Retail Investors Say Experts*, FORBES (Sept. 24, 2018, 9:05 AM), <https://www.forbes.com/sites/tedknutson/2018/09/24/retail-investors-helped-hurt-by-high-frequency-traders-experts-say/#15ad69765e5b> (arguing that, even though HFTs can aid investors, “some [HFTs] are predatory.”); Larry Swedroe, *Swedroe: High Frequency Trading’s Impact*, ETF.COM (Feb. 24, 2016), <https://www.etf.com/sections/index-investor-corner/swedroe-high-frequency-tradings-impact?nopaging=1> (“[R]esearch shows that HFT supplies ‘roughly the same amount of liquidity’ as it takes. Yet HFT extracts approximately \$3 billion annually while doing so.”).

122. Letter from R.T. Leuchtkafer (Oct. 31, 2010) (on file with the SEC), <https://www.sec.gov/comments/s7-02-10/s70210-300.htm>.

123. See Hilary J. Allen, *The SEC as Financial Stability Regulator*, 43 J. CORP. L. 715, 743–44 (2018).

124. See Iris H-Y Chiu, *Fintech and Disruptive Business Models in Financial Products, Intermediation and Markets – Policy Implications for Financial Regulations*, 21 J. TECH. L. & POL’Y 55, 103–04 (2016); see also Emiliós Avgouleas, *The Global Financial Crisis, Behavioural Finance and Financial Regulation: In Search of a New Orthodoxy*, 9 J. CORP. L. STUD. 23, 28–29, 33–34, 43–44 (2009).

125. See Stanislav Dolgoplov, *Regulating Merchants of Liquidity: Market Making from Crowded Floors to High Frequency Trading*, 18 U. PA. J. BUS. L. 651, 659–60, 697–98 (2016).

126. See Tae Kim, *Goldman Sachs Says Computerized Trading May Make Next “Flash Crash” Worse*, CNBC (last updated May 23, 2018, 11:47 AM), <https://www.cnbc.com/2018/05/23/goldman-sachs-rise-of-trading-machines-could-make-next-market-crash-much-worse.html>.

withdraw this liquidity in periods of market stress “to avoid being adversely selected.”<sup>127</sup>

One of the few test cases for ETF herding in a crisis as well as the interaction effects of HF trading occurred in a flash crash in February 2018. On February 5, 2018, the CBOE Volatility Index (VIX) experienced its largest single-day jump (115%) followed by a dramatic sell-off of inverse VIX exposure ETPs.<sup>128</sup> The losses on inverse VIX products were massive—estimated at over \$3 billion—and the media reaction was quick and negative.<sup>129</sup> Influential investors suggested that the products were increasing financial instability, with Carl Icahn calling them a “casino on steroids.”<sup>130</sup> Devesh Shah, the inventor of the VIX, noted: “In my wildest imagination I don’t know why these products exist.”<sup>131</sup>

The episode was an interesting stress test on ETF arbitrage functionality in the context of potential intermediary herding.<sup>132</sup> It also distinguished ETFs from their more complex ETP relatives like VIX products. ETFs on the S&P 500 exhibited “relatively tight tracking and bid-ask spreads,” a minimal impact on underlying U.S. stocks,<sup>133</sup> and orderly trading in fixed-income ETFs.<sup>134</sup> This experience is indicative of the ETF ecosystem’s dependability in a crisis scenario.<sup>135</sup>

Post-GFC, numerous digital wealth management platforms (i.e. robo-advisers) have emerged that provide investment

127. *Id.*

128. BLACKROCK, FEBRUARY 2018 CASE STUDY: ETF TRADING IN A HIGH VELOCITY MARKET 2 (Mar. 2018), <https://www.blackrock.com/corporate/literature/whitepaper/viewpoint-case-study-etf-trading-high-velocity-market-february-2018.pdf> [hereinafter BLACKROCK ETF CASE STUDY] (noting that inverse VIX exposure ETPs are products that give investors a short on VIX futures, thus providing a return opposite to the movement of the VIX).

129. *Id.*; see generally Berkeley Lovelace Jr., *Cramer: A Little-Known Security Tied to a Calm Market Became a ‘Toxic Cigarette’ for This Sell Off*, CNBC (last updated Feb. 6, 2018, 1:32 PM), <https://www.cnbc.com/2018/02/06/cramer-xiv-note-proved-to-be-a-toxic-cigarette-for-the-market.html> (“[Cramer] characterized the [exchange-traded note] as a ‘phony product’ and [a] ‘toxic cigarette for the market.’”).

130. Matthew J. Belvedere, *Icahn: The Market Will One Day ‘Implode’ Because of These Wacky Funds Using so Much Leverage*, CNBC (last updated Feb. 6, 2018, 3:07 PM), <https://www.cnbc.com/2018/02/06/billionaire-investor-carl-icahn-there-are-too-many-derivatives-and-the-current-market-is-a-rumbling-warning.html>.

131. Max Abelson & Joe Weisenthal, *An Inventor of the VIX: ‘I Don’t Know Why These Products Exist,’* BLOOMBERG (Feb. 6, 2018), <https://www.bloomberg.com/news/articles/2018-02-06/an-inventor-of-the-vix-i-don-t-know-why-these-products-exist>.

132. BLACKROCK ETF CASE STUDY, *supra* note 128, at 1.

133. *Id.* at 4.

134. *Id.* at 5.

135. *See id.*

recommendations and other portfolio management services to clients by using data-synthesizing algorithms that interpret factors like age, risk tolerance, and financial goals.<sup>136</sup> Robo-advisers are growing in popularity because they serve clients who, based on factors such as geographic location or income, are unable to obtain sophisticated investment management services.<sup>137</sup> These innovations, which are driven by artificial intelligence, can also help remedy traditional investor shortcomings like irrational investor tendencies and biases.<sup>138</sup> However, because ETFs are the foundation of many portfolios constructed by robo-advisers,<sup>139</sup> there are concerns that correlated advice from robo-advisers may exacerbate herding, as AI-driven investment recommendations could facilitate a pile into hot ETFs and create a coordinated exit stampede.<sup>140</sup> This risk has attracted the attention of high-profile regulators such as Mark Carney, the Governor of the Bank of England, who warned that the rise of robo-advisers creates the potential for “excess volatility or increase[d] procyclicality as a result of herding.”<sup>141</sup> The Organization for Economic Cooperation and Development has also cited robo-advisers’ use of ETFs as a potential systemic and procyclical stability risk.<sup>142</sup> Further, hedge fund CEO Jeffrey Gundlach has publicly decried what he calls a passive investing mania, iterating the herding dangers with broad equity ETFs and their inclusion by “robo-advisers.”<sup>143</sup>

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136. Nicole G. Iannarone, *Computer as Confidant: Digital Investment Advice and the Fiduciary Standard*, 93 CHI.-KENT L. REV. 141, 151 (2018); see BETTERMENT, <https://www.betterment.com> (last visited Sept. 9, 2019); NUTMEG, <https://www.nutmeg.com> (last visited Sept. 9, 2019).

137. See Iannarone, *supra* note 136, at 142.

138. See Stephen Lynch, *Man vs. Machine: AI’s Growing Role in Investment Management*, SEEKING ALPHA (July 23, 2019, 3:03 P.M.), <https://seekingalpha.com/article/4276777-man-vs-machine-ais-growing-role-investment-management>.

139. See Ben Judge, *The Rise of the Robo-Advisers*, MONEYWEEK (Oct. 2, 2017), <https://moneyweek.com/461092/the-rise-of-the-robo-advisers/>.

140. James Rickards, *Robot Trading Will End in Disaster*, DAILY RECKONING (July 19, 2019), <https://dailyreckoning.com/robot-trading-will-end-in-disaster/>.

141. Judge, *supra* note 139.

142. ORG. FOR ECON. COOPERATION & DEV., ROBO-ADVICE FOR PENSIONS 15–16 (2017), <https://www.oecd.org/pensions/Robo-Advice-for-Pensions-2017.pdf>; see also William Magnuson, *Regulating Fintech*, 71 VAND. L. REV. 1167, 1202 (2018).

143. Michael Sheetz, *Jeffrey Gundlach Says Passive Investing Has Reached a ‘Mania’ – Investors Should Avoid Index Funds*, CNBC (last updated December 17, 2018, 4:41 PM), <https://www.cnbc.com/2018/12/17/gundlach-says-passive-investing-has-reached-mania-status.html>.

*G. Contagion and Spillover Effects of Investor Herding*

Not only does investor herding cause issues in the relevant ETF market, but an ETF sell-off could also lead to panicked selling of other asset classes—a phenomenon in financial markets called “contagion.”<sup>144</sup> If investors of certain ETF fund strategies, such as fixed-income ETFs, experience collective liquidity shortages during a market sell-off or other crisis, then there will be additional risks of contagion to different ETF types.<sup>145</sup> Even the underlying asset classes will feel the spillover effects, as investors who hold illiquid ETFs will be “forced into selling other assets, spreading the pricing and liquidity pressure across the financial system.”<sup>146</sup>

This process, also known as a feedback loop, has generated a significant amount of debate between academics, regulators, and the asset management industry.<sup>147</sup> The ESRB Report notes that ETFs are often utilized by financial institutions as cash substitutes in their liquidity management systems, so a shock to the ETF market could transmit shocks throughout the greater financial system if large financial institutions doubt the cash substitutability and, simultaneously, look to liquidate their ETF holdings.<sup>148</sup> Thus, the International Monetary Fund (IMF) has recently identified contagion risk as a potential downside to ETF market activity.<sup>149</sup>

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144. Will Martin, ‘A Huge Risk of Contagion’: Everything You Need to Know About ETFs – The Hot Investment Area that Some Think Will Cause the Next Financial Crisis, *BUS. INSIDER* (Oct. 17, 2017, 12:52 AM), <https://www.businessinsider.com/what-is-an-etf-risk-global-financial-crisis-2017-10>.

145. See Semyon Malamud, *A Dynamic Equilibrium Model of ETFs* 10 (CEPR Discussion Paper Series, Working Paper No. DP11469, 2016), [https://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=2831973](https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2831973).

146. SU, *supra* note 1, at 10–11.

147. See DEPOSITORY TR. & CLEARING CORP., *THE NEXT CRISIS WILL BE DIFFERENT: OPPORTUNITIES TO CONTINUE ENHANCING FINANCIAL STABILITY 10 YEARS AFTER LEHMAN’S INSOLVENCY* 13 (Sept. 2018), <http://www.dtcc.com/news/2018/september/12/new-paper-identifies-post-crisis-opportunities>; INT’L MONETARY FUND, *GLOBAL FINANCIAL STABILITY REPORT: A BUMPY ROAD AHEAD* 19 (Apr. 2018), <https://www.imf.org/en/Publications/GFSR/Issues/2018/04/02/Global-Financial-Stability-Report-April-2018>; ESRB Report, *supra* note 6, at 20–21; SU, *supra* note 1, at 10–11.

148. ESRB Report, *supra* note 6, at 29; see also MICHAEL GRILL ET AL., *EUR. CENT. BANK, FIN. STABILITY REVIEW, COUNTERPARTY AND LIQUIDITY RISKS IN EXCHANGE-TRADED FUNDS* (Nov. 2018), [https://www.ecb.europa.eu/pub/financial-stability/fsr/special/html/ecb.fsrart201811\\_3.en.html](https://www.ecb.europa.eu/pub/financial-stability/fsr/special/html/ecb.fsrart201811_3.en.html).

149. See INT’L MONETARY FUND, *GLOBAL FINANCIAL STABILITY REPORT: A BUMPY ROAD AHEAD* 19–20 (Apr. 2018), <https://www.imf.org/en/Publications/GFSR/Issues/2018/04/02/Global-Financial-Stability-Report-April-2018> (noting risks in bond ETFs with reduced underlying liquidity based on several parameters including: “frequent trading” with often higher turnover and more

Along with the ESRB and IMF, empirical research has linked the ETF arbitrage mechanism with contagion risk, identifying it as “an unintended consequence of arbitrage and a yet-unexplored outcome of financial innovation.”<sup>150</sup> In a study by Professors Itzhak Ben-David, Francesco Franzoni, and Rabih Moussawi, the ETF arbitrage mechanism weakened when providing liquidity became less profitable for intermediaries or during periods of “poor stock market returns and poor returns for the financial sector,” which lead to ETF mispricing or decoupling between the fund’s net asset value and the ETF trading price.<sup>151</sup> In this study, ETF arbitrage was shown to “facilitate the propagation of liquidity shocks from the ETFs to the underlying securities.”<sup>152</sup> However, the propagated shocks were not due to an “information-based change in prices”; instead, the authors suggest the liquidity shocks occurred because of the “increase [in] the risk of contagion across asset classes.”<sup>153</sup> In other words, they are non-fundamental shocks.

Another discovered source of contagion risk in ETFs is in operational shorting by market makers, including APs.<sup>154</sup> Researchers from Villanova and the University of Virginia defined operational shorting as a scenario where the AP sells ETF shares but postpones their creation and delivery; the AP owes or is short the ETF shares until they ultimately deliver those shares to the investor who purchased them in the secondary market.<sup>155</sup> The ability for APs to sell new ETF shares that are not yet created derives from an SEC delivery requirement exemption for market making activities, referred to as Rule 204, and the flexibility of the multi-day settlement window.<sup>156</sup> Further, the study notes that operational shorting activity is driven by both ETF liquidity mismatches in the

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volatility in ETF shares than the shares of underlying assets; ETF “sensitivity to changes in risky asset prices,” which can lead to contagion risk and “possibly amplify price moves across asset markets during periods of stress”; and also the potential for greater “cross-asset correlation” due to the rise of passive investing as a dominant investment strategy).

150. Itzhak Ben-David, Francesco Franzoni & Rabih Moussawi, *ETFs, Arbitrage and Contagion* 3 (Nat’l Ctr. of Competence in Research, Fin. Valuation & Risk Mgmt., Working Paper No. 793, 2012).

151. *Id.*

152. *Id.* at 4.

153. *Id.* at 4–5, 30.

154. See Richard B. Evans et al., *ETF Short Interest and Failures-to-Deliver: Naked Short-Selling or Operational Shorting?* 4 (Darden Bus. Sch., Working Paper No. 2961954, 2018), <https://ssrn.com/abstract=2961954>.

155. *Id.* at 2.

156. See *id.* at 22; Archana Jain & Chinmay Jain, *Fails-to-Deliver Before and After the Implementation of Rule 203 and Rule 204*, 50 FIN. REV. 611, 611–636 (2015).

underlying assets and the presence of efficient hedges.<sup>157</sup> While operational shorting may serve as a contrarian form of liquidity provision and enhance price discovery,<sup>158</sup> it can generate higher failures to deliver.<sup>159</sup> This can “spill over from one ETF to another with the same AP, or from one AP to another.”<sup>160</sup>

Related research from George Mason University has shown that failures to deliver in the ETF market are correlated with increased market volatility. The correlation is not random but rather is motivated by market makers attempting to bypass the borrowing costs affiliated with their shorts.<sup>161</sup> The contagion dynamic is exhibited in operational shorting through commonality in trading strategies amongst market makers following lead market makers—usually large APs—engaging in operational shorting. After lead market makers engage in operational shorting, market makers engage in similar strategies. There is also a positive correlation in the trading strategies of market makers following operational shorting by lead market makers.<sup>162</sup> The authors conclude that any liquidity enhancements of operational shorting by ETF market makers are done “at the cost of greater inter-connection within and between APs, an effect magnified by financial leverage.”<sup>163</sup>

### III. COULD ETFs BE MAKING MARKETS LESS EFFICIENT?

#### A. *The Growing Complexity of the ETF Ecosystem*

Financial market complexity has been described by Professor Steven Schwarcz as the “greatest financial-market challenge of the future.”<sup>164</sup> The more complex markets are, “the greater the chance of [an] unexpected interaction of

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157. Evans et al. *supra* note 154, at 5.

158. *Id.* at 35.

159. See Gordon Scott, *Failure to Deliver*, INVESTOPEDIA, <https://www.investopedia.com/terms/f/failuretodeliiver.asp> (last updated Aug. 2, 2019) (discussing that a “failure to deliver” in a short-position occurs when the party with the short position “does not own all or any of the underlying assets required at settlement, and so cannot make the delivery.”).

160. Evans et al., *supra* note 154, at 39.

161. Thomas Stratmann & John W. Welborn, *Exchange-Traded Funds, Fails-To-Deliver, and Market Volatility* 43 (George Mason Univ. Dep’t of Econ., Working Paper No. 12-59, 2012), <http://ssrn.com/abstract=2183251>.

162. Evans et al., *supra* note 154, at 6, 35.

163. *Id.* at 6.

164. *Regulating Complexity*, *supra* note 34, at 211.

components.”<sup>165</sup> Over the last fifty years, financial markets and available investment products in the U.S. have grown tremendously in size, diversity, and complexity.<sup>166</sup> Specifically, ETFs continue to become more complex nearly unabated. Soon, active ETFs will be launched in the U.S. with positional disclosures occurring quarterly instead of daily, causing even less transparency.<sup>167</sup> At first glance, this idea seems antithetical to the underlying ethos of securities regulation.

Professor Saule Omarova has characterized financial product growth by two unifying factors, both of which are exhibited prominently in the ETF market: the synthesizing of economic interests and the scaling up of transaction volume and speed.<sup>168</sup> She notes that these unifying factors are driven by four increasingly common financial market mechanisms: pooling, layering, acceleration, and compression.<sup>169</sup> This can be seen in the wide slate of funds currently offered by Vanguard.<sup>170</sup> Securities of many varieties are pooled into tradeable ETFs, layered by risk classification, accelerated through algorithmic trading mechanisms, and compressed through modern trade settlement dynamics.<sup>171</sup>

As a result of this evolution, a tradable financial instrument represents nearly every real economic interest.<sup>172</sup> The number of assets under professional management, the amount of money in the market, and the variety and supply of available financial

165. Robert F. Weber, *Structural Regulation as Antidote to Complexity Capture*, 49 AM. BUS. L. J. 643, 643 (2012).

166. See Michael Collins, *Wall Street and The Financialization Of The Economy*, FORBES (Feb. 4, 2015, 11:25 PM), <https://www.forbes.com/sites/mikecollins/2015/02/04/wall-street-and-the-financialization-of-the-economy/#4f6e026d5783>; Will Kenton *Financialization*, INVESTOPEDIA (last updated Sept. 16, 2019), <https://www.investopedia.com/terms/f/financialization.asp> (“In the United States, the size of the financial sector as a percentage of gross domestic product has grown from 2.8 percent in 1950 to 7.9 percent in 2012.”).

167. See Justin Baer, *The Next Big Thing in ETFs: Less Transparency*, WALL ST. J. (July 13, 2019, 5:30 AM), <https://www.wsj.com/articles/the-next-big-thing-in-etfs-less-transparency-11563010201> (“[The] new type of . . . ETFs would reveal positions quarterly, as mutual funds do, to prevent front-running of trading ideas.”).

168. Saule T. Omarova, *New Tech v. New Deal: Fintech as a Systemic Phenomenon*, 36 YALE J. ON REG. 735, 741 (2019).

169. *Id.* at 762.

170. *Vanguard ETFs*, <https://investor.vanguard.com/etf/list#/etf/asset-class/month-end-returns> (last visited Sept. 9, 2019).

171. See Omarova, *supra* note 168, at 765–67.

172. See generally Servaas Storm, *Financial Markets Have Taken Over the Economy. To Prevent Another Crisis, They Must Be Brought to Heel*, INST. FOR NEW ECON. THINKING (Feb. 13, 2018), <https://www.ineteconomics.org/perspectives/blog/financial-markets-have-taken-over-the-economy-to-stop-the-next-crisis-they-must-be-brought-to-heel> (“[T]he rapid expansion of [the] financial sector [has] transform[ed] all debts and assets into tradable commodities . . .”).



products continues to expand.<sup>173</sup> Financial product innovation has flourished post-GFC, as evidenced by an increasingly wide variety of new and exotic ETFs.<sup>174</sup> The universe of available ETF products is especially bewildering to retail investors,<sup>175</sup> and has grown to include artificial intelligence, robotics ETFs, and managed futures.<sup>176</sup> A recent report on the ETF market by the Securities Industry and Financial Markets Association called the product selection in ETFs “[t]he Baskin Robbins of Choices,” with a range of options including index-based, actively managed, asset-criteria, region-criteria, sector-specific, investment-style specific, and even “fund of fund” structures.<sup>177</sup>

A 2011 report from the Bank for International Settlements (BIS Report) identified several market vulnerabilities as a result of the growing ETF sector.<sup>178</sup> The primary concern in the report was the way ETFs lengthen the financial intermediation chain, making risks less transparent and more difficult to detect.<sup>179</sup> When strategies are replicated through new fund structures, these opaque risks accumulate in the financial system.<sup>180</sup> The BIS Report identifies as particularly acute the risks for ETFs that create synthetic exposures using derivatives.<sup>181</sup>

In *Antifragile*, Nassim Nicholas Taleb’s best-selling critique on modern financial institutions, Taleb notes that the “problem of the commercial world is that it only works by addition (*via*

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173. See generally Robin Greenwood & David Scharfstein, *The Growth of Finance*, 27J. ECON. PERSP., Spring 2013, at 3, 5–6 (explaining that the rapid growth of the financial sector is associated with the growth of asset management and the increased availability of credit and other financial products).

174. See Robin Wigglesworth, *Worries Over Exotic Exchange Traded Funds Deepen*, FIN. TIMES (Feb. 14, 2018, 3:49 PM), <https://www.ft.com/content/6c4f40dc-1113-11e8-940e-08320fc2a277>.

175. See Vildana Hajric & Annie Massa, *ETFs Use Anything for Attention to Crack Tough Market*, BLOOMBERG (Dec. 20, 2018, 4:32 PM), <https://www.bloomberg.com/news/articles/2018-12-20/etfs-use-pets-ai-anything-for-attention-to-crack-tough-market>.

176. See Ben Hernandez, *Get Disruptive in 2019 with These 10 ETFs*, ETF TRENDS (Jan. 2, 2019), <https://www.etftrends.com/robotics-ai-channel/get-disruptive-in-2019-with-these-10-etfs/>; see also Todd Shriber, *Eyeing Alternatives with a Managed Futures ETF*, ETF TRENDS (January 5, 2019), <https://www.etftrends.com/eyeing-alternatives-with-a-managed-futures-etf/>.

177. KATIE KOLCHIN, SEC. INDUS. & FIN. MKT. ASS’N, SIFMA INSIGHTS: US ETF MARKET STRUCTURE PRIMER 5–6 (Sept. 2018), <https://www.sifma.org/wp-content/uploads/2018/09/SIFMA-Insights-US-ETF-Primer.pdf>.

178. Srichander Ramaswamy, *Market Structures and Systemic Risks of Exchange-Traded Funds* 10–11 (Bank for Int’l Settlements, Working Paper No. 343, Apr. 2011), <https://www.bis.org/publ/work343.pdf>.

179. *Id.*

180. *Id.*

181. *Id.* at 12.

*positiva*), not subtraction (*via negativa*).<sup>182</sup> The same might be true of the secondary market for ETFs. Product supply and complexity is unidirectional. One questions what effect this additive growth has on financial stability and whether ETF intermediaries represent what Taleb characterizes as “fragilizers,” since they gain, “at the expense of others[,] by getting the upside (or gains) from volatility, variations, and disorder and exposing others to the downside risks of losses or harm.”<sup>183</sup>

One market commentator noted that the complexity of modern capital and derivatives markets “involve multiple methods for extraction of value by the financial sector that must be paid for by the productive economy.”<sup>184</sup> He suggested such extractions are facilitated by technology-fueled information asymmetries that exist between trading counterparties, such as between HF traders and retail investors.<sup>185</sup> Similar critiques have been levied squarely at the ETF industry, and some analysts believe that the demand for new product structures is driven by fund providers and not investor interests.<sup>186</sup>

Critics of modern financial complexity have argued that “financial markets exist primarily to serve themselves,”<sup>187</sup> and that complexity has facilitated rent-seeking, which is often conflated with creating value.<sup>188</sup> Others suggest that financial

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182. NASSIM NICHOLAS TALEB, *ANTIFRAGILE: THINGS THAT GAIN FROM DISORDER* 400 (2014).

183. *Id.* at 5.

184. Wallace C. Turbeville, *A New Perspective on the Costs and Benefits of Financial Regulation: Inefficiency of Capital Intermediation in a Deregulated System*, 72 MD. L. REV. 1173, 1203 (2013).

185. *Id.* at 1177.

186. See Carolina Wilson, *As ETF Issuers Crowd into ESG, Some Investors Say Enough Already*, BLOOMBERG (Jan. 24, 2019, 7:48 AM), <https://www.bloomberg.com/news/articles/2019-01-24/as-etf-issuers-crowd-into-esg-some-investors-say-enough-already>.

187. Lawrence E. Mitchell, *Financialism: A Lecture Delivered at Creighton University School of Law*, 43 CREIGHTON L. REV. 323, 323 (2010); see also Lawrence E. Mitchell, *The Morals of the Marketplace: A Cautionary Essay for Our Time*, 20 STAN. L. & POLY REV. 171, 173 (2009) (“The law that imposes no corporate obligation on shareholders or creditors historically was based on the assumption that the financial incentives of investors would rationally direct them to act in their own self-interest, which would align with their perceptions of the entity’s best interests, and the same may be said of financing productive activity more broadly.”).

188. See William Lazonick & Mariana Mazzucato, *The Risk-Reward Nexus in the Innovation-Inequality Relationship: Who Takes the Risks? Who Gets the Rewards?*, 22 INDUS. & CORP. CHANGE 1093, 1104 (2013) (“[R]ent-seekers are engaged in value extraction[; t]hey insert themselves strategically in exercising control over the returns from the innovation process, extracting a share of returns from the expanding economic pie that is in excess of their contribution to the process that generated that expanding pie.”).

market growth is “a function of the financial economy detaching from the real economy” and redirecting money to the finance sphere, where it earns higher returns through misallocation and price distortions.<sup>189</sup> Professor and Nobel Laureate Paul Krugman has suggested that modern financial markets create money for nothing.<sup>190</sup> Other commentators, such as Rana Foroohar, go as far as to call modern financial markets unproductive and a cause of societal income inequality.<sup>191</sup> Further, when new innovations only yield wealth transfers, rent-seeking in the financial sector is an indicator of market distortions and a loss in net social welfare—not value creation.<sup>192</sup> This process allows powerful incumbents to limit market competition, leading to higher costs and reduced value in financial services.<sup>193</sup>

When analyzing the mechanics of the ETF ecosystem, it is easy to see the salience of such modern financial market critiques. The central operation of an ETF, which revolves around an arbitrage mechanism to equalize discrepancies between a fund’s net asset value and the ETF’s secondary market trading prices, has been criticized as a shell-game scam designed to extract profits for the intermediaries via bid-ask spreads from inexperienced investors—“not to help investors but to Hoover up their nickels and dimes at very fast speeds.”<sup>194</sup> The issue with bid-ask spreads is even more pronounced in leveraged products and ETFs that have low trading volumes.<sup>195</sup>

### *B. Complexity, Opacity, and ETF Interaction Risks*

As institutions experiment with new ETFs, informational complexities are introduced into the financial system. Economist Hyman Minsky, whose work has become quite significant since the GFC, identifies the possibility of several layers of intermediation as a byproduct of the financial system’s

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189. PAUL KEDROSKY & DANE STANGLER, KAUFFMAN FOUNDATION RESEARCH SERIES: FIRM FOUND. AND ECON. GROWTH, FINANCIALIZATION AND ITS ENTREPRENEURIAL CONSEQUENCES 4 (Mar. 2011), [https://www.kauffman.org/-/media/kauffman\\_org/research-reports-and-covers/2011/03/financialization\\_report\\_32311.pdf](https://www.kauffman.org/-/media/kauffman_org/research-reports-and-covers/2011/03/financialization_report_32311.pdf).

190. Paul Krugman, *Money for Nothing*, N.Y. TIMES (Apr. 26, 2009), <https://www.nytimes.com/2009/04/27/opinion/27krugman.html>.

191. Rana Foroohar, *The Economy’s Greatest Illness: The Rise of Unproductive Finance*, EVONOMICS (Nov. 15, 2016), <http://evonomics.com/financialization-hidden-illness-rana-foorohar/>.

192. Jeremy Kidd, *Fintech: Antidote to Rent-Seeking?*, 93 CHI.-KENT L. REV. 165, 170 (2018).

193. *Id.* at 167.

194. *See* Martchev, *supra* note 12.

195. *Id.*

institutional complexity.<sup>196</sup> Such layers are clearly visible in the ETF operating ecosystem. A group of economic researchers, including Nobel prize winner Joseph Stiglitz, has also documented how financial institutions form multilayer networks.<sup>197</sup> The default probability of one institution in a network is affected by the default probability of the entire network, which is increasingly difficult to compute as the network grows in complexity.<sup>198</sup>

As these intermediation layers cause markets to grow more complex, the potential for errors and increased systemic risk is amplified.<sup>199</sup> However, systemic risk probabilities are “very sensitive to errors on information about contracts as well as on information about the complexity of the network structure,” so the true systemic risk can be difficult to compute.<sup>200</sup> Professor Kathryn Judge has outlined how increased market complexity from financial innovation has enhanced systemic risk based on the concept of fragmentation nodes—financial innovations that “provide close substitutes for goods and services historically provided by banks.”<sup>201</sup> She argues that complexity in these structures “impede[s] transparency and flexibility in ways that increase systemic risk.”<sup>202</sup> This is highly relevant given the aforementioned ESRB Report, which notes that some banks view ETFs as a liquid substitute for cash.

Both the migration of PhDs to Wall Street and an enhanced focus in business school curricula on the quantitative market and trading models have encouraged financial engineering in investment products.<sup>203</sup> At the heart of the academic takeover of conventional trading is algorithmic and HF trading. Professor Yesha Yadav has argued that algorithmic trading has

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196. See Hyman P. Minsky, *The Financial Instability Hypothesis* 4 (Jerome Levy Econ. Inst. of Bard Coll., Working Paper No. 74, 1992), <http://www.levyinstitute.org/pubs/wp74.pdf>.

197. See Stefano Battiston et al., *The Price Of Complexity In Financial Markets*, 113 PROC. NAT'L ACAD. SCI. U.S. 10031, 10031–36 (Sept. 2016), <https://doi.org/10.1073/pnas.1521573113>.

198. *Id.* at 10033.

199. *Id.* at 10031.

200. *Id.*

201. See Kathryn Judge, *Fragmentation Nodes: A Study in Financial Innovation, Complexity, and Systemic Risk*, 64 SAN. L. REV. 657, 659 (2012).

202. *Id.* at 659–60.

203. See *The Impact of High-Frequency Trading: Manipulation, Distortion or a Better-Functioning Market?*, WHARTON SCH. U. PA., KNOWLEDGE@WHARTON (Sept. 30, 2009), <https://knowledge.wharton.upenn.edu/article/the-impact-of-high-frequency-trading-manipulation-distortion-or-a-better-functioning-market/> (“High-frequency trading involves investors with good computers taking advantage of small discrepancies in prices.”) [hereinafter KNOWLEDGE@WHARTON].

“undermine[d] efficient capital allocation,” which results in information loss by introducing systemic model risk.<sup>204</sup> Further, the costs of competing with HF traders disincentivizes informed traders from correcting information deficits.<sup>205</sup> This could lead to a skewing towards HF traders that favors “short-term and more cheaply researched information,”<sup>206</sup> which, as explained above, can be catastrophic if followed by herding from investors.

Another possibility for how HF traders may contribute to less efficient markets occurs when programs do not incorporate information into the algorithm that “falls outside of the scope of their programming.”<sup>207</sup> When an exceptional event, such as a liquidity freeze, occurs, it is often less costly to withdraw from the market in the short-term instead of engaging in a full re-programming of the algorithm.<sup>208</sup> Yadav’s research is supported by other empirical studies in finance, which found short-term directional efficiency in HF trading but procyclicality in a crisis.<sup>209</sup> Combined with the costs imposed on informed traders, Yadav’s research lends support against the orthodox view that security pricing efficiently incorporates all (or most) information.<sup>210</sup>

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204. Yesha Yadav, *How Algorithmic Trading Undermines Efficiency in Capital Markets*, 68 VAND. L. REV. 1607, 1607, 1647 (2015) (“[M]odels generate overly stylized, simplified representations of otherwise messy economic relationships. Put more simply, models can be unreliable and generate bad outcomes. The sources of such error can be numerous.”).

205. *Id.* at 1615 (“Algorithmic trading can impose costs on informed traders who confront pervasive conflicts with algorithmic actors that can systematically outrun them.”).

206. *Id.* at 1670.

207. *Id.* at 1613.

208. *See id.* at 1613–14 (“Given the high costs of building algorithms, traders have little incentive to precision-program their algorithms to deal with exceptional events that occur infrequently. Instead, it makes more sense for traders to simply withdraw from the market in cases of market disruption, leaving other traders to pick up the slack . . . [However,] these dynamics are disruptive for the market as a whole.”).

209. *See* Jonathan Brogaard et al., *High Frequency Trading and Price Discovery* 1–3 (Eur. Cent. Bank, Working Paper No. 1602, 2013), <http://ssrn.com/abstract=1928510> (discussing the role of HF trading in price efficiency); *see also* COMMODITY FUTURES TRADING COMM’N & SEC. & EXCH. COMM’N, FINDINGS REGARDING THE EVENTS OF MAY 6, 2010 45 (2010), <http://www.sec.gov/news/studies/2010/marketevents-report.pdf> (analyzing HF trading in response to market conditions).

210. *See* Yadav, *supra* note 204, at 1615 (“By free-riding on the intelligence of others, algorithmic traders save themselves time and money while also taking home a share of the winnings. Faced with diminishing gains, informed traders can end up with fewer incentives to invest in long-term research and analysis. When informed actors see their gains systematically reduced or wiped out by swifter algorithmic traders, investing in good-quality information makes little business sense.”).

ETFs, which are heavily traded by HF traders,<sup>211</sup> are thus found squarely in the middle of a debate on the distortive effects of financial product innovation concerning market information and price discovery. When ETFs are held for only very short periods of time for specific tax purposes, they are called “heartbeat” trades; a trade strategy that some call Wall Street’s “dirty little secret.”<sup>212</sup> Such trades highlight a modern-day phenomenon facilitated by today’s lightning-fast trading infrastructure: financial instruments like ETFs are not just purchased for their intrinsic value or because of a long-term desire for exposure to an underlying asset class, but for a variety of short-term reasons.<sup>213</sup>

The takeover of financial market trading by algorithms focused on short-term gain interplays is a broad investment trend that favors passive and index investing over an active stock selection and fundamental analysis of underlying asset values.<sup>214</sup> J.P Morgan Chase analysts recently estimated that nearly 90% of all equity trading is trend-based from “quant[s], index[es], ETFs, futures and options-related strategies.”<sup>215</sup> Some economists believe that disregarding fundamental information in favor of mimicking popular index structures is creating a store of systemic risk due to “stocks that were disproportionately bought because of ETFs and index funds being disproportionately sold.”<sup>216</sup> Further, information becomes more difficult to ascertain in “complex, noisy and opaque markets . . . [, which] could cause a significant misallocation of capital.”<sup>217</sup>

Not only do risks arise from the operation of the ETF structure,<sup>218</sup> they also arise based on *how* the ETFs themselves are used. For example, mutual fund managers have reportedly

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211. See generally Drew Voros, *High-Frequency Trading Key to ETFs*, ETF.COM (Sept. 25, 2013), <https://www.etf.com/sections/features/19955-high-frequency-trading-key-to-etfs.html> (indicating that ETFs are utilized by high-frequency traders because “[t]hey have incredibly good spreads and . . . [investors can] trade in and out of them when they want.”).

212. Mider et al., *supra* note 4.

213. See *id.* (explaining that investors frequently utilize ETFs as tax dodges).

214. See Megan Greene, *Passive Investing is Storing Up Trouble*, FIN. TIMES (Aug. 2, 2018), <https://www.ft.com/content/cdbdd01a-95b4-11e8-95f8-8640db9060a7> (“A fundamental shift in market structure towards rules-based, passive investing over the past decade means a lot of trading is no longer based on fundamentals.”).

215. Thomas, *supra* note 65.

216. Greene, *supra* note 214.

217. *Id.* (“One would be hard pressed to find a customer willing to hand their money to an investor who genuinely does not care about fundamentals or price. Yet this is the strategy pursued by passive and quant funds.”).

218. See Clements, *supra* note 14, at 30–42.

used bond ETFs as a cash surrogate.<sup>219</sup> If these funds experience an extensive redemption demand, the mutual fund managers will likely have to sell the ETFs to obtain cash and satisfy client withdrawal requests.<sup>220</sup> This ETF sell-off could both induce a liquidity crunch in bond ETFs and a cash shortfall if the managers have difficulty selling the ETFs.<sup>221</sup> It could also induce a contagion sell-off in the underlying bonds.<sup>222</sup>

*C. ETFs' Impact on Asset Prices as a Source of  
Fundamental Information*

There is a new belief gaining traction, similar to the belief that ETFs can create liquidity illusions,<sup>223</sup> that ETFs are impeding price discovery and thus masking market risk and distorting information amongst well-known market participants.<sup>224</sup> Billionaire investor Carl Icahn has called the market a “bubble;” Jeffrey Gundlach and Jack Bogle warn about the herding potential in ETFs; Nobel Laureate Robert Shiller, as well as hedge fund manager Howard Marks, express concern about an indexer’s “free-riding” on those who perform active price discovery.<sup>225</sup>

Neoclassical economic theory looks to price as a signal of all available information and corresponding risk (including liquidity) of an asset.<sup>226</sup> However, there is an active and rigorous debate about whether price efficiently signals all available information

219. See Rachel Evans & Emily Barrett, *Fund Blowups Rekindle Doubts About ETF Liquidity in Crisis Times*, BLOOMBERG (last updated July 12, 2019, 10:00 PM), <https://www.bloomberg.com/news/articles/2019-07-12/panic-sales-rekindle-debate-over-etf-liquidity-in-next-crisis>.

220. *Id.*

221. *See id.*

222. *See id.*

223. *See* Clements, *supra* note 14, at 32–34.

224. Carmen Reinicke, *'Big Short' Investor Michael Burry is Calling Passive Investment a 'Bubble.' He's Not the Only Finance Luminary Sounding the Alarm*, MKT. INSIDER (Aug. 29, 2019, 1:36 PM), [https://markets.businessinsider.com/news/stocks/investors-that-have-spoken-out-against-passive-investing-2019-8-1028485512?utm\\_source=markets&utm\\_medium=ingest#carl-icahn1](https://markets.businessinsider.com/news/stocks/investors-that-have-spoken-out-against-passive-investing-2019-8-1028485512?utm_source=markets&utm_medium=ingest#carl-icahn1).

225. *Id.*

226. *See* WILLIAM F. SHARPE, PORTFOLIO THEORY AND CAPITAL MARKETS 77–78 (Basil G. Dandison, Jr. & Stuart A. Kenter eds., 1970); Eugene F. Fama, *Efficient Capital Markets: A Review of Theory and Empirical Work*, 25 J. FIN. 383, 388 (1970) (“All the empirical research on the theory of efficient markets has been concerned with whether prices ‘fully reflect’ particular subsets of available information.”); Sanjay Basu, *Investment Performance of Common Stocks in Relation to Their Price-Earnings Ratios*, 32 J. FIN. 663, 663 (1977); Jeremy C. Stein, *Efficient Capital Markets, Inefficient Firms: A Model of Myopic Corporate Behavior*, 104 Q. J. ECON. 655, 656 (1989).

and risks.<sup>227</sup> Many researchers believe markets are not perfectly efficient,<sup>228</sup> thus asset prices do not reflect all available information.<sup>229</sup> Markets are susceptible to human biases, unpredictable decisions, and behavioral irrationalities.<sup>230</sup> Professor Andrew Lo hopes to bridge this divide through his adaptive markets hypothesis.<sup>231</sup>

Critics of passive investing feel that it disincentives price discovery for the underlying assets comprising an index or benchmark.<sup>232</sup> The interaction between markets, market participants, and information drives the price of a security.<sup>233</sup>

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227. See, e.g., George A. Akerlof, *Behavioral Macroeconomics and Macroeconomic Behavior*, 92 AM. ECON. REV. 411 (2002) (describing how behavioral macroeconomists have produced models that account for various macroeconomic phenomena); GEORGE A. AKERLOF & ROBERT J. SHILLER, *PHISHING FOR PHOOLS: THE ECONOMICS OF MANIPULATION AND DECEPTION* (1st ed. 2015) (discussing how free markets provide incentives for firms to exploit cognitive biases of consumers); Paul G. Mahoney, *Market Microstructure and Market Efficiency*, 28 J. CORP. L. 541 (2003) (considering the effect of market makers on market efficiency). Also see LOUIS BACHELIER, *THE THEORY OF SPECULATION: THE ORIGINS OF MODERN FINANCE* (1st ed. 1900); PAUL H. COOTNER, *THE RANDOM CHARACTER OF STOCK MARKET PRICES* (1st ed. 1964); BURTON G. MALKIEL, *A RANDOM WALK DOWN WALL STREET* (1st ed. 1973); and Eugene F. Fama, *Random Walks in Stock Market Prices*, 21 FIN. ANALYSTS J., Sept.–Oct. 1965, at 55 (1965) to trace the origins of the efficient market hypothesis.

228. See Razeen Sappideen, *The Paradox of Securities Markets Efficiency: Where to Next?*, 2009 SING. J. LEGAL STUD. 80, 81 (2009) (“[P]rice movements in securities markets are not the outcome purely of such calculated and strategic behaviour, but rather the product of idiosyncratic behaviour filled with expectations, prejudices and phobias and strewn with a good mix of rational and irrational herd behaviour—all of which while strategic in their own way—nevertheless fall far short of EMH efficient behaviour.”).

229. See Lynn A. Stout, *The Mechanisms of Market Inefficiency: An Introduction to the New Finance*, 28 J. CORP. L. 635, 649–50 (2003).

230. See, e.g., Robert Shiller, *From Efficient Markets Theory to Behavioral Finance*, 17 J. ECON. PERSP., Winter 2003, at 83 (discussing the development of behavioral finance); HERSH SHEFRIN, *BEYOND GREED AND FEAR: UNDERSTANDING BEHAVIORAL FINANCE AND THE PSYCHOLOGY OF INVESTING* (1st ed. 2000) (using psychological research to show how human behavior guides stock selection, financial services, and corporate financial strategy); ANDREI SHLEIFER, *INEFFICIENT MARKETS: AN INTRODUCTION TO BEHAVIORAL FINANCE* (1st ed. 2000); JOSE A. SCHEINKMAN, *SPECULATION, TRADING, AND BUBBLES* (1st ed. 2014) (examining the effect of behavioral finance on market bubbles); Daniel Kahneman & Amos Tversky, *Prospect Theory: An Analysis of Decisions Under Risk*, 47 ECONOMETRICA 263 (1979) (presenting an alternative descriptive model of economic behavior called “prospect theory”).

231. See generally ANDREW LO, *ADAPTIVE MARKETS: FINANCIAL EVOLUTION AT THE SPEED OF THOUGHT* (1st ed. 2017) (illustrating a new framework—the Adaptive Markets Hypothesis—to bridge the gap between the economic philosophies of market rationality and market irrationality).

232. See Roberts, *supra* note 99 (“A passive investor is a parasite. The passive investor simply buys an index fund, sits back and enjoys the show. Since markets mostly go up, the passive investor mostly makes money but contributes nothing to price discovery.”).

233. Simon Constable, *What is ‘Price Discovery’ and Why Does It Matter?*, WALL ST. J. (Jan. 8, 2017, 10:01 PM), <https://www.wsj.com/articles/what-is-price-discovery-and-why-does-it-matter-1483930860>.



Some believe that ETFs and other passive fund structures are disrupting the price discovery mechanism because ETF investors fail to discover the true asset value of a fund's underlying holdings.<sup>234</sup> Therefore, stocks held within funds can be mispriced.<sup>235</sup> The ESRB Report notes that, in most cases, ETF investors use the investment vehicle for exposure to the market itself rather than as an idiosyncratic component of individual securities.<sup>236</sup> Thus, while there is an incentive for price discovery activity for an ETF sector index or the market at large, there is no similar incentive as to any individual security.<sup>237</sup>

Michael Burry, the antihero of Michael Lewis' best-selling book *The Big Short*, has been particularly vocal against index funds and ETFs.<sup>238</sup> Burry compares ETFs to other controversial financial products like collateralized debt instruments during the GFC.<sup>239</sup> These financial products were the very instruments that provided Burry great wealth and notoriety after he made contrarian bets against them.<sup>240</sup> Burry's central critique is that just as demand for collateralized debt obligations and other mortgage-backed securities distorted prices for subprime mortgages in the GFC, demand for ETFs and passive investments distorts prices for large capital equities that comprise the popular indexes.<sup>241</sup> He suggests that demand for large-cap index funds has impeded price discovery and inflated those stocks, while simultaneously pushing down prices of smaller companies; the longer the flows move in this direction, the greater the fallout will be when it reverses.<sup>242</sup> Burry suggests that "[t]his structured asset play is the same story again and again," driven by the marketing savvy of asset managers who

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234. *Id.*

235. *Id.*

236. ESRB Report, *supra* note 6, at 19.

237. See Lawrence R. Glosten et al., *ETF Activity and Informational Efficiency of Underlying Securities* 15–16 (Columbia Bus. Sch., Research Paper No. 16-71, 2019), <https://ssrn.com/abstract=2846157>.

238. See Ben Winck, 'Big Short' Investor Michael Burry Predicted the Housing Crisis. Now He's Calling Passive Investment a 'Bubble,' *MKT. INSIDER* (Aug. 28, 2019, 1:36 PM), [https://markets.businessinsider.com/news/stocks/big-short-investor-michael-burry-calls-passive-investment-a-bubble-2019-8-1028481790?utm\\_source=msn.com&utm\\_medium=referral&utm\\_content=msn-slideshow&utm\\_campaign=bodyurl?utm\\_source=markets&utm\\_medium=ingest](https://markets.businessinsider.com/news/stocks/big-short-investor-michael-burry-calls-passive-investment-a-bubble-2019-8-1028481790?utm_source=msn.com&utm_medium=referral&utm_content=msn-slideshow&utm_campaign=bodyurl?utm_source=markets&utm_medium=ingest).

239. See Reed Stevenson, *The Big Short's Michael Burry Explains Why Index Funds Are Like Subprime CDOs*, *BLOOMBERG* (Sept. 4, 2019, 5:41 AM), <https://www.bloomberg.com/news/articles/2019-09-04/michael-burry-explains-why-index-funds-are-like-subprime->

240. See *id.*

241. *Id.*; see also Reinicke, *supra* note 224.

242. See Stevenson, *supra* note 239; Reinicke, *supra* note 224.

know they can make up for low fees with scale.<sup>243</sup> According to Burry, this trend is fueling another bubble and causing smaller companies to be orphaned for the herd-driven demand of large-equity indexes.<sup>244</sup>

Burry's contention is not without empirical support; ETFs' share of passive fund assets grew from around 30% in 2007 to over 40% in 2017.<sup>245</sup> A 2019 estimate noted that passive management now controls almost half of the current U.S. stock market.<sup>246</sup> Other estimates note that a surge in passive investors over the last two years has pushed passive control of equities in the U.S. to around 60% of the market, with a further 20% of market controlled by non-fundamental algorithmic quant-funds.<sup>247</sup> This means that the market today is more "sensitive to headlines and more prone to sharp price swings" than in the past because today's market is less reliant on asset fundamentals.<sup>248</sup>

Evidence of valuation differentials between large-cap and small-cap stocks also supports Burry's thesis.<sup>249</sup> A recent report notes that large companies, frequently comprised of popular indexes, currently trade at a premium compared to smaller ones.<sup>250</sup> However, this is not necessarily a complete picture; it is possible that the differential only reflects the riskier proposition of investing in smaller companies—and nothing else.<sup>251</sup> Nevertheless, this highlights an important area where more research is necessary: to what extent are passive investment flows into large-cap heavy index funds inducing an artificial premium in the price of these large companies?

In a recent study on "the implications of passive investing for securities markets," the Bank For International Settlements (BIS) suggests that it "seems plausible that the portfolio-wide

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243. Stevenson, *supra* note 239.

244. See Winck, *supra* note 238.

245. See Vladyslav Sushko & Grant Turner, *The Implications of Passive Investing for Securities Markets*, BANK FOR INT'L SETTLEMENTS Q. REV., Mar. 2018, at 113, 113–14.

246. See Jeff Cox, *Passive Investing Automatically Tracking Indexes Now Controls Nearly Half the US Stock Market*, CNBC (last updated Mar. 19, 2019, 5:56 PM), <https://www.cnbc.com/2019/03/19/passive-investing-now-controls-nearly-half-the-us-stock-market.html>.

247. Yun Li, *80 % of the Stock Market is Now on Autopilot*, CNBC (June 29, 2019, 8:30 AM), <https://www.cnbc.com/2019/06/28/80percent-of-the-stock-market-is-now-on-autopilot.html>.

248. *Id.*

249. See Harrison Schwartz, *Michael Burry Is Correct About Passive Investing: Here Is the Proof*, SEEKING ALPHA (Aug. 29, 2019, 3:23 AM), <https://seekingalpha.com/article/4288578-michael-burry-correct-passive-investing-proof>.

250. See *id.* (noting that large companies are trading at a premium because "large companies have much lower earnings yields (inverse of 'P/E') than smaller companies.>").

251. See *id.*

investing and trading of passive funds could bring about greater correlation of index securities and reduce the security-specific information contained in prices.”<sup>252</sup> The BIS advocates for more studies on the impact of ETF trading and the prices of underlying securities.<sup>253</sup> The BIS report also notes the ability of passive fund managers to free-ride on the valuation efforts of active fund managers as to individual securities in a given index.<sup>254</sup> Thus, “an increase in the share of passive portfolios might reduce the amount of information embedded in prices, and [thus] contribute to pricing inefficiency and the misallocation of capital.”<sup>255</sup>

There is also a growing body of evidence showing that ETFs are associated with co-movement of asset prices for the securities included in the index itself and between ETFs with similar benchmarks.<sup>256</sup> Recent studies reveal that arbitrage of S&P 500 tracked ETFs led to the co-movement of S&P 500 stocks.<sup>257</sup> Underlying asset price co-movement makes markets less efficient by distorting the informational value of the stock itself and making it sensitive to index trades based on the news cycle rather than security-specific fundamental information.<sup>258</sup> It also introduces system-level risk through the possibility of simultaneous investor loss, synchronized sell-offs, and company insolvencies.<sup>259</sup>

The price co-movement is driven by the activities of APs acting under the arbitrage function who purchase or sell underlying securities based on the “portfolio weights in the creation baskets.”<sup>260</sup> As identified in the ESRB Report, companies that are over-weighted in an index have arbitrage sensitivity and a “higher co-movement with ETF returns.”<sup>261</sup> These securities tend to “overreact to a repricing of [an] ETF.”<sup>262</sup>

Doron Israeli and others have linked increased ETF ownership to a decline in the underlying security’s price efficiency because ETFs are cheaper to trade and therefore

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252. Sushko & Turner, *supra* note 245, at 129.

253. *Id.*

254. *Id.* at 119.

255. *Id.*

256. See ESRB Report, *supra* note 6, at 2, 19.

257. See Zhi Da & Sophie Shive, *Exchange Traded Funds and Asset Return Correlations*, 24 EUR. FIN. MGMT. 136, 152 (2018); see also Markus Leippold et al., *How Index Futures and ETFs Affect Stock Return Correlations* 28 (Apr. 24, 2016) (unpublished manuscript), <https://ssrn.com/abstract=2620955>.

258. See Da & Shive, *supra* note 257, at 137, 159.

259. ESRB Report, *supra* note 6, at 2, 19.

260. *Id.* at 19.

261. *Id.*

262. *Id.*

attract uninformed noise traders.<sup>263</sup> This increases the costs to obtain valid information about the underlying assets.<sup>264</sup> It also simultaneously disrupts the supply of available underlying tradeable securities while they are being held by a fund sponsor.<sup>265</sup> Similarly, Goldstein & Yang suggest that “traders not only bring fundamental information, through their speculative trading, but also unrelated noise, through their hedging-motivated trading, into the futures price.”<sup>266</sup> As a result, the information effect can either reduce or exacerbate bias in futures prices.<sup>267</sup>

At the heart of these studies is the observation that while passive investment strategies like ETFs provide low-cost benefits, they also come with indirect costs to financial markets, such as a potentially distortive impact on the value and clarity of securities prices as information signals.<sup>268</sup> Recent research also suggests that “ETF ownership may be detrimental to firm performance” since it impacts “the relationship between prices and corporate policies.”<sup>269</sup> Other price distortive impacts related to ETFs include increased price correlation of securities comprising a given index (reducing the benefits of diversification all together), overvaluation of the underlying securities, and the observation of “excessive movements in the underlying securities and a subsequent reversal in prices.”<sup>270</sup>

In the context of a crisis, some believe that active market participants would provide stability by purchasing undervalued assets when passive investors (unaware of the underlying asset’s true value) run for the exit.<sup>271</sup> Therefore, as the argument goes, passive investors free-ride on the upside of a fund’s value via positive market performance but contribute to economic instability in volatile markets and during a crisis.<sup>272</sup>

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263. See Doron Israeli et al., *Is There a Dark Side to Exchange Traded Funds?: An Information Perspective*, 22 REV. ACCT. STUD. 1048, 1048–50 (2017).

264. *Id.*

265. *Id.*

266. Itay Goldstein & Liyan Yang, *Commodity Financialization and Information Transmission 2* (Rotman Sch. of Mgmt., Working Paper No. 2555996, 2018), <https://ssrn.com/abstract=2555996>.

267. See *id.* at 26.

268. See Constantinos Antoniou et al., *ETF Ownership and Corporate Investment*, HARV. L. SCH. F. ON CORP. GOVERNANCE (June 28, 2018), <https://corpgov.law.harvard.edu/2018/06/28/etf-ownership-and-corporate-investment/>.

269. *Id.*

270. Ricardo Crisostomo & Jorge Medina, *ETFs and Financial Stability: A Compendium of Possible Risk Sources*, CNMV BULL., QUARTER IV 2018, at 71, 75.

271. See Rickards, *supra* note 93.

272. *Id.*

The distortive impact of ETFs on underlying asset price formation is not settled.<sup>273</sup> The Central Bank of Germany recently called the relationship between ETF activity and underlying asset prices inconclusive.<sup>274</sup> There are also recent empirical studies that downplay the extent to which ETF trading causes spillover effects for the underlying assets.<sup>275</sup>

ETFs may also positively contribute to price valuation by providing additive liquidity to the secondary market.<sup>276</sup> However, the significant growth of ETFs makes price-driven information signals and their relationship to passive investing a worthwhile pursuit for continuous investigation.<sup>277</sup> To clarify, passive purchase decisions do not necessarily imply a “passivity on the part of ETF companies as regards managerial control”—ETF sponsors can “influence corporate [decision-making] by exercising voting rights in shareholders’ meetings.”<sup>278</sup> A growing number of professional investment managers are concerned about the effect these popular products are having on the market’s informational efficiency.<sup>279</sup>

#### *D. ETFs’ Impact on Volatility and Price Movement in Underlying Assets*

Secondary market financial product growth, of which ETFs represent a large proportion, may also be facilitating asset price bubbles and increasing market volatility.<sup>280</sup> The ESRB Report identifies ETFs not only as financial products “associated with increased price volatility of the constituent securities,” but also as financial products that attract short-term, directional, and noise traders, which increases both the volatility of the ETF

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273. See Asjlyln Loder, *Do Passive Investors Move Markets? They Can*, WALL ST. J. (last updated July 18, 2018, 4:37 PM), <https://www.wsj.com/articles/etfs-unlikely-to-cause-widespread-market-disruptions-research-shows-1531906200>.

274. See *The Growing Importance of Exchange Traded Funds in the Financial Markets*, DEUTSCHE BUNDESBANK MONTHLY REP., Oct. 2018, at 79, 96 [hereinafter DEUTSCHE BUNDESBANK REPORT].

275. See Travis Box et. al., *Intraday Arbitrage Between ETFs and Their Underlying Portfolios 7* (Jan. 25, 2019) (unpublished manuscript), <https://ssrn.com/abstract=3322400>.

276. *Id.* at 99.

277. See *id.* at 96.

278. DEUTSCHE BUNDESBANK REPORT, *supra* note 274, at 96.

279. See Charles Stein, *ETFs Are ‘Weapons of Mass Destruction,’ FPA Managers Say*, BLOOMBERG (Apr. 27, 2017, 12:38 PM), <https://www.bloomberg.com/news/articles/2017-04-27/etfs-are-weapons-of-mass-destruction-fpa-capital-managers-say> (describing ETFs as “weapons of mass destruction” given their distortive impact on stock prices).

280. See generally Ehsan Ahmed et al., *Financialization and Speculative Bubbles - International Evidence*, 19 J. APPLIED BUS. & ECON., no. 4, 2017, at 10, 13 (analyzing the presence of speculative bubbles in markets that have undergone financialization).

index and its individual constituent securities.<sup>281</sup> The report also notes that certain types of ETFs—those that use leverage—“amplify the volatility of security prices through their rule-based trading strategies.”<sup>282</sup>

In a related study using daily stock market data from January 1993 to March 2005, nonlinear speculative bubbles increased in incidence in 23 international markets.<sup>283</sup> Other studies suggest that certain types of financial product innovations may be decreasing market liquidity while,<sup>284</sup> at the same time, increasing volatility through interaction effects and flash crashes.<sup>285</sup> The cumulative effect of heightened volatility, as noted by the ESRB Report, is that “large short-term directional bets in the ETF market can eventually result in market crashes, and thus exacerbate the volatility of the index itself, as well as the sensitivity of security prices to market crashes.”<sup>286</sup>

A recent paper by Professors Itzhak Ben-David, Francesco Franzoni, and Rabih Moussawi confirmed results from previous investigations linking ETFs with an increase in volatility in underlying securities.<sup>287</sup> This research shows empirically that “stocks with more ownership by ETFs display higher volatility than otherwise similar securities,” which is attributed to the fact that ETFs are the preferred vehicle for investors who are focused on short-horizon liquidity, resulting in higher turnover.<sup>288</sup> Thus, ETF demand shocks from HF traders, which enhance secondary market trading, can spill over to the prices of the ETF’s underlying securities, leading to their higher volatility.<sup>289</sup> This study also found that increased volatility in the underlying stocks brought on by ETF trading did not enhance price discovery;<sup>290</sup> instead, it was distortive noise.<sup>291</sup> The fact that the enhanced volatility cannot be diversified suggests ETFs may be

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281. ESRB Report, *supra* note 6, at 2, 19–20.

282. *Id.* at 2.

283. See Ahmed et al, *supra* note 280, at 9–10.

284. See Sunny Oh, *Short Interest on Junk Bond ETFs Hits Record as Investors Warn of ‘Liquidity Mismatch,’* MARKETWATCH (Mar. 1, 2018, 2:06 PM), <https://www.marketwatch.com/story/short-interest-on-junk-bond-etfs-hits-record-as-investors-warn-of-liquidity-mismatch-2018-03-01>.

285. See KNOWLEDGE@WHARTON, *supra* note 203.

286. ESRB Report, *supra* note 6, at 20.

287. See Itzhak Ben-David et al., *Do ETFs Increase Volatility?* 20 (Fisher Coll. of Bus., Working Paper No. 2011-03-20, 2017), [https://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=1967599](https://papers.ssrn.com/sol3/papers.cfm?abstract_id=1967599); see also Timothy Krause et al., *Exchange Traded Funds, Liquidity and Volatility*, 24 APPLIED FIN. ECON. 1617 (2014).

288. Ben-David et al., *supra* note 287, at 48.

289. *Id.* at 2.

290. See *id.* at 28.

291. *Id.* at 47–48.

making markets *less* efficient and potentially increasing systemic risk.<sup>292</sup> The ESRB Report supports the idea of distortive information from ETFs, including the view that non-fundamental shocks are integrated into underlying asset prices as a result of ETF trading.<sup>293</sup>

ETF product variations, such as the linked products that generate returns based on the movement of the VIX, have been an independent source of heightened volatility, such as the linked products that generate returns based on the movement of the VIX.<sup>294</sup> Some of these products, including the Barclay's iPath VIX Short Term Futures Note, appreciate when volatility spikes, while others, such as the Proshares Short VIX ETF, decrease in value when volatility subsides, independent of the equity or bond market movements. In February 2018, a spike in volatility drove a dramatic sell-off of inverse, VIX-linked, exchange-traded notes.<sup>295</sup> Of particular concern, during the crash Credit Suisse's *Velocity Shares Daily Inverse VIX Short-Term ETN* traded "at a more-than-92 percent discount to [its] closing value the prior day," and resulted in Credit Suisse terminating the product.<sup>296</sup> These products also create counterparty risk because they are redeemed in large blocks and depend on the creditworthiness of the issuer.<sup>297</sup> There is also empirical evidence of trading volume similarities between volatility-related ETPs and volatility futures, which supports the argument that these products are not solely a hedging instrument, but rather an independent contributor to market volatility.<sup>298</sup>

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292. *Id.* at 48.

293. *See* ESRB Report, *supra* note 6, at 22.

294. *See* VIX, CBOE, <http://www.cboe.com/vix> (last visited Nov. 4, 2019).

295. Joanna Ossinger, *VIX-Related ETPs Go Wild in After-Hours Trading Route*, BLOOMBERG (last updated Feb. 6, 2018, 4:29 AM), <https://www.bloomberg.com/news/articles/2018-02-05/vix-related-etps-go-wild-in-after-hours-trading-in-wake-of-rout>.

296. Michael Shields & Trevor Hunnicutt, *Credit Suisse 'Volatility' Fund Liquidated After Market Selloff*, REUTERS (Feb. 6, 2018, 8:50 AM), <https://www.reuters.com/article/us-credit-suisse-gp-notes/credit-suisse-volatility-fund-liquidated-after-market-selloff-idUSKBN1FQ256>.

297. John Waggoner, *Exchange-Traded Notes Add Another Layer of Risk*, INVESTMENTNEWS (Feb. 7, 2018), <http://www.investmentnews.com/article/20180207/FREE/180209934/exchange-traded-notes-add-another-layer-of-risk>.

298. *See* ESRB Report, *supra* note 6, at 24; *see also* Nicolas P. B. Bollen et al., *Tail Wags Dog: Intraday Price Discovery in VIX Markets*, 37 J. FUTURES MKTS. 431 (2017) (demonstrating that VIX futures price changes now leads changes in the VIX cash index).

*E. How Complexity and Informational Opacity Impacted the Global Financial Crisis*

The GFC was undoubtedly influenced by the complexity and opacity of the over-the-counter derivatives market,<sup>299</sup> as well as the wholesale and repo markets.<sup>300</sup> First, extreme liquidity risk is inherently opaque because it is impossible to timely disclose.<sup>301</sup> According to Professor William Fisher, predicting extreme liquidity risk is akin to divining a heart attack because heightened risk disclosure will not necessarily work.<sup>302</sup> To make his case, Fisher details not only the clearing bank liquidity squeeze that JP Morgan imposed on Lehman, with its triparty repo collateral haircuts,<sup>303</sup> but also the repo lender run on Lehman that occurred when lenders almost simultaneously pulled funding support.<sup>304</sup>

Complexity risk has also been cited as a contributing factor in the Enron scandal and the Long-Term Capital Management failure,<sup>305</sup> and there is evidence that market complexity and a glut of financial intermediation facilitated an information loss in the GFC.<sup>306</sup> As Professor Manuel Utset has noted, markets are multi-actor complex institutions that facilitate price discovery through the aggregation of information.<sup>307</sup> Unfortunately, what we are seeing in recent years is that the proliferation of market complexity increases informational opacity through an extended chain of financial intermediation, despite rational behavior by individual actors.<sup>308</sup> This occurs because difficult-to-value securities and the interconnectedness between intermediaries produces market complexity, which simultaneously “increase[s] the immediate costs of investing in information” and, in turn,

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299. See generally Stout, *supra* note 229 (explaining the weaknesses of the Efficient Capital Market Hypothesis).

300. See Manuel A. Utset, *Complex Financial Institutions and Systemic Risk*, 45 GA. L. REV. 779, 785–86, 799 (2011).

301. Fisher, *supra* note 31, at 521-23.

302. See *id.* at 522.

303. See *id.* at 480–81.

304. See *id.* at 484–85.

305. See Daniel Altman, *Contracts So Complex They Imperil the System*, N.Y. TIMES (Feb. 24, 2002), <http://www.nytimes.com/2002/02/24/business/contracts-so-complex-they-imperil-the-system.html>.

306. See Manuel A. Utset, *Rational Financial Meltdowns*, 10 HASTINGS BUS. L. J. 407, 418 (2014) (“Transactions involving intermediaries create a two-sided informational asymmetry problem: Parties who rely on intermediaries need to protect themselves against the informational risks posed by the intermediaries; in turn, the intermediaries must protect themselves from the informational risks posed by those parties.”).

307. *Id.* at 407.

308. See *id.* at 408.



drives an incentive to delay obtaining such information.<sup>309</sup> In an opaque-information environment, all parties end up acting in a similar manner because conducting the due diligence to ascertain the true risk of an underlying investment is too costly.<sup>310</sup> Thus, what is otherwise an individually rational decision leads, instead, to aggregate informational deficits at the group level.<sup>311</sup>

This dynamic manifested in the GFC via the repo market runs on Lehman, where lenders were incentivized to maintain their equilibrium positions until they all simultaneously reversed those positions.<sup>312</sup> As Professor William Fisher described, the repo lenders were “information insensitive until shock,” meaning that they continued lending on new information without adjusting any terms, until they withdrew in an apparent coordination like “retail depositors during a bank run.”<sup>313</sup> Professor Fisher adds that the Lehman case was one of extreme liquidity risk because the fatal liquidity context developed “with frightening speed.”<sup>314</sup> The liquidity failure was driven by actors outside of Lehman, such as the triparty repo lenders and clearing banks, with complex and fast-moving interactions and sophisticated parties acting in herds.<sup>315</sup> These parties failed to adjust to new information gradually and instead “simply stopped lending altogether.”<sup>316</sup> Available information in the market was also asymmetrical, especially considering that multiple parties concealed their intentions from other market participants.<sup>317</sup>

Research from the Financial Stability Board and the Federal Reserve Bank of Boston has also found that, leading up to and during the GFC, informational opacity exacerbated the roll-over risks in the wholesale funding markets and encouraged creditor runs.<sup>318</sup> In the future, it could decrease contagion and the spreading of runs to other institutions or asset classes.<sup>319</sup>

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309. *Id.* at 424.

310. *Id.* at 428–29.

311. *Id.* at 429.

312. *Id.* at 441.

313. Fisher, *supra* note 31, at 485.

314. *Id.* at 521.

315. *Id.* at 523–24.

316. *Id.* at 522–23.

317. *See id.* at 521–23.

318. *See* FIN. STABILITY BD., STRENGTHENING OVERSIGHT AND REGULATION OF SHADOW BANKING 42 (2013), [https://www.fsb.org/wp-content/uploads/r\\_130829b.pdf](https://www.fsb.org/wp-content/uploads/r_130829b.pdf) (“Better knowledge of the type of collateral financed in these markets and their quantities could have helped authorities design their policy responses.”); Michal Kowalik, *Opacity and Disclosure in Short-Term Wholesale Funding Markets* 1 (Fed. Reserve Bank of Bos., Working Paper No. RPA 16-02, 2016) (“[D]uring the recent crisis . . . roll-over risk in short-term wholesale funding markets was exacerbated by their opacity. Opacity can exacerbate this roll-over risk in two ways. First, short-term creditors in opaque funding

*F. Do Investors Really Understand ETF Interaction Risks?*

As the investor base for ETFs grows, it is fair to wonder whether average investors understand interaction risks in their investment decisions, and whether they can make a “realistic assessment of how ETFs will perform in stressed market conditions.”<sup>320</sup> Further, given that there is empirical evidence that “investment flows tend to chase ETFs’ returns,”<sup>321</sup> to what extent does rationality even play a role in the decision to invest in ETFs altogether? Logically-speaking, investment decisions should be made following an assessment of the managerial skill or financial prospectus of an underlying company;<sup>322</sup> they should not be controlled entirely by returns on an investment fund.

The fragilities within the ETF ecosystem highlight separate but relevant uncertainties regarding the efficacy of regulatory disclosure requirements,<sup>323</sup> including the extent that risks in ETFs have become too complex to depict as well as the informational effectiveness of adding further disclosure to the already-gargantuan requirements that financial product issuers face.<sup>324</sup> Further studies are warranted on the interaction effects between these ETF ecosystem intermediaries and the potential

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markets are more prone to run. Second, the bank supervisors cannot detect the early buildup in liquidity risk and cannot make informed decisions about arresting system-wide disruptions once a crisis affects wholesale funding markets.”).

319. Kowalik, *supra* note 318, at 2–7. Regarding contagion risk, there is modeling evidence that small shocks in complex financial networks can lead to widespread fallout. See Richard J. Caballero & Alp Simsek, *Fire Sales in a Model of Complexity*, 68 J. FIN. 2549, 2552 (2013).

320. CBI DISCUSSION PAPER, *supra* note 89, at 11.

321. ESRB Report, *supra* note 6, at 22; see also Christopher P. Clifford et al., *What Drives ETF Flows?*, 49 FIN. REV. 619, 621 (2014) (“Given that our ETFs are mostly passively managed, the pursuit of skilled managers cannot be the explanation and our results suggest that ETF investors chase returns out of naïve extrapolation bias.”).

322. See ESRB Report, *supra* note 6, at 22; see also Broman, *supra* note 120, at 30.

323. See Henry T. C. Hu, *Too Complex to Depict? Innovation, “Pure Information,” and the SEC Disclosure Paradigm*, 90 TEX. L. REV. 1601, 1602, 1654 (2012) (“Modern financial innovation has resulted in objective realities that are far more complex than in the past, often beyond the capacity of the English language, accounting terminology, visual display, risk measurement, and other tools on which all depictions must primarily rely.”) (“[T]he process of financial innovation may be undermined by cognitive biases (e.g., ignoring low probability, catastrophic events in derivatives modeling); the peculiarities of financial ‘science’ (e.g., departures from traditional scientific norms such as ‘universalism’), and the inability of banks to fully capture the benefits of their financial research and development (e.g., this ‘inappropriability’ resulting in the failure to invest enough to fully understand the characteristics of their complex products).”).

324. See Omri Ben-Shahar & Carl E. Schneider, *The Futility of Cost Benefit Analysis in Financial Disclosure Regulation*, 43 J. LEGAL STUD. (VOLUME SUPPLEMENT) S253, S256–57 (2014); see also Robert P. Bartlett, *Inefficiencies in the Information Thicket: A Case Study of Derivative Disclosures During the Financial Crisis*, 36 J. CORP. L. 1, 57 (2010).

for feedback loops or underlying asset price distortions, especially as ETFs evolve away from broad indices and head further down the path of sectoral or strategic focus.<sup>325</sup>

In 2018, the SEC instituted Rule 22e-4, and a new disclosure form (*N-PORT*), requiring liquidity risk management program disclosure for open-ended funds; Rule 22e-4 and N-Port seek to protect investors by creating enhanced transparency and ensuring funds can meet shareholder redemptions.<sup>326</sup> Because there are regulatory restrictions on ETF illiquid holdings,<sup>327</sup> ETFs must continually assess the “liquidity cost to the [APs] or other market participants, which could increase the cost of their participation and interfere with their role in the ETF arbitrage mechanism.”<sup>328</sup> These rules require the ETF’s annual shareholder report to provide “on an annual or semiannual basis a narrative discussion of the operation [and effectiveness] of the fund’s liquidity risk management program for the most recent fiscal year.”<sup>329</sup> Further, they must include cash balance disclosures and eliminate potential gaming behavior when funds classify their holdings into liquidity baskets.<sup>330</sup>

Even if investors are able to fully appreciate the risks when investing in ETFs, they may not be able to diversify the risks.<sup>331</sup> A recent study determined that “ETF ownership exacerbates the co-movement in the liquidity of constituent stocks,” and that this co-movement is driven by the arbitrage mechanism.<sup>332</sup> The authors conclude their study by noting that they “show that higher ETF ownership of stocks can reduce the ability of investors to diversify liquidity risk due to an increase in the commonality in liquidity of stocks included in ETF portfolios.”<sup>333</sup>

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325. See DP6 FEEDBACK STATEMENT, *supra* note 74, at 47–49.

326. See Press Release, U.S. Sec. & Exch. Comm’n, SEC Adopts Rules to Modernize Information Reported by Funds, Require Liquidity Risk Management Programs, and Permit Swing Pricing (Oct. 13, 2016), <https://www.sec.gov/news/pressrelease/2016-215.html>.

327. See SULLIVAN & CROMWELL LLP, SEC PROPOSES ETF RULE, AMENDS LIQUIDITY RISK REPORTING RULE AND REQUIRES INLINE XBRL REPORTING BY FUNDS 9 (July 11, 2018), <https://www.sullcrom.com/files/upload/SC-Publication-SEC-Proposes-ETF-Rule-Amends-Liquidity-Risk-Reporting-Rule-and-Requires-Inline-XBRL-Reporting-by-Funds.pdf>.

328. CBI DISCUSSION PAPER, *supra* note 89, at 23.

329. SULLIVAN & CROMWELL, *supra* note 327, at 9.

330. *Id.* at 7.

331. See Vikas Agarwal et al., Do ETFs Increase the Commonality in Liquidity of Underlying Stocks? 1 (Nov. 20, 2018) (unpublished manuscript), <https://ssrn.com/abstract=3001524>.

332. *Id.* at 29.

333. *Id.* at 30.

## IV. CONCLUSION

The ETF ecosystem is a prime example of a complex, layered financial product with resulting interaction risks as intermediaries and investors pursue individual goals in a collective ecosystem.<sup>334</sup> The question that looms is: at what point does a true tragedy of the commons occur in the ETF market where what is good for the individual becomes tragic for the wider economy?<sup>335</sup>

The decline in active investing and rise in passive investing has concerned many observers.<sup>336</sup> But what does it ultimately mean to markets? A line has been drawn in the investment industry between those who support the long-term utility of ETFs and those who maintain that they are distorting the prices of underlying assets.<sup>337</sup>

Those who lament the rise of ETFs argue that ETFs have an artificial influence on the supply and demand for many assets, including large-cap stocks, independent of the actual companies whose stock comprises an ETF.<sup>338</sup> They also note that ETFs impede price discovery, and a lack of price discovery can further distort a rational allocation of capital.<sup>339</sup>

However, ETFs have positive utility for many investors.<sup>340</sup> A market as fertile as the ETF market is driven by real demand and genuine product benefits, including lower costs,<sup>341</sup> tax advantages,<sup>342</sup> and secondary market liquidity.<sup>343</sup> The most effective counter-argument to support the positive utility of ETFs, when contending against the decline of active investment management, is simply the fact that investors are interested in

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334. See Omarova, *supra* note 168, at 763.

335. See Conrad de Aenlle, *Opinion: John Bogle Has a Warning for Index Fund Investors*, MARKETWATCH (June 1, 2017, 8:47 AM), <https://www.marketwatch.com/story/john-bogle-has-a-warning-for-index-fund-investors-2017-06-01>.

336. See *On the ETF Divide*, 34 GRANT'S INT. RATE OBSERVER, no. 19b, Oct. 14, 2016, at 1, 1.

337. *Id.*

338. *Id.* at 2–3.

339. *Id.* at 3.

340. See generally SU, *supra* note 1 (explaining that ETFs have become a common investment tool for Americans).

341. *Id.* at 20–21.

342. See Mark Kennedy, *ETF Tax Advantages Over Mutual Funds*, BALANCE (last updated July 15, 2019), <https://www.thebalance.com/etf-tax-advantages-over-mutual-funds-1215121>.

343. See *Understanding ETF Liquidity*, ETF.COM (Feb. 13, 2014), <https://www.etf.com/etf-education-center/21034-understanding-etf-liquidity.html>.

indexing because active managers routinely underperform passive funds at a higher cost.<sup>344</sup>

Regardless, the evidence shows that the growing size and future projections of ETFs as an asset class give rise to potential instabilities and inefficiencies.<sup>345</sup> The long-term uncertainty that passive investing may have on the economy makes ETFs a market segment to closely monitor. But how should regulators, academics, and interested stakeholders react? Certainly no one wants to revisit the economic fallout of the GFC.

This article has identified two echoes of the crisis in the nascent rise of ETFs and passive investing: first, they materialize investor herds, which could result in panic sell-offs and contagion in a crisis; second, they may be decreasing the informational efficiency of asset prices due to the onset of less active price discovery and an artificial demand for certain stocks tied to an ETF. Areas of further research have also been identified, including ideas for regulatory adaptation that could increase the price efficiency of the market and mitigate against the risk of information cascades and investor herding.

However, more empirical research is warranted on the precise nature of the relationship between ETF demand and underlying asset prices. Not everyone agrees that price discovery is dead, that the large indexes are comprised of the “most liquid stocks on the planet,” and that index investors are primarily long-term investors.<sup>346</sup> Further studies should be undertaken on the impact that HF trading has on efficient price discovery.<sup>347</sup> If the hypothesis of asset price distortion from index fund demand proves empirically sound, then one wonders whether any measures implemented to curb the proliferation of index and passive products are defensible. Paternalism in new investment products is controversial, yet licensing regimes analogous to the regulation of new drugs have been advanced by Professors Saule Omarova,<sup>348</sup> Eric Posner and Glenn Weyl,<sup>349</sup> Robert Litan,<sup>350</sup> and

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344. Mohit Oberoi, *A Market Crash Due to ETFs? Michael Burry Weighs in*, MKT. REALIST (Sept. 5, 2019), <https://marketrealist.com/2019/09/market-crash-due-to-etfs-burry-weighs-in/>.

345. See Fred Imbert, *Passive Investing Boom Could Be Causing a Market Bubble, But Not in the Stocks You Would Expect*, CNBC (last updated July 29, 2019, 10:13 AM), <https://www.cnbc.com/2019/07/27/passive-investing-boom-could-be-causing-a-market-bubble-but-not-in-the-stocks-you-would-expect.html>.

346. See Allan Roth, *The Big Short' Whiffs on Indexing*, ETF.COM (Sept. 5, 2019), <https://www.etf.com/sections/index-investor-corner/big-short-whiffs-indexing?nopaging=1>.

347. See Gaia Balp & Giovanni Strampelli, *Preserving Capital Markets Efficiency in the High Frequency Trading Era*, 18 U. ILL. J.L. TECH. & POL'Y 349, 404 (2018).

348. See Saule T. Omarova, *License to Deal: Mandatory Approval of Complex Financial Products*, 90 WASH. U. L. REV. 63, 140 (2012) (suggesting a financial product-

Heather Hughes.<sup>351</sup> This is particularly relevant in light of the ongoing ETF fee-wars, as issuers move towards zero-fee structures to capture market share.<sup>352</sup>

Additionally, it is worthwhile to consider how to increase the informational and operational efficiency of the ETF ecosystem. Serious consideration should be given to regulatory simplification for ETFs, such as the proposal by Professors Morley & Hu, with special emphasis on a clear naming convention (to distinguish ETFs from other ETPs), more effective disclosure around potential arbitrage breakdowns (to avoid liquidity illusions), and trading price friction (including bid-ask spreads).<sup>353</sup> Further, due to potential for crowding in passive investments to lead to a bottleneck in a sell-off, continued investigation is also needed on strategies to reduce herding potential in financial market products, such as exploring separating equilibria, and heterogeneous rules or regulatory relaxations.<sup>354</sup> As Michael Burry recently noted, “the theater keeps getting more crowded, but the exit door is the same as it always was.”<sup>355</sup>

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licensing framework that would “place the burden of proving social and economic utility of complex financial instruments on the intermediaries that structure and market them.”)

349. See Eric A. Posner & Glen E. Weyl, *A Proposal for Limiting Speculation on Derivatives: An FDA for Financial Innovation* 12–13 (Univ. of Chi. Inst. for Law & Econ., Working Paper No. 594, 2012), <https://ssrn.com/abstract=1995077> (advocating for a financial market product *ex ante* licensing regime similar to the U.S. Food & Drug Administration and for a more complex insurable interest rule where new products are tested on whether they will be used for speculation or hedging).

350. See ROBERT E. LITAN, BROOKINGS INST., IN DEFENSE OF MUCH, BUT NOT ALL, FINANCIAL INNOVATION 4(2010), [https://www.brookings.edu/wp-content/uploads/2016/06/0217\\_financial\\_innovation\\_litan.pdf](https://www.brookings.edu/wp-content/uploads/2016/06/0217_financial_innovation_litan.pdf) (“If policymakers take a skeptical view of innovation at outset—for example, by making innovators jump through hoops before being allowed to introduce them to the marketplace—then that will inevitably slow innovation. Such skepticism may be warranted where the downside consequences or side-effects may be severe, the best example being the sale of most drugs, which are subject to intensive scrutiny before they can be sold.”).

351. See Heather Hughes, *Financial Product Complexity, Moral Hazard, and the Private Law*, 20 STAN. J.L. BUS. & FIN. 179, 182 (2015) (“Since the 2008 financial crisis, scholars and policymakers have articulated strategies for regulating complexity . . . contending that the law should not permit financial products that are so novel or ‘excessively’ complex as to be unrecognizable to market actors. In addition, the recently created U.S. Consumer Financial Protection Bureau regulates financial products for public safety and fitness for consumers: as analogous to goods.”).

352. Eric Platt, *Zero-Fee and Rebate Deals Throw Down Gauntlet on ETF Charges*, FIN. TIMES (July 28, 2019), <https://www.ft.com/content/cc79a080-9117-11e9-8ff4-699df1c62544?shareType=nongift>.

353. See Hu & Morley, *supra* note 86, at 845. Related to this point, exchange pricing models are ripe for review.

354. See Ayres & Mitts, *supra* note 39, at 90.

355. Yun Li, *Michael Burry of ‘The Big Short’ Says He Has Found the Next Market Bubble*, CNBC (last updated Sept. 5, 2019, 5:56 PM), <https://www.cnbc.com/2019/09/04/the-big-shorts-michael-burry-says-he-has-found-the-next-market-bubble.html>.

**THE POLITICAL QUESTION DOCTRINE – AN  
INAPPROPRIATE ROADBLOCK TO THE  
LIMITATION ON BENEFITS SAFETY VALVE**

*Philip G. Cohen\**

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## ABSTRACT

Tax treaties serve several purposes, including “the elimination of impediments to international commerce resulting from the double taxation of international transactions” by, *inter alia*, the reduction or elimination of dividend withholding taxes.<sup>1</sup> *Starr International Company, Inc. v. United States* concerns an attempt by a Swiss domiciliary to pay lower United States withholding taxes pursuant to the then applicable tax treaty between the United States and Switzerland.<sup>2</sup> The focus of this Article is narrow but important. It addresses significant policy questions regarding the scope of the political question doctrine with respect to certain tax matters. Specifically, this Article will analyze whether the Circuit Court of Appeals for the District of Columbia was correct in rejecting the Government’s position that a taxpayer’s refund suit must be dismissed as a nonjusticiable political question. The court rejected the Government’s position because it involved the U.S. competent authority’s decision to deny it reduced dividend withholding tax under Article 22(6) of the U.S.–Switzerland Tax Treaty, the Limitation on Benefits’ “safety valve.”<sup>3</sup>

The Court of Appeals correctly decided in *Starr International* that *Starr International*’s refund lawsuit should not have been dismissed on grounds that it presented a nonjusticiable political question. *Starr International* asserted that “the political question doctrine is reserved for cases that implicate sensitive policy judgments by a coordinate branch, not for ordinary cases of treaty interpretation.”<sup>4</sup> The court determined that this assertion was proper.<sup>5</sup> The court applied the standard established by *Zivotofsky v. Clinton*: the political question doctrine applies in cases where “there is ‘a lack of judicially discoverable and manageable standards for resolving’ the question before the court,” and cases that entail “significant foreign policy implications.”<sup>6</sup> Although

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1. *Johansson v. United States*, 336 F. 2d 809, 813 (5th Cir. 1964). Professor Reuven S. Avi-Yonah, however, has opined that “the main purpose of tax treaties is not to prevent double taxation, which is generally prevented by unilateral exemption or credit, but to implement the benefits principle by shifting the tax on passive income from the source to the resident country, while allowing the source country to tax active income if it is attributable to a PE [permanent establishment] within it.” REUVEN S. AVI-YONAH, *ADVANCED INTRODUCTION TO INTERNATIONAL TAXATION* 51 (2d ed. 2019).

2. 910 F.3d 527, 529 (D.C. Cir. 2018).

3. *Id.* at 530.

4. Reply Brief for Appellant at 25, *Starr Int’l Co. v. United States*, 910 F.3d 527 (D.C. Cir. 2018) (No. 17-5238).

5. *Starr Int’l*, 910 F.3d at 533–34.

6. *Zivotofsky v. Clinton*, 566 U.S. 189, 197, 214 (2012).



additional criteria for applying the political question doctrine are set forth in *Baker v. Carr*, none are germane. While there is certainly a role in our judicial system for the political question doctrine, *Starr International* was a clearly inappropriate venue. The interests of tax policy would have been better served if the Government had not attempted to impose an inappropriate roadblock to the Limitation on Benefits' safety valve.

## I. INTRODUCTION

Tax treaties serve several purposes, including “the elimination of impediments to international commerce resulting from the double taxation of international transactions,”<sup>7</sup> by, *inter alia*, the reduction of or elimination of dividend withholding taxes.<sup>8</sup> *Starr International Company, Inc. v. United States* concerns an attempt by a Swiss-domiciled company, Starr International, to “avail itself of a bilateral tax treaty . . . [in order] to reduce its tax rate on U.S.-source dividend income.”<sup>9</sup> The focus of this Article is narrow but important. It addresses significant policy questions regarding the scope of the political question doctrine as applied to certain tax matters. Specifically, this Article explores whether the Circuit Court of Appeals for the District of Columbia was correct in rejecting the Government’s position that Starr International’s refund suit must be dismissed as a nonjusticiable political question. Starr International’s suit primarily involved the U.S. competent authority’s decision to deny dividend withholding tax under Article 22(6) of the U.S.–Swiss Tax Treaty (Treaty).

“The United States has entered into bilateral tax treaties for over three-quarters of a century . . . .”<sup>10</sup> These treaties “overlay the domestic international tax rules of the United States, which consist of two regimes: one governing the international activities of United States persons abroad and one governing the activities of foreign persons in the United States.”<sup>11</sup> The receipt of U.S.

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7. *Johansson v. United States*, 336 F.2d 809, 813 (5th Cir. 1964).

8. *Starr Int’l*, 910 F.3d at 529.

9. *Id.* A new protocol with Switzerland was ratified by the United States Senate on July 17, 2019. See, e.g., Jad Chamseddine, *Senate Finishes Tax Protocols, Sets Sights on Treaties Next*, TAXNOTES (July 18, 2019), <https://www.taxnotes.com/tax-notes-today-federal/treaties/senate-finishes-tax-protocols-sets-sights-treaties-next/2019/07/18/29r4h>. One important feature of the new protocol is mandatory binding arbitration of unresolved competent authority cases.

10. Rebecca M. Kysar, *On the Constitutionality of Tax Treaties*, 38 YALE J. INT’L L. 1, 21 (2013) (footnote omitted).

11. *Id.*

source dividends by Starr International falls within the latter regime. As to the relationship of tax treaties to federal statutes, such as the Internal Revenue Code, Article VI, Section 1, Clause 2 of the U.S. Constitution provides: “Laws of the United States which shall be made in Pursuance thereof; and all Treaties made, or which shall be made, under the Authority of the United States, shall be the supreme Law of the Land.”<sup>12</sup> Professors Boris I. Bittker and Lawrence Lokken comment that “[t]he Supreme Court has construed this provision to put statutes and treaties on a common footing.”<sup>13</sup> They further point out that “courts . . . try to harmonize treaties and statutes,”<sup>14</sup> but if they cannot be reconciled, “the conflict is generally resolved by applying an ancient common law rule, originally formulated for conflicts between statutes, that the one adopted last controls.”<sup>15</sup> This “last in time” methodology has been subject to criticism.<sup>16</sup> To be clear, there is no issue in *Starr International* as to the Treaty’s override of the statutory dividend withholding tax if the Treaty’s Limitations on Benefits provision, discussed below, is inapplicable.<sup>17</sup>

For many years, the United States has required any tax treaty it enters into to include a provision denying benefits “where [these benefits] are likely to flow primarily to residents of third countries.”<sup>18</sup> This objective, aimed at preventing what is commonly referred to as “treaty shopping,” is addressed in the Treaty in Article 22 Limitations on Benefits.<sup>19</sup> The most recent U.S. Model Income Tax Convention (Model Tax Treaty) and its recent predecessors also have similar provisions.<sup>20</sup> According to the

12. U.S. CONST. art. VI, § 1, cl. 2.

13. BORIS I. BITTKER & LAWRENCE LOKKEN, FEDERAL TAXATION OF INCOME, ESTATES AND GIFTS ¶ 65.4.2 (3d ed. 2018) [hereinafter BITTKER & LOKKEN].

14. *Id.* (footnote omitted).

15. *Id.* (footnote omitted).

16. *See, e.g.*, Anthony C. Infanti, *Curtailling Tax Treaty Overrides: A Call to Action*, 62 U. PITT. L. REV. 677, 709–13 (2001) (making a persuasive argument “that a contracting state may not unilaterally alter its treaty obligations”).

17. *See* I.R.C. § 881(a) (2010); *infra* Section II.A.

18. BITTKER & LOKKEN, *supra* note 13, at ¶ 67.3.3 (footnote omitted).

19. Convention Between the United States of America and the Swiss Confederation for the Avoidance of Double Taxation with Respect to Taxes on Income, Switz.–U.S., art. XXII, Oct. 2, 1996, S. Treaty Doc. No. 105-8, 1996 WL 903835 [hereinafter 1996 U.S.–Swiss Convention].

20. The most recent U.S. Model Income Tax Convention dated February 17, 2016 and titled, “Convention Between the Government of the United States of America and the Government \_\_\_\_\_ for the Avoidance of Double Taxation and the Prevention of Tax Evasion with Respect to Taxes on Income” (2016 U.S. Model Tax Treaty) has made significant changes generally, further tightening the scope of Article 22. *See, e.g.*, J. Ross Macdonald, “Time Present and Time Past”: U.S. Anti-Treaty Shopping History, Policy and Rules (Or,

Treaty's legislative history, Article 22 is intended "to prevent the inappropriate use of the treaty by third-country residents."<sup>21</sup> Since Starr International could not pass the objective numeric tests in Article 22 for meriting Treaty benefits,<sup>22</sup> in order to obtain the reduced dividend withholding rates generally available under Article 10 of the Treaty,<sup>23</sup> the company required discretionary relief in the form of U.S. "[c]ompetent [a]uthority approval" under Article 22(6).<sup>24</sup> The Court of Appeals noted that "[a] Swiss taxpayer will be denied relief under Article 22(6) if the U.S. competent authority determines that obtaining benefits under the Treaty was one of Starr International's 'principal purposes' in establishing itself in Switzerland."<sup>25</sup> Article 22(6) of the Treaty, and its equivalent in other tax treaties, has been referred to as the "safety valve test."<sup>26</sup> It gives the applicable competent authority the ability to provide discretionary relief to a taxpayer after consultation with its treaty counterpart where the taxpayer failed

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"Well, Stanley, That's Another Nice Mess You've Gotten Us Into."), 70 TAX LAW. 5 (2016); James J. Tobin, *The New U.S. Model Treaty Is Out!*, 45 TAX MGMT. INT'L J. 298 (2016); Lee A. Sheppard, *News Analysis: Why the New U.S. Model Treaty?*, 82 TAX NOTES INT'L 727 (2016).

21. S. EXEC. REP. NO. 105-10, at 3 (1997).

22. The government summarized some of the key mechanical tests in Article 22 of the Treaty as follows: "The treaty's limitation on benefits provisions allow a Swiss corporation that derives income from the United States to obtain benefits if, *inter alia*, (i) it does so in connection with the 'active conduct of a trade or business in Switzerland (*id.* art. 22(1)(c)); (ii) it is publicly traded on a recognized exchange, or is owned by a company traded on such an exchange (*id.* art. 22(1)(e)); or (iii) in the case of certain treaty benefits, the ultimate beneficial owners of more than 30% of the corporation's shares would qualify for benefits under Article 22, more than 70% of such owners would qualify for benefits or live in certain countries, and less than half of a corporation's deductible expenses were paid or payable to persons not eligible for treaty benefits (*id.* art. 22(3)(a))." Brief for Appellees at 3-4, *Starr Int'l Co. v. United States*, 910 F.3d 527 (D.C. Cir. 2018) (No. 17-5238).

23. Article 10(2) of the U.S.-Swiss. Tax Treaty provides in pertinent part that "if the beneficial owner of the dividends is a resident of the other Contracting State, the tax so charged shall not exceed (a) 5 percent of the gross amount of the dividends if the beneficial owner is a company which holds directly at least 10 percent of the voting stock of the company paying the dividends; (b) 15 percent of the gross amount of the dividends in all other cases." 1996 U.S.-Swiss Convention, *supra* note 19, at art. X, ¶ 2. Starr International "claimed that it was entitled to a dividend tax rate of 5% for part of 2007 and of 15% for the remainder of 2007." Brief for Appellees at 10, *Starr Int'l*, 910 F.3d 527 (No. 17-5238).

24. 1996 U.S.-Swiss Convention, *supra* note 19, at art. XXII, ¶ 6 ("A person that is not entitled to the benefits of this Convention pursuant to the provisions of the preceding paragraphs may, nevertheless, be granted the benefits of the Convention if the competent authority of the State in which the income arises so determines after consultation with the competent authority of the other Contracting State.").

25. *Starr Int'l*, 910 F.3d at 529 (citing DEPT OF THE TREASURY, TECHNICAL EXPLANATION OF THE CONVENTION BETWEEN THE UNITED STATES OF AMERICA AND THE SWISS CONFEDERATION FOR THE AVOIDANCE OF DOUBLE TAXATION WITH RESPECT TO TAXES ON INCOME 72 [hereinafter TREATY TECHNICAL EXPLANATION]).

26. Macdonald, *supra* note 20, at 328-32, 334-35.

to meet the objective Limitation on Benefits tests in Article 22 but “whose residence in the other State can be explained by factors other than a purpose to derive treaty benefits.”<sup>27</sup> This latter objective is referred to as the principal purpose test.<sup>28</sup> Article 22(6) of the Model Tax Treaty contains a revised version of this provision.<sup>29</sup>

After the Service denied Starr International’s request for relief under Article 22(6), Starr International brought a refund claim of approximately \$38 million in the District Court for the District of Columbia, asserting that its move to Switzerland was not principally to avail itself of treaty benefits.<sup>30</sup> The Government first argued that Starr International’s refund claim was unreviewable “because the determination was committed to agency discretion by law.”<sup>31</sup> Initially, the district court rejected the Government’s assertion in *Starr I*.<sup>32</sup> After the Government filed a motion requesting the court reconsider its determination, the court held in *Starr II* that it could not hear Starr International’s refund suit on the ground that it raised “a nonjusticiable political

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27. *Starr Int’l*, 910 F.3d at 531 (quoting TREATY TECHNICAL EXPLANATION, supra note 25, at 60).

28. *Id.* (indicating that relief under Article 22(6) depends on whether Starr International’s principle purpose of doing business in that country was to obtain benefits under the Convention. If a taxpayer’s principle purpose of business was to obtain these benefits, relief under Article 22(6) ordinarily will not be granted).

29. DEPT OF THE TREASURY, UNITED STATES MODEL INCOME TAX CONVENTION, ART. 22, ¶ 6, (2016), <https://www.treasury.gov/resource-center/tax-policy/treaties/Pages/treaties.aspx> (“If a resident of a Contracting State is neither a qualified person pursuant to the provisions of paragraph 2 of this Article, nor entitled to benefits under paragraph 3, 4 or 5 of this Article, the competent authority of the other Contracting State may, nevertheless, grant the benefits of this Convention, or benefits with respect to a specific item of income, taking into account the object and purpose of this Convention, but only if such resident demonstrates to the satisfaction of such competent authority a substantial nontax nexus to its Contracting State of residence and that neither its establishment, acquisition or maintenance, nor the conduct of its operations had as one of its principal purposes the obtaining of benefits under this Convention. The competent authority of the Contracting State to which the request has been made shall consult with the competent authority of the other Contracting State before either granting or denying a request made under this paragraph by a resident of that other Contracting State.”).

30. Brief for Appellant at 4, *Starr Int’l*, 910 F.3d 527 (No. 17-5238) (“Before the move, Starr resided in Ireland and qualified for the same 15% withholding tax rate *automatically* under the U.S.-Irish Treaty.”) (emphasis in original); *id.* at 5 (Starr International’s relocation “was prompted by unforeseen litigation risks and poor regulatory environment for charities (like Starr’s charitable owner) in Ireland.”); *id.* at 17 (“[I]ts economic value would reside almost entirely within the contracting states, specifically within Switzerland, and would not be routed to a non-signatory country.”).

31. Brief for Appellant at 19, *Starr Int’l*, 910 F.3d 527 (No. 17-5238).

32. *Starr Int’l Co. v. United States (Starr I)*, 139 F. Supp. 3d 214, 231 (D.D.C. 2015).

question.”<sup>33</sup> Starr International “then amended its complaint to bring a claim under the Administrative Procedure Act (APA), challenging the IRS’s denial of treaty benefits as arbitrary and capricious.”<sup>34</sup> The district court granted the Government’s motion for summary judgment on this latter claim in *Starr III*, the last chapter out of the District Court for the District of Columbia.<sup>35</sup>

When the decision was appealed to the D.C. Circuit Court of Appeals, the circuit court properly decided against the Government on the issue of whether Starr International’s refund suit should be dismissed because it raised a nonjusticiable political question.<sup>36</sup> Given the fact that Article 22(6) relief is “discretionary” on the part of the U.S. competent authority,<sup>37</sup> Starr International’s position on the merits, i.e., that the IRS “misinterpreted federal law in denying the company a refund,”<sup>38</sup> appears to be difficult to support. Even if this was not the case, as elaborated upon below, the Government’s attempt to dismiss Starr International’s refund lawsuit based on the political question doctrine was an inappropriate roadblock to the Limitation on Benefits safety valve.

## II. STARR INTERNATIONAL LITIGATION & THE SAFETY VALVE EXCEPTION TO LIMITATION ON BENEFITS PROVISION

### A. Background & Starr I

Starr International Company, Inc. was “once the largest shareholder of American International Group (AIG).”<sup>39</sup> The District Court for the District of Columbia first observed in *Starr*

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33. *Starr Int’l Co. v. United States (Starr II)*, No. 14-cv-01593 (CRC), 2016 WL 410989, at \*2 (D.D.C. Feb. 2, 2016).

34. *Starr Int’l*, 910 F.3d at 529–30.

35. *Starr Int’l Co. v. United States (Starr III)*, 275 F. Supp. 3d 228, 251 (D.D.C. 2017).

36. *Starr Int’l*, 910 F.3d at 535.

37. The U.S. Treasury Department’s Technical Explanation of Article 22(6) provides in relevant part, “Paragraph 6 provides that a resident of one of the Contracting States that is not otherwise entitled to the benefits of the Convention may be granted benefits under the Convention by the competent authority of the other Contracting State. This *discretionary* provision is included in recognition of the fact that, with the increasing scope and diversity of international economic relations, there may be cases where significant participation by third country residents in an enterprise of a Contracting State is warranted by sound business practice or long-standing business structures and does not necessarily indicate a motive of attempting to derive unintended Convention benefits.” TREATY TECHNICAL EXPLANATION, *supra* note 25, at 72 (emphasis added).

38. *Starr Int’l*, 910 F.3d at 534.

39. *Id.* at 531.

I that the “dispute traces its roots to the heralded falling out between AIG and its then-CEO Maurice R. Greenberg.”<sup>40</sup>

The legendary Maurice R. “Hank” Greenberg had “built [AIG] into a global insurance powerhouse and shaped an entire industry during nearly 40 years at the company’s helm . . . [but was forced to] step[] down as chief executive after a series of run-ins with regulators . . . .”<sup>41</sup> Further, he was subsequently forced to resign as Chairman.<sup>42</sup> Hank Greenberg has been described as the “prime mover” at both AIG and Starr International for many years.<sup>43</sup>

Starr International “began as a thriving international insurance business” founded by its namesake Cornelius Vander Starr.<sup>44</sup> From its Panama headquarters, the company primarily focused on attracting business for U.S insurance companies by owning and managing agencies abroad beginning in 1943.<sup>45</sup> During the 1970s, Starr International “merged most of its operating entities into AIG and became AIG’s largest shareholder.”<sup>46</sup>

Although Starr International is a for-profit company, it is unique in that it is owned by a charitable organization.<sup>47</sup> During the years at issue in this case, Starr International’s voting stock “ha[d] little direct economic value” and was held “by individuals with close ties to” Greenberg.<sup>48</sup> Greenberg himself owned some of this voting stock.<sup>49</sup> In addition to being CEO and chairman of AIG, Greenberg was also chairman of Starr International.<sup>50</sup> After Greenberg stepped down as CEO of AIG, “[Starr International]

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40. *Starr Int’l Co. v. United States (Starr I)*, 139 F. Supp. 3d 214, 219 (D.D.C. 2015) (citation omitted).

41. Gretchen Morgenson, *Chief Is Leaving Insurance Giant; Inquiries Mount*, N.Y. TIMES (Mar. 15, 2005), <https://www.nytimes.com/2005/03/15/business/chief-is-leaving-insurance-giant-inquiries-mount.html>; see also *Starr I*, 139 F. Supp. at 220 (indicating that Greenberg was under investigation by New York State’s Attorney General).

42. *Starr Int’l Co. v. Am. Int’l Grp.*, 648 F. Supp. 2d 546, 548 (S.D.N.Y. 2009).

43. *Am. Int’l*, 648 F. Supp. 2d at 548.

44. Brief for Appellant at 9, *Starr Int’l*, 910 F. 3d 527 (No. 17-5238).

45. *Id.*

46. *Id.* at 9–10.

47. *Starr Int’l Co. v. United States (Starr III)*, 275 F. Supp. 3d 228, 249 (D.D.C. 2017). The government explained that during the time at issue “Starr’s non-voting stock has been held by Swiss AG, a ‘Swiss charitable company’ owned in turn by Starr International Foundation, which is now a ‘Swiss charitable foundation.’” Brief for Appellees at 9, *Starr Int’l*, 910 F. 3d 527 (No. 17-5238). The government referred to these entities as “putatively charitable organizations . . . .” *Id.* at 6. There is also a New York foundation in the structure. *Starr III*, 275 F. Supp. 3d at 234.

48. Final Brief for Appellees at 5–6, *Starr Int’l*, 910 F. 3d 527 (No. 17-5238).

49. *Starr Int’l Co. v. Am. Int’l Grp.*, 648 F. Supp. 2d 546, 554 (S.D.N.Y. 2009).

50. *Id.* at 551.

remained under Greenberg's domination."<sup>51</sup> The non-voting common stock, "with full residual rights to . . . [Starr International's assets], . . . [was] issued to a charitable trust[] whose ultimate beneficiary was a New York foundation."<sup>52</sup> Towards the end of 2007, the timeframe at issue, Starr International's primary assets were shares of AIG valued at around \$16.7 billion.<sup>53</sup>

Starr International's initial objectives were not focused solely or even primarily on "build[ing] value for eventual long range use and distribution to the common stock owners for charitable purposes."<sup>54</sup> According to the district court, "[t]he Charitable Trust was set up as [a] long-term arrangement with multiple goals."<sup>55</sup> The court indicated that "the factors motivating the vesting of [the] corporation's economic value in a charitable trust were not wholly charitable in nature;" rather, Starr International had "intentions to protect AIG from unwarranted hostile bids for change in control and to permit [Starr], as AIG's largest shareholder, to make incentive compensation grants . . . to AIG employees."<sup>56</sup>

After Greenberg's departure from AIG, Starr International "ceased funding AIG's executive-compensation plan."<sup>57</sup> Starr International's charitable mission was allegedly its primary *raison d'être* after the AIG and Greenberg split in 2005.<sup>58</sup> At least one observer, besides the Government, expressed doubt as to the company's charitable mission's primacy and indicated that "Starr International actually paid out very little to its charitable shareholder."<sup>59</sup>

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51. *Id.* at 548.

52. *Starr III*, 275 F. Supp. 3d at 234.

53. Final Brief for Appellees at 6, *Starr Int'l*, 910 F. 3d 527 (No. 17-5238).

54. *Starr III*, 275 F. Supp. 3d at 234 (quoting *Am. Int'l*, 648 F. Supp. 2d at 558).

55. *Id.* at 235.

56. *Id.* at 234–35.

57. *Starr Int'l Co. v. United States (Starr I)*, 139 F. Supp. 3d 214, 220 (D.C. Cir. 2015).

58. Macdonald, *supra* note 20, at 338.

59. *Id.* Macdonald also wrote that a Starr International representative "indicated that Starr International was a for-profit company that was interested in using its funds to rebuild an international insurance business and did not hide the fact that this was its primary intention." *Id.* at n.871. ("In answer to our question as to why [Starr International] paid out such small amounts to charity in comparison to the enormous sums of dividends it received from AIG, the Representatives stated that it was never [Starr International's] intention nor purpose to start making large charitable contributions right away, but rather, they had planned to give bigger and bigger contributions as time went by with the ultimate value given to charity upon the end of the "Trust Term."").

Starr International became a Swiss domiciliary in 2006.<sup>60</sup> In 2004, the company decided to move its headquarters to Ireland from Bermuda “to take advantage of the 1997 U.S.-Ireland tax treaty, which automatically reduced Starr’s withholding rate on AIG dividends by half.”<sup>61</sup> The district court in *Starr I* appeared to doubt the company’s reason for relocating operations to Switzerland, stating the reason was “allegedly to protect its assets from an AIG lawsuit.”<sup>62</sup> Starr International also indicated that its departure from Ireland was predicated in part on Irish law restrictions limiting its charitable trust’s “ability to make donations to non-Irish charities.”<sup>63</sup>

Absent relief under the Treaty, Starr International was subject to the statutory thirty percent withholding tax on the AIG dividends imposed on U.S.-source dividends paid to foreign corporations.<sup>64</sup> In 2007, Starr International petitioned the U.S. competent authority for discretionary benefits under Article 22(6) of the Treaty after failing to meet the mechanical test of the Article.<sup>65</sup> After failing to receive a response to this request “but wishing to reserve its right to a refund,”<sup>66</sup> Starr International “sent a 2007 tax-return form to the IRS Service Center in Ogden, Utah, contending that it had overpaid \$38,181,246 in taxes—half of its withholdings on AIG dividends . . . [and] wrote ‘Protective Refund Claim’ on the form header.”<sup>67</sup> In October 2010, the U.S. competent authority rejected Starr International’s request.<sup>68</sup> After the rejection, Starr International brought a tax refund suit in the District Court for the District of Columbia in September 2014 for the alleged overpayment of withholding taxes for 2007.<sup>69</sup>

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60. See *Starr Int’l Co. v. United States*, 910 F.3d 527, 531 (D.C. Cir. 2018).

61. *Starr I*, 139 F. Supp. 3d at 220. This reference was to a 15% rate. *But see* Brief for Appellant at 11, *Starr Int’l*, 910 F. 3d 527 (No. 17-5238) (arguing that Starr International “qualified for a 5% withholding rate [under the U.S.-Ireland Tax Treaty] during years when it owned more than 10% of AIG’s stock”) (alteration in original).

62. *Starr I*, 139 F. Supp. 3d at 220; *see also* Brief for Appellant at 12, *Starr Int’l*, 910 F. 3d 527 (No. 17-5238) (discussing how after Greenberg stepped down as CEO of AIG “[a] rift quickly grew between the two organizations [i.e., AIG and Starr International], culminating in a lawsuit brought by Starr against AIG seeking the return of artwork and other tangible property belonging to Starr that AIG refused to relinquish . . . . Later in 2005, AIG filed a counterclaim seeking to obtain Starr’s primary asset, the AIG stock.”) (alteration in original).

63. Brief for Appellant at 13, *Starr Int’l*, 910 F. 3d 527 (No. 17-5238).

64. I.R.C. § 881(a).

65. See *Starr I*, 139 F. Supp. 3d at 220.

66. *Id.*

67. *Id.* at 220–21.

68. *Id.* at 221.

69. *Id.* The District Court for the District of Columbia did, however, point out Starr International did receive a refund for 2008 on the same Article 22(6) allegation. *Id.*



In its suit, Starr International asserted that the Service had erroneously denied benefits under the Treaty.<sup>70</sup> Starr International asserted that the Service:

[A]bused its discretion because (1) Starr was not treaty shopping when it relocated to Switzerland, (2) the IRS failed to consult with the Swiss [c]ompetent [a]uthority before denying Starr's request, and (3) the IRS had no legal basis for issuing Starr a 2008 refund while denying its 2007 request based on the same material facts.<sup>71</sup>

The Government contended “that the U.S. [c]ompetent [a]uthority's decision is committed to agency discretion by law and, alternatively, that the Court lacks jurisdiction under the political-question doctrine” to review the U.S. competent authority's decision.<sup>72</sup> In *Starr I*, the district court initially determined “that the discretionary provision of . . . [Article 22(6) of the Treaty] is not categorically nonjusticiable.”<sup>73</sup> Furthermore, the Government had “not presented clear and convincing evidence that the discretionary provision was intended to preclude judicial review.”<sup>74</sup> The *Starr I* court indicated that its action would not “impinge on the Executive's allegedly exclusive authority to ‘formulate and implement foreign policy.’”<sup>75</sup> Nor would “concluding that the IRS abused its discretion here . . . unduly disrespect a coordinate branch of government or embarrass the federal government as a whole.”<sup>76</sup> The *Starr I* court thus denied the Service's motion to dismiss Starr International's claim on political question grounds.<sup>77</sup> This writer submits that the court in *Starr I* correctly decided the case. Unfortunately, however, this would not be the district court's last holding on this matter.

One final point made by the *Starr I* court merits the reader's attention. As to whether judicially manageable standards for review exist, the district court observed in *Starr I*:

[T]he Technical Explanation [to the Treaty with respect to Article 22(6)] provides meaningful standards—namely,

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70. *Id.*

71. *Id.*

72. *Id.* (footnote omitted). The Service also asserted in a counterclaim not before this Court, to recover the refund for 2008. *Id.* at 231 n.3.

73. *Id.* at 226.

74. *Id.* at 228.

75. *Id.* at 230.

76. *Id.* at 231.

77. *Id.* at 231. However, the court also dismissed Starr International's claim that “by failing to consult . . . the Swiss Competent authority” the Service violated their duty under the U.S.–Swiss Tax Treaty. *Id.*

whether an applicant's principal purpose was treaty shopping—that enable a court to determine whether the IRS abused its discretion in denying treaty benefits. Because this inquiry is not directionless, denials of tax benefits under the discretionary provision are not committed to the IRS's unreviewable discretion.<sup>78</sup>

Despite reversing its stance on the applicability of the political question doctrine, the district court never wavered in its opinion that judicially manageable standards existed here.

### B. *Starr II*

The saga continued with *Starr II*, beginning with the Government's motion to reconsider the decision in *Starr I*. The Government argued that “the Court misapprehended a key aspect of the treaty provision at issue: the requirement that the IRS ‘consult’ with its Swiss counterparts prior to any final decision to grant treaty benefits.”<sup>79</sup> The District Court for the District of Columbia observed in *Starr II* that the Government was arguing that “separation-of-powers principles prevent the Court from forcing the IRS to consult with the Swiss authorities or dictating the outcome of any consultation because doing so would impinge on the Executive's authority to conduct foreign relations.”<sup>80</sup> As such, according to the Government, the Court lacked the power to grant *Starr International* its refund.<sup>81</sup>

The district court was persuaded by the Government's motion and agreed to revise “certain aspects” of its prior ruling.<sup>82</sup> It did not, however, reverse its decision in *Starr I* completely.<sup>83</sup> As noted above, the court reaffirmed that “a manageable standard for assessing whether *Starr* met certain criteria required to obtain treaty benefits [existed and therefore the] . . . IRS's determination that *Starr* did not meet the applicable criteria is subject to judicial review.”<sup>84</sup> Furthermore, the district court “st[ood] by its ruling that interpreting the terms of the treaty in a manner necessary to determine whether *Starr* met the applicable criteria would not offend the political-question doctrine.”<sup>85</sup> The court also was “not

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78. *Id.* at 229.

79. *Starr Int'l Co. v. United States (Starr II)*, No. 14-cv-01593 (CRC), 2016 WL 410989, at \*2 (D.D.C. Feb. 2, 2016).

80. *Id.*

81. *Id.*

82. *Id.* at \*3.

83. *Id.*

84. *Id.*

85. *Id.*

particularly swayed by the government's argument—which it [viewed] as somewhat of a red herring—that the Court cannot force the IRS to consult with its Swiss counterparts.”<sup>86</sup> However, the court did note that consultation is only required under the Treaty Article 22(6) “before a decision to *grant* treaty benefits, whereas here the IRS *denied* benefits to Starr.”<sup>87</sup> Where the district court did agree with the Government was in the assertion “that the Court lacks the power to dictate the outcome of the consultation process [with its Swiss counterpart].”<sup>88</sup>

In its revised opinion, the district court stated that it now understood that “the treaty consultation process is a diplomatic exercise that can affect the ultimate outcome of the decision whether to award benefits, and the extent of those benefits, in numerous ways.”<sup>89</sup> Accordingly, “it would impinge upon the Executive's prerogative to engage in that process if the Court were to render consultation meaningless or dictate its outcome.”<sup>90</sup> “Ordering the IRS to issue Starr a specific monetary refund—prior to any consultation having taken place—” according to the district court in *Starr II* “would do precisely that.”<sup>91</sup> The court ultimately concluded that:

In light of [its] . . . inability and lack of competence to predetermine the outcome of any consultation between the IRS and its Swiss counterparts, and . . . that consultation is a prerequisite to awarding treaty benefits, . . . Starr may not pursue its claim for a tax refund or any other monetary relief.<sup>92</sup>

The district court somewhat strangely noted that “[g]iven the role of the consultation process, ‘it may very well be that the U.S. [c]ompetent [a]uthority . . . initially [comes] to a decision preliminarily to grant benefits but ultimately, after the consultation, decides to deny benefits.’”<sup>93</sup> Query why the Swiss counterpart would argue against a decision to effectively provide a dividend withholding reduction coming solely out of U.S.

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86. *Id.* at \*4.

87. *Id.* at \*3–4.

88. *Id.* at \*4.

89. *Id.*

90. *Id.* at \*4–5.

91. *Id.* at \*5.

92. *Id.* at \*10–11.

93. *Id.* at \*9–10.

government coffers.<sup>94</sup> The only explanation that logically comes to mind is that, through consultation, the Service learns additional information about Starr International that could negatively impact an initial decision to grant relief. However, this scenario is highly unlikely.

The *Starr II* court's analysis of interfering with the Treaty consultation process in general appears perplexing. The Service unilaterally denied Starr International relief under Article 22(6) of the Treaty, which did not require competent authority consultations for rejections but for grants. If the Service had in fact decided preliminarily to grant the benefit, the consultation would likely not have changed the result. Yet the court in *Starr II*, absent a claim of violation of the APA (discussed below), effectively indicated its hands were tied because "dictating the outcome of any consultation . . . would impinge on the Executive's authority to conduct foreign relations."<sup>95</sup> Somehow, the sensible reasoning expressed in *Starr I* became distorted in *Starr II*. The district court's difficulty with the consultation prerequisite conundrum is addressed further in Part III.

The district court believed that Starr International had a potential remedy by pursuing "a claim to set aside the IRS's decision to deny treaty benefits under the judicial-review provision of the [APA] . . ."<sup>96</sup> The court opined that relief under the APA "is not illusory."<sup>97</sup> That is, Starr International "'could bring a claim under [the APA] . . . seeking to set aside the U.S. [c]ompetent [a]uthority's determination' . . . as arbitrary, capricious or an abuse of discretion."<sup>98</sup> The court indicated that "if Starr 'prevailed on that claim, [it] would be entitled . . . to have the matter remanded to the U.S. [c]ompetent [a]uthority for further actions' consistent with the Court's opinion."<sup>99</sup> Under such circumstances, "the Court would fully expect [and the Service has so represented] . . . that the IRS would not decline to consult with the Swiss [counterpart] . . ."<sup>100</sup>

In accordance with its reasoning, the district court in *Starr II*, "allow[ed] Starr 21 days to amend its complaint to bring a claim

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94. Brief for Appellant at \*57, *Starr Int'l Co. v. United States*, 910 F. 3d 527 (D.C. Cir. 2018) (No. 17-5238) ("Indeed, it is difficult to imagine the Swiss government having any objection to a Swiss resident receiving treaty benefits impacting only its U.S. taxes.")

95. *Starr II*, 2016 WL 410989, at \*2.

96. *Id.* at \*5.

97. *Id.* at \*17.

98. *Id.* at \*14–15.

99. *Id.* at \*15.

100. *Id.* at \*17.

under the APA to seek to have the IRS's decision to deny it treaty benefits set aside."<sup>101</sup> Among other actions, the court also "grant[ed] in part the government's motion for reconsideration . . . ." <sup>102</sup>

### C. *Starr III*

The next chapter in this journey is *Starr III*.<sup>103</sup> Here, the District Court for the District of Columbia weighed in for the final time with an exceptionally thorough opinion. The focus of *Starr III* was Starr International's "challenges . . . [to] the IRS's denial of treaty benefits as arbitrary and capricious under the [APA]."<sup>104</sup> The company's primary argument was that the Treaty's "primary purpose test [in Article 22(6)] is designed to prevent the practice of 'treaty shopping' and that the IRS applied an erroneous definition of that term in concluding that the company's relocation to Switzerland was largely tax-driven."<sup>105</sup>

Starr International contended that "'treaty shopping' is a precise legal term, covering only those instances where an on-paper resident of a country *not* party to the relevant tax treaty uses an entity that *is* an on-paper resident of a treaty country in order to obtain treaty benefits."<sup>106</sup> The company asserted that "[b]ecause Starr and its subsidiaries were on-paper Swiss residents and the majority of its voting shareholders were U.S. citizens at the relevant time, . . . it could not have been 'treaty shopping' under this definition."<sup>107</sup> The court, however, rejected Starr's interpretation of treaty shopping *vis-a-vis* the Treaty, indicating that its position "cannot be squared with the text of the U.S.–Swiss treaty or its accompanying agency guidance."<sup>108</sup> The district court determined that these "authorities understand 'treaty shopping' as encompassing situations where an entity establishes itself in a treaty jurisdiction with a 'principal purpose' of obtaining treaty benefits."<sup>109</sup> The court concluded that the IRS "reasonably applied . . . [the principal purpose] standard in

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101. *Id.* at \*20.

102. *Id.* at \*19.

103. 275 F. Supp. 3d 228, 251 (D.D.C. 2017).

104. *Id.* at 231.

105. *Id.* at 232.

106. *Id.* (emphasis in original).

107. *Id.*

108. *Id.*

109. *Id.*

denying treaty benefits to Starr . . . [and as such] the Court decline[d] to set aside its [prior] determination.”<sup>110</sup>

The district court explained that the purpose of the Limitations on Benefits provision in Article 22 is to prevent treaty shopping abuse.<sup>111</sup> Article 22 is specifically “aim[ed] to deny benefits to those who establish ‘legal entities . . . in a Contracting State with a principal purpose to obtain [treaty] benefits.’”<sup>112</sup> Although determining a taxpayer’s principal purpose is difficult, Article 22 provides “a number of objective, mechanical tests meant to identify those treaty-country residents who are worthy recipients of treaty benefits.”<sup>113</sup> Article 22’s mechanical tests operate according to the Treaty’s Technical Explanation, so that satisfaction of any individual test establishes that an entity has a legitimate business purpose for their adopted structure or that this structure has “sufficiently strong nexus to the other Contracting State . . . .”<sup>114</sup> Later in its opinion, the district court characterized these tests as “objective and formalistic.”<sup>115</sup> These tests, the court explained, “are based on such factors as an entity’s non-profit status, its ownership structure, and the *on-paper* residency of its owners and controlling shareholders. Although the tests vary in complexity, implementing them requires little discretion.”<sup>116</sup>

Article 22(6) of the Treaty allows divergence from these criteria for those “entities with legitimate reasons for residing in a treaty nation [that] might nevertheless fail Article 22’s rigid mechanical tests.”<sup>117</sup> The Treaty’s Technical Explanation noted that “while an analysis under . . . [Article 22(6)], may well differ from . . . [the mechanical tests in Article 22,] its objective is the same: to identify investors whose residence in the other State can be explained by factors other than a purpose to derive treaty benefits.”<sup>118</sup>

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110. *Id.*

111. *Id.* at 233.

112. *Id.* (quoting TREATY TECHNICAL EXPLANATION, *supra* note 25, at 59).

113. *Id.* at 233.

114. *Id.* (quoting TREATY TECHNICAL EXPLANATION, *supra* note 25, at 59).

115. *Id.* at 243.

116. *Id.*

117. *Id.* at 233–34; *see* TREATY TECHNICAL EXPLANATION, *supra* note 25, at 72 (“A person that is not entitled to the benefits of this Convention pursuant to the provisions of the preceding paragraphs may, nevertheless, be granted the benefits of the Convention if the competent authority of the State in which the income arises so determines after consultation with the competent authority of the other Contracting State.”).

118. *Starr III*, 275 F. Supp. 3d at 234 (quoting TREATY TECHNICAL EXPLANATION, *supra* note 25, at 72).

In analyzing Starr International's motivation for being a Swiss resident, the district court determined that in its initial move from Bermuda to Ireland in 2004 there was "abundant evidence that the move . . . was tax-motivated."<sup>119</sup> That is, despite Starr International's assertion at a meeting with the U.S. competent authority that Bermuda had political problems,<sup>120</sup> a lack of skilled workers and professionals, and was "too small of a place for a \$20 billion charity,"<sup>121</sup> the court believed the real stimulus for the move was access to the U.S.–Irish Tax Treaty's U.S. dividend withholding tax benefit.<sup>122</sup>

As to the company's next move, i.e., from Ireland to Switzerland, the taxpayer alluded to a variety of motivations, including not only the fact that Starr International's "assets were not sufficiently insulated from litigation in Ireland,"<sup>123</sup> but also that the restrictions on its charitable donations such as "severe practical limitations on the amounts that could be distributed to donees outside of Ireland."<sup>124</sup> Starr International, however, in its application for discretionary relief provided for in Treaty Article 22(6), asserted that its ground for such dispensation "was primarily . . . that its move to Switzerland was motivated by charitable considerations . . . ."<sup>125</sup> In a chart, apparently produced in 2009 but allegedly representing its decision making process prior to relocating from Ireland, Starr International represented to the U.S. competent authority that among the locations it

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119. *Id.* at 235.

120. The term "competent authority" is defined as "the person that the treaty partners designate to administer the treaty's administrative provisions." David N. Bowen, *U.S. Income Tax Treaties — U.S. Competent Authority Functions and Procedures*, T.M. 6880-1st (BNA). The competent authority's functions include: (i) "applying tax treaty provisions by communicating, consulting, and negotiating agreements with treaty partners on the general application of such provisions"; (ii) "requesting and responding to requests for specific information, and otherwise exchanging information routinely and spontaneously, as appropriate"; (iii) "assisting in the collection of tax (to the extent allowed)"; and (iv) more importantly, "negotiating agreements with the other Contracting State concerning taxpayer claims under the applicable treaty provisions." *Id.* In Article 3(1)(f)(ii) of the 1996 U.S.–Swiss Convention "competent authority" is defined as "the Secretary of the Treasury or his delegate." 1996 U.S.–Swiss Convention, *supra* note 19. In its Brief for the Appellees, the Government noted that "[t]he Secretary of the Treasury's authority to act as competent authority has been delegated to the Commissioner of the IRS's Large Business and International Division, whose authority in turn has been delegated to, *inter alia*, the Deputy Commissioner for the same division." Brief for Appellees at 4 n.2, *Starr Int'l Co. v. United States*, 910 F. 3d 527 (D.C. Cir. 2018) (No. 17-5238).

121. *Starr III*, 275 F. Supp. 3d at 235.

122. *Id.*

123. *Id.* at 236.

124. *Id.* at 235.

125. *Id.* at 237.

considered as the best place to relocate its residence, Switzerland's positive factors were low local taxes, low litigation risk, and strong charity regulations "with its main potential weakness [being] the U.S. tax consequences which would be '[b]ad (absent 22(6)).'"<sup>126</sup>

Besides its supposedly benign purpose for the move, Starr International contended that it "was 'within the spirit of the objective criteria' of Article 22(2), which confers treaty benefits on certain non-profit organizations."<sup>127</sup> Starr International further argued in its request for Article 22(6) relief "that—given its Swiss residency, beneficial ownership by a Swiss non-profit, and majority-U.S. voting power—it was 'not aware of any policy reason' to deny it treaty benefits."<sup>128</sup> In eventually denying the Starr International's request several years after it was made, the Service explained "the [c]ompetent [a]uthority could not 'conclude that obtaining treaty benefits was not at least one of the principal purposes for moving Starr's management, and therefore its residency, to Switzerland.'"<sup>129</sup>

Its reasoning was based on four key grounds:

- [Starr]'s original incorporation in Panama and its management and control in Bermuda suggest the original corporate structure may have been developed with tax avoidance purposes in mind and/or with a purpose of avoiding the provision of information on [Starr]'s activities to the Internal Revenue Service;
- [Starr]'s re-location to Ireland and its movement of management out of Bermuda a relatively short time before the payment of dividends to [Starr] further suggests that [Starr] was seeking to avail itself of the treaty between the United States and Ireland to avoid U.S. tax on those contemplated dividends;
- The transitory nature of [Starr]'s location in Ireland, which may or may not have been intentionally transitory, and its subsequent movement to Switzerland further suggests its intention of organizing in a treaty jurisdiction to

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126. *Id.* at 236; *see also id.* at 248 (In a later reference to that chart, the court referred to the decision matrix as "suspect evidence." "It appears to have been created in 2009, years after the move to Switzerland, and in an effort to convince the Competent Authority that seeking treaty benefits was not a principal motive behind Starr's move.").

127. *Starr III*, 275 F. Supp. 3d at 237.

128. *Id.*

129. *Id.* at 238.



avail itself of a reduced rate of withholding on U.S. source dividends;

- [Starr] is largely controlled by U.S. individuals and such control is not in accord with recent development of U.S. policy on acceptable corporate ownership for [Limitation on Benefits] purposes.<sup>130</sup>

J. Ross Macdonald thought the underlying reasoning of the U.S. competent authority's decision was "that Starr International was a for-profit corporation and that while the vast preponderance of its economics appeared to be held for the benefit of a charity, in actuality, Starr International was not run principally to benefit the charity."<sup>131</sup> Macdonald believed that the Service viewed the charity "as a mere 'wrapper' to benefit Starr International."<sup>132</sup> In other words, he opined that "as a result of fairly minimal distributions to the charity (wherever located) over [a] historical time frame the U.S. competent authority did not see a sufficient connection between Starr International and the charity."<sup>133</sup>

The district court rejected Starr International's assertion that Treaty Article 22(6) relief should be accorded when a taxpayer is not treaty shopping, which it defined as situations "where an on-paper resident of a country *not* party to the relevant tax treaty uses an entity that *is* an on-paper resident of a treaty country in order to obtain treaty benefits . . ."<sup>134</sup> Its rationale was as follows: The Treaty's "mechanical tests [were] strikingly similar to Starr's proposed third-country resident test."<sup>135</sup> Nevertheless, the court pointed out no such standard was included in the Treaty even though it would have been "simple" to include it with the other objective criteria.<sup>136</sup> This "omission[, the district court indicated,] is very difficult to explain."<sup>137</sup>

The district court also characterized as "formalistic" Starr International's assertion "that its lack of on-paper ties to third countries, and the prevalence of its on-paper ties to Switzerland and the United States, are alone sufficient to entitle the company to treaty benefits."<sup>138</sup> This methodology of interpreting the Treaty

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130. *Id.*

131. Macdonald, *supra* note 20, at 338.

132. *Id.*

133. *Id.*

134. *Starr III*, 275 F. Supp. 3d at 232.

135. *Id.* at 244.

136. *Id.*

137. *Id.*

138. *Id.* at 243.

the court indicated “is anathema to the ‘substance-over-form principles’ enunciated by Article 22’s Technical Explanation.”<sup>139</sup>

The court also found illogical Starr International’s proposed test for applying Treaty Article 22(6). According to the court, the section “confers broad discretion on the [c]ompetent [a]uthority . . . [a]nd yet, despite [its] . . . discretionary nature . . . [,] Starr would have the [c]ompetent [a]uthority and the Court read into the provision a mechanical rule that leaves no room for discretion.”<sup>140</sup> The district court opined that “[i]t makes no sense to read this *non*-discretionary rule into a discretionary provision.”<sup>141</sup>

Another flaw the court found in Starr International’s reasoning was that the Treaty’s Technical Explanation “is clear . . . [that] the standards that govern Article 22(6) determinations . . . are concerned not with the existence of third-country residency, but rather with an entity’s *motivation* for choosing to establish *treaty-country residency*.”<sup>142</sup> Thus the focus of the waiver is “a subjective determination of Starr International’s *intent*.”<sup>143</sup> If, however, Starr International’s proposed test was applied, the court observed, it would lead to “a strange result . . . [of] an entity *with* a ‘principal purpose’ of obtaining treaty benefits . . . nevertheless entitled to benefits under Article 22(6).”<sup>144</sup> The court reiterated its point when it stated that “[m]aking a ‘subjective determination . . . of intent’ is not an activity that lends itself to precise, objective rules . . . [and Starr International’s proposed] reading [of Article 22(6)] would do violence to the structure and spirit of the Article.”<sup>145</sup>

The district court also believed that Starr International’s definition of treaty shopping was too limited. The court thought Starr International’s definition would “narrow the concept to such an extent that even some persons who are not *bona fide* residents of a treaty nation—persons who lack a ‘sufficient nexus’ to either contracting state—would be entitled to benefits.”<sup>146</sup> The court quoted former Deputy Assistant Treasury Secretary Joseph H. Guttentag “that while treaty shopping ‘general[ly]’ involves a third-country resident, it ‘can take a number of forms,’ and it is

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139. *Id.*

140. *Starr III*, 275 F. Supp. 3d at 244.

141. *Id.* at 245.

142. *Id.*

143. *Id.* (citing TREATY TECHNICAL EXPLANATION, *supra* note 25, at 59).

144. *Id.* at 245.

145. *Id.*

146. *Id.* at 246.

primarily concerned with treaty abuse 'by persons who are not *bona fide* residents of the treaty partner."<sup>147</sup> The court indicated that Starr International's very reason for proposing its limited mechanical standard for Treaty Article 22(6) was that "it largely concedes that it was not a *bona fide* resident of Switzerland or the United States at the relevant time."<sup>148</sup> In a footnote, the district court explained why it viewed Starr International's residency in Ireland and Switzerland to be that of form and not substance. "For most of the period between 2003 and 2008, Starr had only one salaried employee, who followed the company from Bermuda, to Ireland, and finally to Switzerland."<sup>149</sup>

The district court reviewed the U.S. competent authority's determination to decide whether it was arbitrary and capricious. The district court rebuked the significance of Starr International's contention that if its U.S. dividend withholding tax reduction would have remained in Ireland, it would have been "automatic in Ireland but discretionary in Switzerland,"<sup>150</sup> meaning that "tax benefits could not have been one of its principal purposes in relocating."<sup>151</sup> Instead, the court opined that the focus of the "principal purpose" inquiry should be "why Starr chose Switzerland over *any other jurisdiction* where it might have moved."<sup>152</sup> The question, the court indicated, was "not simply why Starr chose Switzerland over Ireland . . ."<sup>153</sup> The court also strongly implied that the initial move of Starr International from Bermuda to Ireland was relevant in the U.S. competent authority's decision making process because the IRS is permitted to consider "the continuity of the historical business and ownership of the foreign corporation."<sup>154</sup> At a later point in its decision, the court stated that "[i]t was reasonable, not capricious, for the [c]ompetent [a]uthority to consider such historical data,"—including its initial incorporation in Panama and reincorporation first in Bermuda and then in Ireland.<sup>155</sup>

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147. *Id.* (citing *Bilateral Tax Treaties and Protocol: Hearing Before the S. Comm. on Foreign Relations*, 105th Cong. 354 (1997)).

148. *Id.* at 246 (footnote omitted).

149. *Id.* at 264 n.12.

150. *Id.* at 247–48 (citation omitted).

151. *Id.* at 248 (citation omitted).

152. *Id.* at 248.

153. *Id.*

154. *Id.* (citing Treas. Reg. § 1.884-5(f)(2) (regarding branch profit regulations) and referencing TREATY TECHNICAL EXPLANATION, *supra* note 25, at 72).

155. *Id.* at 250.

Another defect in Starr International's attack of the U.S. competent authority's analysis is its "acknowledgment that 'U.S. Tax' was one of four key criteria that the company analyzed in deciding on a jurisdiction [which] shows that it 'constituted [a] principal consideration[]' in Starr's calculus."<sup>156</sup> The court stressed that while the matrix "rated [Switzerland] 'bad' for U.S. Taxes . . . it was definitely better in that regard than at least one of the other finalists (Bermuda)."<sup>157</sup> Furthermore, if in fact Starr International "had been afforded discretionary relief—which . . . [it] certainly seems to indicate was expected—then Switzerland would have tied for first place in that category with the other jurisdictions."<sup>158</sup>

The district court dismissed Starr International's assertion that "the [c]ompetent [a]uthority acted arbitrarily and capriciously because it failed to definitively conclude that the text of the Treaty should be overwritten by text in *other* bilateral tax treaties [that favorably address Starr International's particular structure], and because there is no legislative history to the contrary."<sup>159</sup> The court said, "at the very least, it was not unreasonable for the [c]ompetent [a]uthority to decline to read into the treaty a provision that was not there."<sup>160</sup>

This writer has no major qualms with the court's analysis in *Starr III*, with an important proviso that the APA route was inappropriate because "the APA supports a cause of action only when 'there is no other adequate remedy in a court.'"<sup>161</sup> Theoretically, had the APA path been proper, the *Starr III* reasoning appears sound as did its ultimate conclusion that "the [c]ompetent [a]uthority satisfied its obligations under the APA to 'examine the relevant data and articulate a satisfactory explanation for its action including a rational connection between the facts found and the choice made.'"<sup>162</sup> Furthermore, from the available information it appears the U.S. competent authority's decision to deny relief was reasonable. What this writer finds very disturbing, however, is the decision by the government to assert that the political question doctrine barred judicial review as well as the decision in *Starr II* which resulted in the district court

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156. *Id.* at 248.

157. *Id.* at 249.

158. *Id.*

159. *Id.*

160. *Id.*

161. *Starr Int'l Co. v. United States*, 910 F.3d 527, 536 (D.C. Cir. 2018) (citing 5 U.S.C. § 704).

162. *Starr III*, 275 F. Supp. 3d at 251 (citing *Ark Initiative v. Tidwell*, 816 F.3d 119, 127 (D.C. Cir. 2016)).

undertaking an incorrect and circuitous path *vis-à-vis* the APA to weigh in on the merits of Starr International's assertion. Thankfully, the court of appeals analyzed this issue correctly and reached the proper conclusion. The government should take note for future controversies.

*D. D.C. Circuit Court of Appeals Decision*

The Court of Appeals for the D.C. Circuit held that Starr International's tax refund did not raise a nonjusticiable political question and therefore Starr International could proceed with its tax refund claim.<sup>163</sup> The court denied Starr International's request that it "hold that the IRS misinterpreted and misapplied Article 22(6) and the principal purpose test of the Technical Explanation . . . [and thus is] leav[ing] it to the District Court . . . to consider Starr's arguments in the context of the tax refund action."<sup>164</sup> The court held that Starr International did not have a cause of action under the APA because "[t]he APA supports a cause of action only when 'there is no other adequate remedy in a court.'"<sup>165</sup>

As to the latter conclusion, the court determined Starr International had the normal tax refund claim procedure available to it.<sup>166</sup> The circuit court indicated that I.R.C. § 7422(a) "provides a cause of action for the 'recovery' of a 'tax alleged to have been erroneously or illegally assessed or collected,' . . . which is precisely the relief Starr seeks."<sup>167</sup> In rejecting the Government's assertion that Starr International's case "should be decided under the APA,"<sup>168</sup> the court concluded that a case cited by the Government, *Cohen v. United States*,<sup>169</sup> was inapposite.<sup>170</sup> It observed that the plaintiffs in *Cohen* "sought prospective, non-monetary relief . . ."<sup>171</sup> In contrast, Starr International "challenges the validity of an individual tax, not IRS procedures, and requests retroactive monetary relief."<sup>172</sup>

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163. *Starr Int'l*, 910 F.3d at 530.

164. *Id.* at 537–538.

165. *Id.* at 536 (citing 5 U.S.C. § 704).

166. *Id.* at 537–38.

167. *Id.*

168. *Id.*

169. 650 F.3d 717 (D.C. Cir. 2011).

170. *Starr Int'l*, 910 F.3d at 536.

171. *Id.*

172. *Id.*

The circuit court began its analysis by quoting the Supreme Court's expression of the political question canon in the famed decision *Baker v. Carr*.<sup>173</sup> It stated:

Prominent on the surface of any case held to involve a political question is found a textually demonstrable constitutional commitment of the issue to a coordinate political department; or a lack of judicially discoverable and manageable standards for resolving it; or the impossibility of deciding without an initial policy determination of a kind clearly for nonjudicial discretion; or the impossibility of a court's undertaking independent resolution without expressing lack of the respect due coordinate branches of government; or an unusual need for unquestioning adherence to a political decision already made; or the potentiality of embarrassment from multifarious pronouncements by various departments on one question.<sup>174</sup>

The circuit court pointed out that “[n]one of the *Baker v. Carr* factors are present in Starr’s tax refund claim.”<sup>175</sup> It stressed that “the Supreme Court has made it clear that application of the political question doctrine is a limited and narrow exception to federal court jurisdiction.”<sup>176</sup> The circuit court quoted the Supreme Court, reiterating that “it is error to suppose that every case or controversy which touches foreign relations lies beyond judicial cognizance . . . .”<sup>177</sup> Furthermore, the circuit court, quoting a later Supreme Court decision, stated that “courts have the authority to construe treaties.”<sup>178</sup> The circuit court emphasized that the Supreme Court has recognized that “[a] court cannot ‘avoid [its] responsibility’ to enforce a specific statutory right ‘merely because the issues have political implications.’”<sup>179</sup>

Additionally, the circuit court was critical of the district court’s determination in *Starr II* “that Starr’s refund action was nonjusticiable because granting a refund would ‘impinge upon the Executive’s prerogative to engage in [the consultation] process’

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173. *Id.* at 533 (citing *Baker v. Carr*, 369 U.S. 186, 217 (1962)).

174. *Baker*, 369 U.S. at 217.

175. *Starr Int’l*, 910 F.3d at 534.

176. *Id.* at 533.

177. *Id.* (citing *Baker*, 369 U.S. at 211).

178. *Id.* at 533–34 (quoting *Japan Whaling Ass’n v. Am. Cetacean Soc’y*, 478 U.S. 221, 230 (1986)).

179. *Id.* at 534 (citing *Zivotofsky v. Clinton*, 566 U.S. 189, 196 (2012) (quoting another source)).

with Switzerland.”<sup>180</sup> The circuit court thought that the lower court’s reasoning for its holding was inapt. The circuit court considered it to be ill founded “that a decision about Starr’s eligibility for relief . . . would impermissibly ‘establish the outcome of any negotiation or consultation between an executive-branch official and representatives of a foreign country.’”<sup>181</sup> Instead, the circuit court underscored that “[o]ur holding does not grant Starr the right to review the consultation . . . [and that] Starr duly concedes that it has no right to challenge the consultation itself.”<sup>182</sup>

Without reference to the original district court’s decision in *Starr I*, the circuit court echoed the lower court’s initial thinking that Treaty “Article 22(6) and the Technical Explanation provide meaningful standards that enable a court to determine whether the IRS’s determination was erroneous.”<sup>183</sup> The circuit court indicated that this was not a situation wherein “[t]he federal courts are . . . being asked to supplant a foreign policy decision of the political branches with the courts’ own unmoored determination’ . . .”<sup>184</sup> Rather, the court was “merely tasked with, for instance, the ‘familiar judicial exercise’ of determining how a statute should be interpreted or whether it is constitutional.”<sup>185</sup> The circuit court stated that the tax refund “claim [only] requires a court to ‘determine the nature and scope of the duty imposed’ on the U.S. [c]ompetent [a]uthority under Article 22(6).”<sup>186</sup> This type of inquiry “call[s] for applying no more than the traditional rules of statutory construction” with respect to the Treaty “and then applying this analysis to the particular set of facts presented” in Starr’s case.<sup>187</sup>

The circuit court “remand[ed] the case to the District Court to allow Starr to pursue its claim for a tax refund.”<sup>188</sup> It observed that there was some uncertainty as to what would follow this remand but noted that “[o]ne of four possible scenarios will likely play out though the parties and the District Court may consider other ways

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180. *Id.* at 535 (citing *Starr Int’l Co. v. United States (Starr II)*, No. 14-cv-01593 (CRC), 2016 WL 410989, at \*2 (D.D.C. Feb. 2, 2016)).

181. *Starr Int’l*, 910 F.3d at 535 (citing *Starr II*, 2016 WL 410989, at \*4).

182. *Id.*

183. *Id.* at 534.

184. *Id.* (quoting *Jaber v. United States*, 861 F.3d 241, 248 (D.C. Cir. 2017), *cert. denied*, 138 S. Ct. 480 (2017)).

185. *Id.* (quoting *Jaber*, 861 F.3d at 248).

186. *Id.* at 535 (quoting *Japan Whaling Ass’n v. Am. Cetacean Soc’y*, 478 U.S. 221, 230 (1986)).

187. *Starr Int’l*, 910 F.3d at 535 (quoting *Japan Whaling Ass’n*, 478 U.S. at 230).

188. *Id.* at 536–37.

to proceed.”<sup>189</sup> While the next steps for Starr International are uncertain and the litigation may wrap up without the refund sought, the decision itself should serve other taxpayers with beneficial precedent for avoiding an inappropriate judicial constraint.

*E. The Limitations on Benefits Provision and Its Safety Valve*

As noted above, the reduced dividend withholding tax provided by Article 10 of the Treaty was subject to the Limitation on Benefits provision contained in Article 22 of the Treaty.<sup>190</sup> This safeguard to treaty benefits is widespread in treaties where the United States is a party.<sup>191</sup>

According to Professors Boris Bittker and Lawrence Lokken in their seminal treatise—*Federal Taxation of Income, Estates and Gifts*—“[s]ince about 1980, the United States has insisted on including in new income tax treaties provisions denying treaty benefits in situations where they are likely to flow primarily to residents of third countries.”<sup>192</sup> These so-called “treaty shopping” provisions “limit the unintended use of a U.S. income tax treaty by third country residents.”<sup>193</sup> Thus, they are an important condition

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189. *Id.* at 537 (The alternatives listed by the circuit court are: “1. The U.S. Competent Authority could decide to proceed with consultation and might subsequently determine that Starr is entitled to benefits under the U.S.–Swiss Treaty. If the IRS awards Starr the monetary amount it seeks, the case will presumably be moot. 2. The U.S. Competent Authority might consult with its Swiss counterpart and maintain its current position that Starr is not entitled to Treaty benefits . . . If the District Court finds that the IRS should have deemed Starr eligible for benefits under Article 22(6), then the court may award Starr the money it seeks, consultation having already occurred as required under the Treaty. 3. The IRS might choose to maintain its current position without engaging in consultation at this time. If the District Court finds the IRS’s position indefensible, it can stay the case pending consultation between the U.S. and Swiss Competent Authorities, as no refund can be granted without consultation. The IRS can return to court and have the opportunity to present any new evidence that may have come to light during consultation. This posture would not afford Starr the right to seek review of the consultation, which is simply part of the IRS’s deliberative process. But if the IRS returns to the District Court and cites information obtained during the consultation process as the reason for denying tax benefits, that decision would be reviewable. 4. If the refund action goes forward and the District Court finds the evidence supports the IRS’s decision to deny benefits, then judgment may be granted in the Government’s favor.”).

190. See Markus F. Huber & Matthew S. Blum, *Limitation on Benefits Under Article 22 of the Switzerland-U.S. Tax Treaty*, 39 TAX NOTES INT’L 547 (2005) (discussing the many issues raised by the U.S.–Swiss limitation on benefits article) [hereinafter *Huber & Blum*].

191. Macdonald, *supra* note 20, at 31 (citation omitted) (indicating that “the United States is poised to eliminate the last of its remaining easily ‘shoppable’ treaties.”).

192. BITTKER & LOKKEN, *supra* note 13, at ¶ 67.3.3 (citation omitted).

193. Macdonald, *supra* note 20, at 14.



contained in the Model Tax Treaty and its recent predecessors.<sup>194</sup> Professors Bittker and Lokken hypothesize that the reason the Treasury Department is adamant about including a Limitation on Benefits provision lies in the fact that the U.S. “does not have treaties with many nations from which it draws capital, and residents of these countries, being denied direct access to treaty benefits, can be expected to exploit any indirect routes to these benefits that may be open to them.”<sup>195</sup> While J. Ross Macdonald agrees that “the U.S. anti-treaty shopping program helped to improve U.S. income tax treaties,”<sup>196</sup> he is critical of how the program has been structured. In this regard, he writes that:

[T]he U.S. anti-treaty shopping program . . . came at the cost of a staggering increase in complexity in treaty analysis, the burden of which has fallen almost entirely on taxpayers. It is often the case that taxpayers, who most rational observers would see as parties entitled to tax treaty benefits, are justifiably uncertain regarding their treaty entitlement under current U.S. limitation on benefits rules. This is a function of the ambiguity, complexity and lacunae in the existing U.S. anti-treaty shopping rules which are currently structured as a series of objective tests.<sup>197</sup>

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194. *Id.* at 13–14; BITTKER & LOKKEN, *supra* note 13, at ¶ 65.1.6 (noting the U.S. Model Treaty is used by the U.S. Treasury Department “in formulating its initial position in treaty negotiations”). The most recent version of the U.S. Model Treaty was issued in 2016, and its most recent predecessors were issued in 2006 and 1996. *See* DEP’T OF THE TREASURY, UNITED STATES MODEL INCOME TAX CONVENTION (2016); DEP’T OF THE TREASURY, U.S. MODEL INCOME TAX CONVENTION OF NOVEMBER 15, 2006 (2006); DEP’T OF THE TREASURY, U.S. MODEL INCOME TAX CONVENTION OF SEPTEMBER 20, 1996 (1996). The 2016, 2006, and 1996 Models are available on the Treasury’s website at <https://www.treasury.gov/resource-center/tax-policy.d>. 2018.

195. BITTKER & LOKKEN, *supra* note 13, at ¶ 67.3.3; *see also* Macdonald, *supra* note 20, at 14 (highlighting the contrast between US treaties and OECD Model Treaties by pointing out that “the various OECD Model Treaties do not contain an anti-treaty shopping article (although, since 1977, the OECD Commentaries contemplate that anti-treaty shopping language can be added to a treaty by the Contracting States when desired). While other countries have included treaty shopping limitations in certain of their income tax treaties (particularly those with jurisdictions they perceive to be tax havens) and while the OECD Base Erosion and Profit Shifting (BEPS) initiative has recently focused substantial international attention on this issue, no country has historically carried the attack on treaty shopping as far as the United States.”) (footnotes omitted).

196. Macdonald, *supra* note 20, at 29.

197. *Id.* Macdonald’s article is very disparaging of the limitations on benefits article in the 2016 U.S. Model Tax Treaty, writing that the U.S. “should reconsider certain aspects of its anti-treaty shopping policy that have exceeded (particularly with respect to the changes made to the limitation on benefits article by the 2016 U.S. Model Treaty) any rational policy regarding treaty shopping.” *Id.* at 30. Macdonald advised that “the U.S. tax authorities need to focus more on compliance and less on further tightening the existing anti-treaty shopping rules. Unfortunately, it is always easier to ‘tighten the rules’ than

In its brief to the circuit court, Starr International heavily relied on the pitfalls surrounding the Limitation on Benefits provision, drawing support from statements by Richard A. Gordon—the then international tax counsel for the Joint Committee on Taxation—at a Senate hearing.<sup>198</sup> In the fact pattern given, a Canadian business (Company A) wanted to invest in a United States venture (Company B). Instead of making a direct investment in the United States business, Company A “would make the investment through a subsidiary holding company (Company C) established in the Netherlands, which had a favorable tax treaty with the United States.”<sup>199</sup> Absent a Limitation on Benefits provision, “[b]y virtue of the artificial interposition of Company C, Company A would receive treaty benefits above and beyond the benefits available to a Canadian business investing in the United States.”<sup>200</sup> According to Starr International, this was Article 22’s “single purpose,” i.e., “to prevent the inappropriate use of the treaty by third-country residents.”<sup>201</sup>

Starr International did not meet the mechanical tests of Article 22 of the Treaty because “Starr AG and the [Starr International] Foundation were not covered by Article 22(1)(f).”<sup>202</sup> Furthermore, “while Starr AG or the [Starr International] Foundation might qualify for treaty benefits, [contained in Article 22(2) addressing charitable organizations,] Starr International itself could not qualify.”<sup>203</sup> This result was in

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actually to try to implement them. This was certainly the tack taken by the Treasury in its revision to the limitation on benefits rules contained in the 2016 U.S. Model Treaty.” *Id.* at 31. He also expressed disapproval of Article 22 of the U.S.–Swiss Tax Treaty asserting that “[i]f it is appropriate to state that certain aspects of U.S. limitation on benefits provisions are not well conceived, this has never been more true than in the case of the limitation on benefits article contained in the 1996 U.S.–Switzerland Treaty.” *Id.* at 195 (footnote omitted).

198. Brief for Appellant at 6, *Starr Int’l Co. v. United States*, 910 F.3d 527 (D.C. Cir. 2018) (No. 17-5238) (citing *Tax Treaties: Hearings Before the S. Comm. on Foreign Relations*, 97th Cong. 43 (1981) (statement of Richard A. Gordon, International Tax Counsel, J. Comm. on Taxation)).

199. *Id.*

200. *Id.*

201. *Id.* at 45–46 (quoting S. Exec. Rep. No. 105-10, at 3 (1997)); *see also id.* at 43 (stating “although the technical explanation makes references to third-country residents, it expressly states that residency and other criteria in Article 22’s mechanical tests are mere ‘surrogates’ . . . for intent” as a basis for the government’s rejection of Starr International’s focus on third-party residents).

202. Macdonald, *supra* note 20, at 337. At a later point in his article Macdonald was more definitive, indicating that “[w]hile the charity *would* qualify for treaty benefits as a resident of Switzerland, Starr International needed the connection of the charity in order for Starr International to qualify for treaty benefits.” *Id.* at 338 (emphasis added).

203. *Id.* at 337.

spite of the fact that “the vast preponderance of its economics and vote was owned by U.S. persons and a Swiss charity.”<sup>204</sup> Thus, to avail itself of the reduced dividend withholding tax under Article 10, Starr International needed to be accorded relief under Treaty Article 22(6)’s safety valve provision.<sup>205</sup>

Macdonald indicated that the Treasury Department agreed on the necessity of a safety valve test in the Limitation of Benefits clause since it was “aware that the objective tests were mechanical and by their very nature would never completely ensure that all qualifying taxpayers would qualify for treaty benefits.”<sup>206</sup> As such, the Treasury “accepted the need to provide a mechanism by means of which persons that, for one reason or another, could not qualify under one of the objective tests could seek relief from the competent authorities.”<sup>207</sup> Macdonald explained that “[t]here are two principal versions of the safety valve test.”<sup>208</sup> The one utilized in the Treaty “is more generically drafted and can be found in approximately [twenty-six] U.S. income tax treaties.”<sup>209</sup>

Markus F. Huber and Matthew S. Blum commented in 2005, writing that they did not believe Article 22(6) of the Treaty would open too many doors.<sup>210</sup> Macdonald also expressed pessimism with the utility of the safety valve provision in general, noting that “based entirely on anecdotal evidence, it is understood that the U.S. competent authority has typically proved to be quite restrictive in extending treaty benefits under this test.”<sup>211</sup>

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204. *Id.*

205. *Id.* at 334.

206. *Id.* at 328.

207. *Id.* at 328–29.

208. Macdonald, *supra* note 20, at 329.

209. *Id.* at 331 (citation omitted).

210. See Huber & Blum, *supra* note 190, at 567.

211. Macdonald, *supra* note 20, at 333–34 (“[T]he author is aware of only one or two cases where a taxpayer has been granted treaty benefits under this provision. In addition, a former colleague who belongs to the Washington International Tax Study Group, a group made up of approximately 30 to 35 of the most senior international tax lawyers in Washington, D.C., once asked the members how many of them had received rulings for clients under this test. The number who had received such rulings was surprisingly small. Third, and finally, it is also anecdotally reported that the Service has become steadily less willing to give favorable consideration to ruling requests over the past 10 to 15 years. In general, it is understood that cases most likely to be accepted involve the situation where a taxpayer just barely fails to satisfy one of the objective tests (for example, where the public company test required 10% public trading volume and the company’s trading volume for the year was only 9.98% or where Starr International’s base erosion was slightly in excess of 50%).”).

III. THE POLITICAL QUESTION DOCTRINE AND WHY THE CIRCUIT COURT WAS CORRECT IN HOLDING IT TO BE INAPPLICABLE TO *STARR INTERNATIONAL*

In *Rucho v. Common Cause* in June 2019,<sup>212</sup> the Supreme Court held that partisan gerrymandering claims are beyond the reach of the federal courts, describing the political question doctrine and at least one of its rationales as follows:

Sometimes, however, “the law is that the judicial department has no business entertaining the claim of unlawfulness—because the question is entrusted to one of the political branches or involves no judicially enforceable rights.” In such a case the claim is said to present a “political question” and to be nonjusticiable—outside the courts’ competence and therefore beyond the courts’ jurisdiction . . . Among the political question cases the Court has identified are those that lack “judicially discoverable and manageable standards for resolving [them].”<sup>213</sup>

Later in its opinion, the Supreme Court expanded on its concern for adjudicating gerrymandering cases without a manageable standard.

With uncertain limits, intervening courts—even when proceeding with best intentions—would risk assuming political, not legal, responsibility for a process that often produces ill will and distrust. If federal courts are to ‘inject [themselves] into the most heated partisan issues’ by adjudicating partisan gerrymandering claims, they must be armed with a standard that can reliably differentiate unconstitutional from ‘constitutional political gerrymandering.’<sup>214</sup>

*Vieth v. Jubelirer* is another case on political gerrymandering in recent history but it precedes *Rucho* enough to be heavily referenced in a favorable light.<sup>215</sup> In a 5–2 decision, the Court in

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212. 139 S. Ct. 2484 (2019).

213. *Id.* at 2494. Four justices dissented arguing the doctrine was inappropriately applied to the cases at bar, with Justice Kagan concluding her dissent, “[o]f all times to abandon the Court’s duty to declare the law, this was not the one. The practices challenged in these cases imperil our system of government. Part of the Court’s role in that system is to defend its foundations. None is more important than free and fair elections. With respect but deep sadness, I dissent.” *Id.* at 2525 (Kagan, J., dissenting).

214. *Id.* at 2498–99 (majority opinion) (citation omitted).

215. *Id.* at 2498. (demonstrating that the crux of the *Rucho* argument was the belief that a standard requiring “the correction of all election district lines drawn for partisan reasons would commit federal and state courts to unprecedented intervention in the

*Vieth* affirmed the lower court's decision dismissing a claim to enjoin a Pennsylvania General Assembly congressional redistricting plan that was alleged to be in violation of Article I of the Constitution and the Fourteenth Amendment's Equal Protection Clause.<sup>216</sup> After quoting Justice Marshall's celebrated line from *Marbury v. Madison* that "[i]t is emphatically the province and duty of the judicial department to say what the law is,"<sup>217</sup> the Court noted that there are some limits to this rationale. In this regard, Justice Scalia's decision in *Vieth* declared that "[s]ometimes, however, the law is that the judicial department has no business entertaining the claim of unlawfulness—because the question is entrusted to one of the political branches or involves no judicially enforceable rights."<sup>218</sup> The Court decided the political question doctrine barred the claim because of "a lack of judicially discoverable and manageable standards for resolving it."<sup>219</sup>

A landmark case for the political question doctrine was *Baker v. Carr*,<sup>220</sup> although it was somewhat tempered by *Rucho* and *Vieth*. Like *Rucho* and *Vieth*, the case dealt with voting rights. The appellants in *Baker v. Carr* had alleged that:

[B]y means of a 1901 statute of Tennessee apportioning the members of the General Assembly among the State's 95 counties, "these plaintiffs and others similarly situated, are denied the equal protection of the laws accorded them by the *Fourteenth Amendment to the Constitution of the United States* by virtue of the debasement of their votes."<sup>221</sup>

One of the grounds asserted by the appellees to dismiss the action "rested upon . . . the inappropriateness of the subject matter for judicial consideration—what . . . [the Supreme Court] . . . designated 'nonjusticiability.'"<sup>222</sup> The Court explained that with respect to nonjusticiability, "consideration of the cause is not wholly and immediately foreclosed; rather, the Court's inquiry necessarily proceeds to the point of deciding whether the duty

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American political process" and with such standards "intervening courts—even when proceeding with best intentions—would risk assuming political, not legal responsibility for a process that often produces ill will and distrust.") (quoting *Vieth v. Jubelirer*, 541 U.S. 267, 306–07 (2004) (Kennedy, J., concurring)).

216. See *Vieth*, 541 U.S. at 271–73, 306.

217. *Id.* at 277 (quoting *Marbury v. Madison*, 5 U.S. 137, 177 (1803)).

218. *Id.* (citations omitted).

219. *Id.* at 277–78. This is the second factor given by the Court in *Baker v. Carr*, 369 U.S. 186, 217 (1962). See *infra* notes 221–33 and accompanying text.

220. 369 U.S. 186 (1962).

221. *Id.* at 187 (emphasis added) (citations omitted).

222. *Id.* at 198.

asserted can be judicially identified and its breach judicially determined, and whether protection for the right asserted can be judicially molded.”<sup>223</sup> The Court held that “this cause presents no nonjusticiable ‘political question.’”<sup>224</sup> The Court indicated that the district court erroneously determined “that since the appellants sought to have a legislative apportionment held unconstitutional, their suit presented a ‘political question’ and was therefore nonjusticiable.”<sup>225</sup>

Of particular relevance to the circuit court decision in *Starr International vis-à-vis* the question of the application of the political question doctrine is whether “all questions touching foreign relations are political questions.”<sup>226</sup> According to the Court, issues relating to foreign relations might become nonjusticiable political questions where there is a “risk [of] embarrassment to our government abroad.”<sup>227</sup> Justice Brennan, writing for the Court, opined that “it is error to suppose that every case or controversy which touches foreign relations lies beyond judicial cognizance.”<sup>228</sup> As to tax treaties in particular, the Court declared that: “[T]hough a court will not ordinarily inquire whether a treaty has been terminated, since on that question ‘governmental action . . . must be regarded as of controlling importance,’ if there has been no conclusive ‘governmental action’ then a court can construe a treaty and may find it provides the answer.”<sup>229</sup>

As to when the courts should determine something to be a nonjusticiable political question, the Court formulated the following analysis which was quoted by the D.C. Circuit Court in *Starr International*:

Prominent on the surface of any case held to involve a political question is found a textually demonstrable constitutional commitment of the issue to a coordinate political department; or a lack of judicially discoverable and manageable standards for resolving it; or the impossibility of deciding without an initial policy determination of a kind clearly for nonjudicial discretion; or the impossibility of a court’s undertaking independent resolution without expressing lack of the respect due coordinate branches of government; or an unusual need

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223. *Id.*

224. *Id.*

225. *Id.* at 209.

226. *Id.* at 211 (footnote omitted).

227. *Id.* at 226.

228. *Id.* at 211.

229. *Id.* at 212.

for unquestioning adherence to a political decision already made; or the potentiality of embarrassment from multifarious pronouncements by various departments on one question.<sup>230</sup>

The Supreme Court stated, with respect to the aforementioned criteria, that “[u]nless one of these formulations is inextricable from the case at bar, there should be no dismissal for nonjusticiability on the ground of a political question’s presence.”<sup>231</sup>

Professor Tara Leigh Grove, writing pre-*Rucho v. Common Cause*, saw *Baker v. Carr* as enunciating what she referred to as the “modern political question doctrine, one that could serve, not as a doctrine of judicial restraint (or subservience), but as a source of power.”<sup>232</sup> Because the Roberts Court was reticent to address disgraceful gerrymandering in *Rucho v. Common Cause* due to political question underpinnings, this assessment may be questionable today. Nevertheless, this line of cases narrates the evolution of the political question doctrine and indicates that, at the very least, a form of the political question doctrine “has been a feature of our legal system for over two hundred years [commencing with *Marbury v. Madison*].”<sup>233</sup> Professor Grove argues that the political question doctrine employed by the courts until the mid-twentieth century, which she refers to as the “traditional political question doctrine,” was “strikingly different from the current version.”<sup>234</sup> Professor Grove writes that under the courts’ application of the traditional political question doctrine, the courts “did not dismiss as nonjusticiable an issue that

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230. *Id.* at 217. Justice Brennan’s *Baker v. Carr* test to determine when to treat an issue as a political question has been subject to much criticism. See, e.g., J. Peter Mulhern, *In Defense of the Political Question Doctrine*, 137 U. PA. L. REV. 97, 163 (1988) [hereinafter Mulhern].

231. *Baker*, 369 U.S. at 217. Justice Frankfurter analogized his vigorous dissent in this case to the opinion he authored in *Colegrove v. Green* where, with respect to reappointment, he stated “[c]ourts ought not to enter this political thicket.” *Id.* at 277–78 (Frankfurter, J. dissenting); *Colegrove v. Green*, 328 U.S. 549, 556 (1946).

232. Tara Leigh Grove, *The Lost History of the Political Question Doctrine*, 90 N.Y.U. L. REV. 1908, 1913 (2015) (footnote omitted) [hereinafter Grove].

233. *Id.* at 1910 (referencing *Marbury v. Madison*, 5 U.S. 137 (1803)) (footnote omitted). In the renowned case of *Marbury v. Madison*, Chief Justice Marshall declared that “[t]he province of the court is, solely, to decide on the rights of individuals, not to inquire how the executive, or executive officers, perform duties in which they have a discretion. Questions in their nature political, or which are, by the constitution and laws, submitted to the executive, can never be made in court.” *Marbury*, 5 U.S. at 170. As noted above, the opinion also contained Justice Marshall’s even more celebrated statement that “[i]t is emphatically the province and duty of the [courts] to say what the law is.” *Id.* at 177. The courts remain the final arbiter of what is or is not a political question.

234. Grove, *supra* note 232, at 1911.

presented a political question but rather enforced and applied the political branches' conclusion."<sup>235</sup> Under this practice, "the courts treated the political branches' determination as a (factual) rule of decision for the case. That was true, even if the courts believed that the political branches were in error."<sup>236</sup>

Under the traditional political question doctrine, "[b]oth federal and state courts were required to enforce and apply the determinations of the federal political branches on 'political questions.'"<sup>237</sup> Professor Grove wrote that under the traditional political question doctrine, "the [older] courts followed the executive's determination, 'whether the executive be right or wrong.'"<sup>238</sup> That is, the political question doctrine was considered to "generally require . . . the courts to treat 'the expressed view of the political department' as 'a rule of decision for the court.'"<sup>239</sup>

A new interpretation of the political question doctrine began to evolve from legal scholars "[b]y the early 1930s . . . [with,] by the mid-twentieth century, the shift largely" completed.<sup>240</sup> "Despite the lack of change in the case law, much of the legal community gradually came to see the 'political question doctrine' as a device that would prohibit federal courts from ruling on certain constitutional issues."<sup>241</sup>

Professor Grove argues that the landmark decision *Baker v. Carr* represented "a new political question doctrine" different from both the traditional political question doctrine and that which had been espoused by the legal community beginning in the early 1930s.<sup>242</sup> She noted that the legal community's interpretation of the political question doctrine was "in serious tension with the Warren Court's vision of its institutional role."<sup>243</sup>

Professor Grove's interpretation of the modern political question doctrine, as articulated by the Court in *Baker v. Carr*, was one that "would no longer enforce the political branches' factual determinations, whether they 'be right or wrong.'"<sup>244</sup> Justice Brennan, writing for the Court in *Baker v. Carr*, articulated the political question doctrine as one where "the Court

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235. *Id.*

236. *Id.*

237. *Id.* (footnote omitted).

238. *See id.* at 1923 (footnote omitted).

239. *Id.* at 1948.

240. Grove, *supra* note 232, at 1948–49.

241. *Id.* at 1912.

242. *Id.* at 1913.

243. *Id.* at 1959.

244. *Id.* at 1913–14 (footnote omitted).



would not ‘shut its eyes to an obvious mistake’ in the political decision making.”<sup>245</sup> Professor Grove, on the other hand, saw the *Baker v. Carr* description of the political question doctrine as one wherein “the Court would independently decide both the legal and factual issues arising in any case or controversy.”<sup>246</sup> Furthermore, under the modern political question doctrine of *Baker v. Carr*, the Supreme Court “took control of (what existed of) the constitutional side of the doctrine: ‘Deciding whether a matter has in any measure been committed by the Constitution to another branch . . . is a responsibility of this Court *as ultimate interpreter of the Constitution*.’”<sup>247</sup>

About a quarter of a century after *Baker v. Carr*, the Court decided *Japan Whaling Ass’n v. American Cetacean Society*,<sup>248</sup> another case cited by the D.C. Circuit Court in *Starr International*.<sup>249</sup> The question before the Court in *Japan Whaling* was whether, as a consequence of certain federal legislation, the Secretary of Commerce was “required to certify that Japan’s whaling practices ‘diminish the effectiveness’ of the International Convention for the Regulation of Whaling because that country’s annual harvest exceeds quotas established under the Convention.”<sup>250</sup> The district court held, and the court of appeals affirmed, that “the Secretary of Commerce [was required to] immediately . . . certify to the President that Japan was in violation of the . . . sperm whale quota.”<sup>251</sup> After the district court’s decision, “Japan’s Minister for Foreign Affairs informed the Secretary of Commerce that Japan would . . . withdraw[] . . . its objection to the [International Whaling Commission] moratorium—provided that the United States obtained reversal of the [d]istrict [c]ourt’s order.”<sup>252</sup>

*Japan Whaling* stands as an important precedent in political question jurisprudence, now at issue in *Starr International*.<sup>253</sup> The petitioners in *Japan Whaling Association* asserted “that a federal court . . . lacks the judicial power to command the Secretary of Commerce, an Executive Branch official, to dishonor and

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245. *Id.* at 1962–63 (quoting *Baker v. Carr*, 369 U.S. 186, 214 (1962)).

246. Grove, *supra* note 232, at 1914 (footnote omitted).

247. *Id.* (emphasis in original)(footnote omitted).

248. 478 U.S. 221 (1986).

249. *Starr Int’l. Co. v. Comm’r*, 910 F.3d 527, 534 (D.C. Cir. 2018).

250. *Japan Whaling Ass’n v. Am. Cetacean Soc’y*, 478 U.S. 221, 223 (1986).

251. *Id.* at 229.

252. *Id.*

253. *See id.* at 229–30.

repudiate an international agreement.”<sup>254</sup> The Court flatly rejected this argument, restating the *Baker* holding, that “the courts have the authority to construe treaties and executive agreements, and . . . interpreting congressional legislation is a recurring and accepted task for the federal courts.”<sup>255</sup> The Court noted, “[T]he challenge to the Secretary’s decision not to certify Japan for harvesting whales in excess of IWC quotas presents a purely legal question of statutory interpretation.”<sup>256</sup> Furthermore, the Court acknowledged the relationship between federal statutes, foreign relations, and “the premier role which both Congress and the Executive play in this field.”<sup>257</sup> However, the Court sidestepped the political question doctrine by narrowing the issue to statutory interpretation, finding a judicable controversy.<sup>258</sup>

The next important Supreme Court case discussing the breadth of a court’s power concerning the political question doctrine is *Zivotofsky v. Clinton*,<sup>259</sup> a case decided about a half-century after *Baker v. Carr*. *Zivotofsky* involved an American child born in Jerusalem who, along with his parents, wanted to have Israel listed as his place of birth on his passport as permitted by a Congressional statute.<sup>260</sup> The State Department, however, refused his request and declined to follow the Foreign Relations Authorization Act, citing its “longstanding policy of not taking a position on the political status of Jerusalem.”<sup>261</sup> A subsequent lawsuit filed by Zivotofsky’s parents attempted to force the State Department to follow the statute. However, the district court granted a motion to dismiss the complaint because the suit presented a “nonjusticiable political question” and “Zivotofsky lacked standing.”<sup>262</sup> On appeal, the D.C. Circuit concluded that Zivotofsky had standing but the issue became whether the Foreign Relations Authorization Act entitled Zivotofsky to have just “Israel” listed as his place of birth.<sup>263</sup> Finding that additional factual development was in order, the circuit court remanded the case back to the district court.<sup>264</sup> The district court once again

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254. *Id.* at 229.

255. *Id.* at 230.

256. *Japan Whaling Ass’n*, 478 U.S. at 230.

257. *Id.*

258. *Id.*

259. 566 U.S. 189 (2012).

260. *Id.* at 191–96.

261. *Id.* at 191.

262. *Id.* at 193.

263. *Id.*

264. *Id.*

found the case to be nonjusticiable, because “resolving Zivotofsky’s claim on the merits would necessarily require the court to decide the political status of Jerusalem.”<sup>265</sup> This position was then affirmed by the D.C. Circuit, reasoning that “the Constitution gives the Executive the exclusive power to recognize foreign sovereigns, and that the exercise of this power cannot be reviewed by the courts.”<sup>266</sup> In a concurring opinion, Judge Edwards, the author of *Starr International*, wrote separately to express his view that the political question doctrine had no application to this case.<sup>267</sup> His concurrence was based on his belief that the federal statute was unconstitutional because “the Constitution gives the power [in question] exclusively to the President.”<sup>268</sup>

Chief Justice Roberts, the author of the *Rucho v. Common Cause* opinion, found the political question doctrine to be inapposite in *Zivotofsky*. Writing for the Court, he indicated that the lower courts misconstrued the real issue; the issue was not “to ‘decide the political status of Jerusalem,’”<sup>269</sup> but was whether Zivotofsky “may vindicate his statutory right, under § 214(d), to choose to have Israel recorded on his passport as his place of birth.”<sup>270</sup> The Court observed that “[t]he federal courts are not being asked to supplant a foreign policy decision of the political branches with the courts’ own unmoored determination of what United States policy toward Jerusalem should be.”<sup>271</sup> This was simply a “request . . . that the courts enforce a specific statutory right. To resolve his claim, the Judiciary must decide if Zivotofsky’s interpretation of the statute is correct, and whether the statute is constitutional. This is a familiar judicial exercise.”<sup>272</sup> The Court correctly restricted the employment of the political question doctrine, which it characterized as “a narrow exception” to the requirement that courts have “a responsibility to decide cases properly before it” so as not to prevent construing the statute.<sup>273</sup>

Deciding the unsuitability of the political question doctrine in *Starr International*, this writer submits it is considerably less

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265. *Id.*

266. *Id.* at 193–94.

267. *Id.* at 194.

268. *Id.*

269. *Id.* at 195.

270. *Id.*

271. *Id.* at 196.

272. *Id.*

273. *Id.* at 194–95.

demanding than what the Court confronted in *Zivotofsky v. Clinton*. Consider the opinion of the sole justice dissenting in *Zivotofsky*, Justice Breyer. He writes that in matters involving certain foreign affairs, there “is a judicial hesitancy to make decisions that have significant foreign policy implications . . . .”<sup>274</sup> He notes the political question has been applied to cases relating to, for example, “the validity of a treaty . . . or upon its continuing existence[,] . . . the existence of foreign states, governments, belligerents, and insurgents[, and] . . . the territorial boundaries of foreign states.”<sup>275</sup> What aspect of foreign relations is put in jeopardy when the judiciary permits a tax refund suit to proceed when it involves the correctness of the Service disallowing reduced withholding tax on U.S. sourced dividends? Is it proceeding with the lawsuit in a manner as envisioned by the Circuit Court that will cause “embarrassment from multifarious pronouncements by various departments on one question. . . [?]”<sup>276</sup> Does the government truly believe that the decision of the circuit court in *Starr International* will ruffle any feathers in Bern?

This writer is not unmindful of the implications of the requirement in Article 22(6) of the Treaty for “consultation,” albeit not agreement, with the Swiss competent authority before relief can be granted. It certainly caused a major consternation for the district court in *Starr II*. This provision might serve as a potential impediment to a court unilaterally granting a refund, a point acknowledged by the circuit court when it stated that “no refund can be granted without consultation.”<sup>277</sup> In this respect, it is admittedly different from a case like *Zivotofsky*, where the court’s decision should resolve the entire matter.<sup>278</sup> It would, however, not be unreasonable in this writer’s opinion to subscribe to *Starr International*’s position that the consultation process “was meant to be ministerial in nature.”<sup>279</sup> Further, given the high probability that Switzerland would not raise any objections to a United States tax benefit being granted to a Swiss resident, it should be permissible for a court to grant a refund. The circuit court did not, however, go this far, balancing its rejection of the application of

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274. *Id.* at 214.

275. *Id.*

276. *Baker v. Carr*, 369 U.S. 186, 217 (1962).

277. *Starr Int’l Co. v. United States*, 910 F.3d 527, 537 (D.C. Cir. 2018).

278. To clarify, in *Zivotofsky*, the Supreme Court remanded the case stating that “[h]aving determined that the case is justiciable, we leave it to the lower courts to consider the merits in the first instance.” *Zivotofsky*, 566 U.S. 189, 202 (2012).

279. Brief for Appellant at 57, *Starr Int’l*, 910 F.3d 527 (No. 17-5238).

the political question doctrine with any tax relief predicated on consultation with the Treaty counterpart.

*Starr International* is not a case where failure to treat the matter as a political question will create “the threat of public reaction to judicial activism.”<sup>280</sup> The theory for judicial abstinence in this type of case, as described by Professor J. Peter Mulhern (a scholar who does not subscribe to it as a valid justification for a court’s actions), is that “[t]he courts must not try to do more than the people will permit them to do. If the courts do not limit their own role, the people will limit it for them. By limiting themselves, the courts can ensure that their most important functions are not impaired.”<sup>281</sup> Whether or not one considers this theory, advanced by the eminent constitutional law scholar Dean Jesse Choper, to be a compelling basis for determining a matter to be a political question,<sup>282</sup> it clearly has no bearing in a federal court’s consideration of the *Starr International* refund claim.

It is useful to compare the *Starr International* fact-pattern with those in *Rucho v. Common Cause* and *Vieth v. Jubelirer*. Whether one agrees with the judgments in *Rucho* and *Vieth*, and this writer is dubious, one can at least have some empathy for the Court’s concern that future courts may have “no legal standards to limit and direct their decisions.”<sup>283</sup> As the D.C. Circuit Court of Appeals wrote in *Starr International*, “Article 22(6) and the Technical Explanation provide meaningful standards that enable a court to determine whether the IRS’s determination was erroneous.”<sup>284</sup> As noted above, this assessment was shared by the district court which maintained this position even upon reconsideration.<sup>285</sup>

The political question doctrine serves a vital function to ensure “the separations of powers.”<sup>286</sup> For example, in a relatively

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280. Mulhern, *supra* note 230, at 168.

281. *Id.* at 168–69.

282. Jesse H. Choper, JUDICIAL REVIEW AND THE NATIONAL POLITICAL PROCESS: A FUNCTIONAL RECONSIDERATION OF THE ROLE OF THE SUPREME COURT 169 (1980).

283. *Rucho v. Common Cause*, 139 S. Ct. 2484, 2507 (2019).

284. *Starr Int’l*, 910 F.3d at 534.

285. In *Starr II*, the district court “reaffirmed its prior holding that a manageable standard exists for assessing whether *Starr* met the relevant criteria for obtaining treaty benefits. It also reiterated that interpreting the Treaty in a manner necessary to determine whether *Starr* met the applicable criteria would not offend the political-question doctrine.” However, the court dismissed *Starr*’s tax refund claim under 26 U.S.C. § 7422(a) as raising a nonjusticiable political question. As the District Court saw it, ordering the IRS to pay *Starr* the requested \$38 million refund would impinge upon the Executive Branch’s exercise of diplomacy in its consultation with the Swiss competent authority, as required under Article 22(6).” *Id.* at 532.

286. *Baker*, 369 U.S. at 210.

recent case, *Jaber v. United States*,<sup>287</sup> a decision cited by the circuit court in *Starr International*,<sup>288</sup> plaintiffs sought “a declaratory judgment stating their family members were killed in the course of a U.S. drone attack in violation of international law governing the use of force, the Torture Victim Protection Act (TVPA), and the Alien Tort Statute (ATS).”<sup>289</sup> They alleged that the family members in question were collateral damage in a U.S. drone strike in Yemen.<sup>290</sup>

In finding the political question doctrine precluded a court’s adjudicating this matter, the circuit court declared that “[t]o resolve . . . [the] claims, a reviewing court *must* determine whether the U.S. drone strike in Khashamir [Yemen] was ‘mistaken and not justified.’”<sup>291</sup> In contrast to *Zivotofsky*, the court indicated that plaintiffs’ claims “would require the Court to second-guess the wisdom of the Executive’s decision to employ lethal force against a national security target—to determine, among other things, whether an ‘urgent military purpose or other emergency justified’ a particular drone strike.”<sup>292</sup> The court of appeals indicated that “Plaintiffs’ request is more analogous to an action challenging the Secretary of State’s independent refusal to recognize Israel as the rightful sovereign of the city of Jerusalem, a decision clearly committed to executive discretion.”<sup>293</sup> Applying the political question doctrine so that “the foreign target of a military strike cannot challenge in court the wisdom [that] military action taken by the United States” is certainly a world apart from what the court confronted in *Starr International*.<sup>294</sup>

#### IV. CONCLUSION

The Court of Appeals for the District of Columbia correctly decided in *Starr International* that Starr International’s refund lawsuit should not have been dismissed on grounds that it

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287. 861 F.3d 241 (D.C. Cir. 2017).

288. 910 F.3d 527 (D.C. Cir. 2018).

289. *Jaber*, 861 F.3d at 243.

290. *Id.* at 244.

291. *Id.* at 247 (emphasis in original).

292. *Id.* at 249.

293. *Id.*

294. *Id.* at 250 (quoting *El-Shifa Pharm. Indus. Co. v. United States*, 607 F.3d 836, 851 (D.C. Cir. 2010)). In a very thoughtful concurring opinion in *Jaber*, Judge Brown acknowledged with lament that “the political question doctrine insures that effective supervision of this wondrous new warfare will not be provided by U.S. courts.” *Id.* at 250 (Brown, J., concurring). While recognizing that in the absence of judicial review, there is no “check [on] this outsized power,” he conceded that “the Judiciary is simply not equipped to respond nimbly to a reality that is changing daily if not hourly.” *Id.* at 250, 252.

presented a nonjusticiable political question. Starr International's assertion that "the political question doctrine is reserved for cases that implicate sensitive policy judgments by a coordinate branch, not for ordinary cases of treaty interpretation" was proper.<sup>295</sup> There was no "lack of judicially discoverable and manageable standards for resolving the question before the court" and it did not entail "significant foreign policy implication[s]."<sup>296</sup> Furthermore, none of the other criteria set forth in *Baker v. Carr* for applying the political question doctrine were germane.

There is certainly a role in our judicial system for the courts to apply the political question doctrine, such as in *Jaber. Starr International* however, was a clearly inappropriate venue. It is questionable why the Government asserted this ill-chosen roadblock to resolving this matter. The interests of sound tax policy would have been better served if the Government had not contended the political question doctrine barred the court's consideration of this matter.

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295. Reply Brief for Appellant at 25, *Starr Int'l Co. v. United States*, 910 F. 3d 527 (D.C. Cir. 2018) (No. 17-5238).

296. *Zivotofsky v. Clinton*, 566 U.S. 189,197, 214 (2012).

**SELF-DRIVING CARS - THE FUTURE IS  
ALREADY IN TEXAS BUT THE LAWS ARE NOT:  
AN ANALYSIS OF POTENTIAL CHANGES TO  
STATUTORY AND COMMON LAWS WITH  
INTEGRATION OF COMPLETELY DRIVERLESS  
CARS IN THE LONE STAR STATE**

*Lindsay McNeil Contreras\**

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## I. INTRODUCTION

While watching the Jetsons during Saturday morning cartoons throughout the mid-eighties, a future with robot-operated cars seemed unfathomable.<sup>1</sup> Now it is 2020, and the future is here. Google launched a self-driving car project in 2009, now called Waymo, and is testing its completely automated vehicles in multiple locations in the United States, including Austin, Texas.<sup>2</sup> Ride share companies, such as Lyft and Uber, are currently testing out and collecting data for implementing driverless car technologies with their services.<sup>3</sup> Driverless cars are currently operational on the streets of California, Michigan, Paris, London, Singapore, and Beijing and are about to hit the streets of Texas.<sup>4</sup>

“Texas is one of [ten] places in the country chosen by the U.S. Department of Transportation as providing grounds where companies and public agencies can test automated technology for cars, trucks, and buses.”<sup>5</sup> During August of 2018, the City of Arlington entered into a year-long contract with Drive.ai, a Silicon Valley based technology company.<sup>6</sup> Beginning in October 2018, Drive.ai will provide autonomous passenger vans for use in the Arlington Entertainment District.<sup>7</sup> Arlington will be the first city in Texas with on-street autonomous vehicles available for use by the general public.<sup>8</sup> The services provided by Drive.ai will cost about \$435,000 and will be funded by a federal Congestion Mitigation Air Quality Improvement Grant.<sup>9</sup> Although this contract will likely create numerous benefits, with new technology comes additional responsibility and liability.

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1. See Matt Novak, *50 Years of the Jetsons: Why The Show Still Matters*, SMITHSONIAN MAG. (Sept. 19, 2012), <https://www.smithsonianmag.com/history/50-years-of-the-jetsons-why-the-show-still-matters-43459669/>.

2. See WAYMO, <https://waymo.com/tech/> (last visited Feb. 25, 2019).

3. See Daisuke Wakabayashi, *Lyft to Bring Driverless Car Tech to Broader Auto Industry*, N.Y. TIMES (Mar. 14, 2018), <https://www.nytimes.com/2018/03/14/technology/lyft-magna-driverless-cars.html>.

4. Benjamin Hastings, *Is the World Ready for Self-driving Cars?*, BITCOIN INSIDER (Nov. 25, 2018, 1:58 PM), <https://www.bitcoininsider.org/article/48853/world-ready-self-driving-cars>.

5. Melissa Repko, *Driverless Cars Are Coming to 'Innovative and Progressive' Arlington, and You Can Request One*, DALL. MORNING NEWS (Aug. 22, 2018, 11:21 AM), <https://www.dallasnews.com/business/technology/2018/08/22/arlington-youcan-soon-request-autonomous-vehicle-demand>.

6. *Id.*

7. *Id.*

8. *Id.* (stating there will be three vans holding up to three passengers at a time, and they will travel on public streets within certain portions of the city and travel up to 35 mph).

9. *Id.*

There have been several reports of car accidents involving driverless cars over the past three years.<sup>10</sup> The first death involving a semi-autonomous car occurred during 2016 when a Model S Tesla was in autopilot mode on the highway and the car's sensors purportedly failed to identify an eighteen wheeler driving in front of the car.<sup>11</sup> The Tesla drove straight into the eighteen wheeler and the driver perished.<sup>12</sup> Google revealed that one of its self-driving cars was rear-ended during testing.<sup>13</sup> Three Google employees suffered minor injuries as a result of the crash and the driver of the other vehicle reported neck and back pain.<sup>14</sup> During March 2018, a pedestrian was killed by one of Uber's self-driving vehicles when the car's technology failed to detect a pedestrian and hit a woman crossing the road outside of a crosswalk at night.<sup>15</sup> Although that vehicle had a human test driver, the police report revealed the test driver was watching Hulu at the time of the crash.<sup>16</sup>

Both human error and technology are significant causes of potential accidents involving cars equipped with autonomous vehicle technology.<sup>17</sup> Because the technology is still emerging, the law has some catching up to do to guarantee the safety of drivers both nationwide and in Texas.

This Article will examine the current state of regulation of Autonomous Vehicle Development (AVD) at both state and federal levels, analyze issues concerning liability, and make recommendations for the laws needed in Texas to effectively deal with regulating AVD and autonomous vehicles (AV or AVs). Part II will provide an overview of the importance of AVD and the role it will play in drivers' lives in the future. Part III will discuss the Federal Automated Vehicles Policy and broad regulatory strategies used in various states.

Further, this Article will analyze the current framework for AVs in Texas under Chapter 545 of the Texas Transportation Code. Part IV will comment on potential issues concerning liability when accidents occur in driverless vehicles, including applicable

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10. See generally Lulu Chang & Luke Dormehl, *6 Self-driving Car Crashes That Tapped the Brakes on the Autonomous Revolution*, DIGITAL TRENDS (June 22, 2018, 10:45 AM), <https://www.digitaltrends.com/cool-tech/most-significant-self-driving-car-crashes/> (detailing numerous accidents involving driverless automobiles).

11. *Id.*

12. *Id.*

13. Chang & Dormehl, *supra* note 10.

14. *Id.*

15. *Id.*

16. *Id.*

17. *Id.*

causes of action. Finally, Part V will make suggestions to improve the current laws in Texas, considering both that the law is still new and that the technology is still in developmental stages.

## II. IMPORTANCE OF AVD

According to the National Highway Traffic Safety Administration (NHTSA) fatal crash data, 37,806 lives were lost in car crashes in 2016.<sup>18</sup> Among these accidents, 94 to 96 percent were caused because of human error.<sup>19</sup> In 2015, 3,585 driving fatalities occurred on Texas roads.<sup>20</sup> Available AVD research shows that removing the human element from driving will reduce the number of accidents caused by human error.<sup>21</sup>

AVD technology is emerging at a rapid rate and will transform roads as we know them in many ways.<sup>22</sup> This transformation will yield numerous benefits as a result of technology taking the place of human decision-making. There will be fewer accidents resulting from texting and driving. The number of drivers driving under the influence will dramatically be reduced. There will be less traffic, creating a better quality of life by freeing up to fifty additional minutes a day per person.<sup>23</sup> A more systematic approach to driving will provide for fewer traffic jams because autonomous cars are more efficient and will cause fewer accidents than human error does.<sup>24</sup> Parking will be less of a concern because self-driving car services will dramatically reduce individual ownership of vehicles.<sup>25</sup> Finally, AVD will provide more independence to the portion of the population that is unable to drive due to disability or age.

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18. NAT'L HIGHWAY TRAFFIC SAFETY ADMIN., NATIONAL STATISTICS TRAFFIC SAFETY FACTS ANNUAL REPORT (2016), <https://cdan.nhtsa.gov/tsftables/tsfar.htm>.

19. Bruce Brown, *Evidence Stacks Up in Favor of Self-Driving Cars in 2016 NHTSA Fatality Report*, DIGITAL TRENDS (Oct. 6, 2017), <https://www.digitaltrends.com/cars/2016-nhtsa-fatality-report/>.

20. TEX. DEPT OF TRANSP., TEXAS MOTOR VEHICLE TRAFFIC CRASH FACTS CALENDAR YEAR 2015 1 (2015), [https://ftp.dot.state.tx.us/pub/txdot-info/trf/crash\\_statistics/2015/01.pdf](https://ftp.dot.state.tx.us/pub/txdot-info/trf/crash_statistics/2015/01.pdf).

21. Ismail Amin, *Autonomous Vehicles Legal Considerations of the New Human Driving Experience*, NEV. LAW., Oct. 2018 at 12, 12–13, [https://www.nvbar.org/wp-content/uploads/NevadaLawyer\\_Oct2018\\_Autonomous-Driving.pdf](https://www.nvbar.org/wp-content/uploads/NevadaLawyer_Oct2018_Autonomous-Driving.pdf).

22. See Abigail Bassett, *The Emergence of Driverless Cars*, ENCYCLOPEDIA BRITANNICA (Dec. 8, 2015), <https://www.britannica.com/topic/Emergence-of-Driverless-Cars-The-2045163/Driverless-Cars-of-the-Near-Future> (discussing multiple markets that AVD has impacted or created).

23. Amin, *supra* note 21, at 15.

24. *Id.*

25. JAMES M. ANDERSON ET AL., RAND CORP., AUTONOMOUS VEHICLE TECHNOLOGY: A GUIDE FOR POLICYMAKERS 5, 20–21 (2014), [https://www.rand.org/pubs/research\\_reports/RR443-2.html](https://www.rand.org/pubs/research_reports/RR443-2.html).

In addition to the benefits listed above, AVD will create business opportunities. It is projected that the AVD industry could be worth over \$60 billion in the next decade.<sup>26</sup> Goldman Sachs “project[s] that the worldwide ride-sharing market could grow eight-fold by the year 2030, reaching \$285 billion annually.”<sup>27</sup> Because AVD requires development of new technologies as well as innovations in manufacturing and marketing strategies, there will be rapid job growth in this niche business sector.

The benefits of this new technology are already being seen. Rideshare companies like Uber and Lyft are already testing driverless vehicles and plan to implement them in some cities to help with efficiency and revenue generation.<sup>28</sup> Texas companies and public agencies are getting in on the ground floor of this innovation and can now test automated technology for cars, trucks, and buses.<sup>29</sup> On August 22, 2018, the City of Arlington approved a one-year contract with Silicon Valley-based technology company Drive.ai for a fleet of three autonomous vans in its entertainment district.<sup>30</sup> With this contract, Arlington will be “the first Texas city with an on-street autonomous vehicle service open to the general public.”<sup>31</sup> The Arlington fleet will consist of vans that can hold up to three passengers.<sup>32</sup> These vans will have a limited service range but will be able to operate during high-traffic times and achieve speeds up to thirty-five miles per hour.<sup>33</sup> Ultimately, the one-year pilot program for this Arlington vehicle service “will cost about \$435,000” to implement, most of which will be paid by “a federal Congestion Mitigation Air Quality Improvement Grant.”<sup>34</sup>

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26. I. Wagner, *Size of the Global Autonomous Car Market 2018-2030*, STATISTA (Mar. 13, 2020), <https://www.statista.com/statistics/428692/projected-size-of-global-autonomous-vehicle-market-by-vehicle-type/>.

27. *Investors Fuel a Multibillion-dollar Ride-sharing Frenzy*, PHYS ORG (Oct. 29, 2017), <https://phys.org/news/2017-10-investors-fuel-multibillion-dollar-ride-sharing-frenzy.html>.

28. Steven McBride, *The Driverless Car Revolution Has Begun – Here’s How to Profit*, FORBES (Sept. 6, 2018, 10:08 AM), <https://www.forbes.com/sites/stephenmcbride1/2018/09/06/the-driverless-car-revolution-has-begun-heres-how-to-profit/#7e3c8ecf61cf>.

29. See Repko, *supra* note 5.

30. *Id.*

31. *Id.*

32. *Id.*

33. *Id.*

34. *Id.*

## III. CURRENT FEDERAL AND STATE STANDARDS FOR AVS

A. *Federal Standards*

In 1966, Congress passed the National Traffic and Motor Safety Act (Motor Safety Act).<sup>35</sup> The purpose of the Motor Safety Act is to “provide for a coordinated national safety program and establishment of safety standards for motor vehicles in interstate commerce to reduce accidents involving motor vehicles and to reduce the deaths and injuries occurring in such accidents.”<sup>36</sup> The Motor Safety Act gives the NHTSA the power to enact safety standards for motor vehicles through rulemaking.<sup>37</sup> The NHTSA mandates certain vehicle design features and enacts Federal Motor Vehicle Safety Standards that preempt state regulations.<sup>38</sup> The standards are binding on all manufacturers and importers of motor vehicles in the United States.<sup>39</sup> A manufacturer or distributor needs to certify that motor vehicles or equipment are compliant with NHTSA standards.<sup>40</sup> If a motor vehicle or piece of equipment fails to comply with NHTSA standards, the Motor Safety Act requires manufacturers to recall and repair the vehicle to achieve compliance at no cost to the owner of the vehicle.<sup>41</sup> On September 6, 2017, the House passed House Bill 3388, also known as the Safely Ensuring Lives Future Deployment and Research In Vehicle Evolution Act.<sup>42</sup> House Bill 3388 seeks to amend prior law by establishing the authority of the NHTSA over AVs to ensure their safety by encouraging testing of such vehicles.<sup>43</sup> As of September 7, 2017, House Bill 3388 is being considered by the Senate and has yet to be passed into law.<sup>44</sup> To date, the federal government has issued no new rules or regulations, and has only made non-binding recommendations to the states regarding self-driving vehicles.<sup>45</sup>

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35. National Traffic and Motor Safety Act of 1966, Pub. L. No. 89-563, 80 Stat. 718.

36. *Id.*

37. *Id.* § 119.

38. Daniel Hinkle, *Proceed with Caution*, TRIAL, Feb. 2018, at 28, 29.

39. 49 U.S.C. § 30112(a).

40. *Id.*

41. *Id.* § 30120(a).

42. H.R. 3388, 115th Cong. (2017). This act is also referred to as the SELF-DRIVE Act.

43. *Id.*

44. *Id.*

45. Ben Husch & Anne Teigen, *Regulating Autonomous Vehicles*, NAT'L CONF. OF ST. LEGIS. (Apr. 2017), <http://www.ncsl.org/research/transportation/regulating-autonomous-vehicles.aspx>.

The NHTSA researched and collected data on AVD for many years.<sup>46</sup> In 2013, after an increasing number of states sought guidance on promulgating legislation for testing, the NHTSA drafted a Preliminary Statement of Policy Concerning Automated Vehicles (the Preliminary Statement).<sup>47</sup> The NHTSA indicated that one purpose of the Preliminary Statement was to offer “recommendations to state drafters of legislation and regulations governing the licensing, testing, and operation of self-driving vehicles on public roads in order to encourage the safe development and implementation of automated vehicle technology, which holds the potential for significant long-term safety benefits.”<sup>48</sup> Additionally, the NHTSA set forth six levels of vehicle automation categories to give states guidance when drafting legislation related to testing automated vehicles.<sup>49</sup> The categories are as follows:

Level 0, No Automation: The human driver does all the driving.

Level 1, Driver Assistance: An advanced driver assistance system (ADAS), located within the vehicle, can sometimes assist the human driver with either steering or braking/accelerating, but not both simultaneously.

Level 2, Partial Automation: An ADAS system exists, through which the vehicle can itself actually control both steering and braking/accelerating simultaneously under some circumstances. The human driver must continue to pay full attention (monitoring the driving environment) at all times and perform the rest of the driving tasks.

Level 3, Conditional Automation: An Automated Driving System (ADS) within the vehicle can itself perform all aspects of the driving task under some circumstances. In those circumstances, the human driver must be ready to take back control at any time when the ADS requests the human driver to do so. In all other circumstances, the human driver performs the driving task.

Level 4, High Automation: An ADS system within the vehicle can perform all driving tasks itself and monitor the driving environment—essentially, do all the driving—

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46. NAT'L HIGHWAY TRAFFIC SAFETY ADMIN., PRELIMINARY STATEMENT OF POLICY CONCERNING AUTOMATED VEHICLES 5 (2013), [http://www.nhtsa.gov/staticfiles/rulemaking/pdf/Automated\\_Vehicles\\_Policy.pdf](http://www.nhtsa.gov/staticfiles/rulemaking/pdf/Automated_Vehicles_Policy.pdf).

47. *Id.* at 1.

48. *Id.* at 10.

49. See Amin, *supra* note 21, at 12.

in certain circumstances. The human need not pay attention in those circumstances.

Level 5, Full Automation: An ADS System within the vehicle can do all the driving in all circumstances. The human occupants are just passengers and need never be involved in driving.<sup>50</sup>

Additionally, the NHTSA made recommendations for state legislation for the testing phase of AVD in the Preliminary Statement including: (i) instituting licensing programs ensuring that authorized drivers can properly operate self-driving vehicles safely, (ii) safeguarding roads so that on-road testing of self-driving vehicles minimizes risks to other drivers, (iii) mandating testing of self-driving vehicles prior to allowing the vehicles onto public roads, (iv) limiting testing operations to the capabilities of the self-driving cars, and (v) establishing reporting requirements and monitoring performance of self-driving vehicles in the testing phase.<sup>51</sup>

The NHTSA also made recommendations regarding testing and data collection protocols for self-driving vehicles in the Preliminary Report.<sup>52</sup> These recommendations include: (i) ensuring that the transition from self-driving to driver control is quick and easy; (ii) verifying that test vehicles have the capabilities to detect, record, and inform the driver if the system malfunctions; (iii) ensuring that installation and operation of any self-driving vehicle technologies does not disable any federally required safety features or systems; and (iv) recording information about the status of the automated control technologies in the event of a crash or another safety event.<sup>53</sup>

Presently, because the NHTSA standards only contemplate vehicles with human drivers, these standards interfere with the abilities of manufacturers to produce fully automated driverless vehicles.<sup>54</sup> During 2016, the NHTSA updated its Preliminary Statement to encourage states to seek exemptions from existing

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50. *Id.* at 12–13.

51. *Id.* at 11–12.

52. *Id.* at 12–13.

53. *Id.* at 13–14.

54. See U.S. DEP'T OF TRANSP., PREPARING FOR THE FUTURE OF TRANSPORTATION: AUTOMATED VEHICLES 3.0 (Oct. 2018), <https://www.transportation.gov/sites/dot.gov/files/docs/policy-initiatives/automated-vehicles/320711/preparing-future-transportation-automated-vehicle-30.pdf> [hereinafter AUTOMATED VEHICLES 3.0] (indicating that the definitions of “driver” and “operator” will need to be interpreted to include an automated system).



standards in order to allow field tests of AVs to be conducted.<sup>55</sup> The NHTSA is currently considering rulemaking procedures to create exemptions from current standards which would make way for the rapidly emerging technologies required for AVD.<sup>56</sup> Specifically, the NHTSA is seeking comments prior to drafting a rule that will establish a pilot research program for the safe testing and development of emerging advanced AV safety technologies.<sup>57</sup> Further, the NHTSA is seeking comments on existing regulatory barriers to the certification and approval of automated driving systems.<sup>58</sup>

As part of its precursor announcement to NHTSA rulemaking, the U.S. Department of Transportation (USDOT) released a policy initiative titled “Automated 3.0 – Preparing for the Future of Transportation” (Automated 3.0) in October of 2018.<sup>59</sup> In Automated 3.0, the USDOT established a uniform federal approach to shaping policy for AVs by setting forth the following six principles.<sup>60</sup>

1. We will prioritize safety and identify/address potential safety risks.
2. We will remain technology neutral to achieve safety, mobility, and economic goals.
3. We will modernize regulations by eliminating outdated regulations impeding development or that do not address critical safety needs.
4. We will encourage a consistent regulatory and operational environment because conflicting State and local laws and regulations will introduce barriers to compliance challenges.
5. We will prepare proactively for automation by providing guidance, best practices, pilot programs, and other

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55. U.S. DEPT OF TRANSP., “DOT/NHTSA POLICY STATEMENT CONCERNING AUTOMATED VEHICLES” 2016 UPDATE TO “PRELIMINARY STATEMENT OF POLICY CONCERNING AUTOMATED VEHICLES” 1–2 (2016), <http://www.nhtsa.gov/staticfiles/rulemaking/pdf/Autonomous-Vehicles-Policy-Update-2016.pdf>.

56. U.S. DEPT OF TRANSP., REPORT ON DOT SIGNIFICANT RULEMAKINGS 77 (Feb. 2020), [https://www.transportation.gov/sites/dot.gov/files/2020-02/February%202020%20Sign\\_rulemaking%20report02072020r.pdf](https://www.transportation.gov/sites/dot.gov/files/2020-02/February%202020%20Sign_rulemaking%20report02072020r.pdf).

57. *See id.* at 76. The NHTSA gave advanced notice of a series of proposed rules related to regulations for AVD.

58. *See id.* at 77.

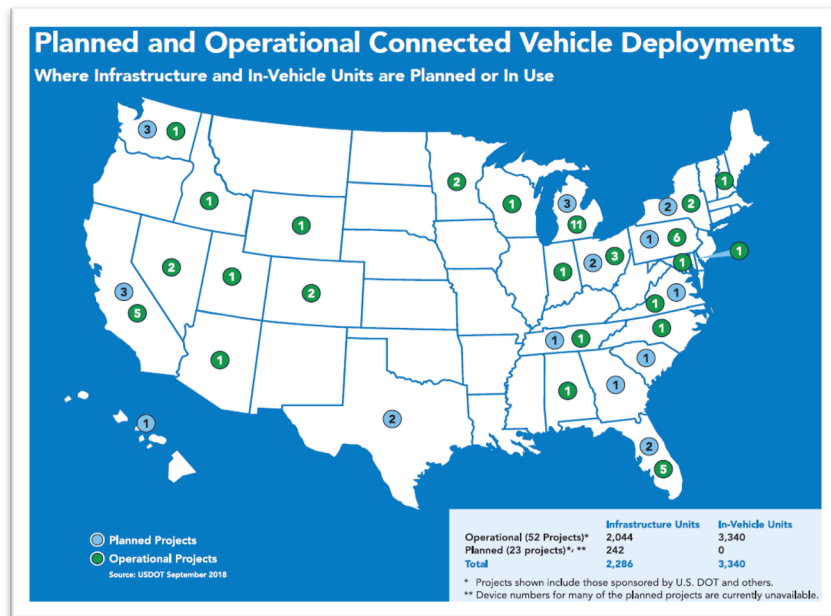
59. *See* AUTOMATED 3.0, *supra* note 54.

60. *Id.* at iv–v.

assistance to help facilitate a dynamic and automated future.

6. We will protect and enhance the freedoms enjoyed by Americans protecting the ability of consumers to make mobility choices that suit their needs.<sup>61</sup>

Further, Automated 3.0 Appendix C suggests an extensive collection of voluntary technical standards created for automation for identification, development, definition, and adoption by states.<sup>62</sup> Appendix C also identifies broad categories where standards may need to be adopted or amended including technology, functional standard, and safety.<sup>63</sup> The USDOT is planning to, or is currently sponsoring, projects throughout the United States for data collection, testing, and implementing cybersecurity measures.<sup>64</sup> Below is a map detailing current deployments.<sup>65</sup>



The future of AVD will require collaboration between many government agencies including the USDOT, Federal Highway Administration, Federal Motor Carrier Safety Administration, Federal Transit Administration, the NHTSA, as well as state and local law governments and law enforcement agencies. It will also require intense collaboration with the private sector including

61. *Id.*

62. *Id.* at 49.

63. *Id.* at 50.

64. *See id.* at ii–iii, 13–16.

65. *See* AUTOMATED 3.0, *supra* note 54, at 15.

distributors, manufacturers, and importers of cars nationwide. In the interim, most states have begun to put regulatory schemes in place to suit their needs for the researching and testing phase of AVD.

*B. Broad Regulatory Schemes – A Brief Survey of States*

Traditionally, states create traffic codes that set standards for driving, car insurance, maintenance and repair, and licensing to regulate vehicle safety.<sup>66</sup> Both state and municipal governments are addressing the potential impacts of self-driving vehicles on the road; however, states are largely uncertain of how best to deal with the new technology and have sparse regulations in their respective codes.<sup>67</sup> Few states have enacted comprehensive regulation, while others permit self-driving cars without any further regulation, have passed regulations for further study, or have bills allowing self-driving testing and regulation with need for further specification.<sup>68</sup> What follows is a brief survey of states possessing more comprehensive bodies of legislation related to self-driving cars.

1. Nevada

Nevada was the first state to authorize legislation governing AVs in 2011.<sup>69</sup> These regulations included extensive definitions, insurance or bonding requirements for testing in the amount of five million dollars, and a section exempting the original manufacturer of a motor vehicle from liability when a third person makes any modifications to a self-driving vehicle.<sup>70</sup> Nevada Revised Statutes Section 482A.200 makes a driver liable for any traffic violations committed while fully autonomous technology is enacted, except for those acts which “by their nature can have no application to such a system.”<sup>71</sup> Nevada does not differentiate between any of the levels of automation set forth by the NHTSA in its regulations.<sup>72</sup> The state also has licensing requirements for

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66. Brian A. Browne, *Self-Driving Cars: On the Road to A New Regulatory Era*, 8 CASE WESTERN RES. J. L., TECH. & INTERNET 1, 12 (2017).

67. See *Autonomous Vehicles: Self-Driving Vehicles Enacted Legislation*, NAT'L CONF. ST. LEGISLATURES (Feb. 18, 2020), <http://www.ncsl.org/research/transportation/autonomous-vehicles-self-driving-vehicles-enacted-legislation.aspx#enacted>.

68. See *id.*

69. *Id.*

70. NEV. REV. STAT. ANN. § 482A.010.

71. *Id.* § 482A.200.

72. *Id.* § 482A.010.

those testing AVs as drivers and for operating an autonomous technology certification facility.<sup>73</sup>

## 2. California

California requires that an AV may be operated on public roads during testing only when there is a traditionally licensed driver behind the wheel of the car who can take over immediate control of the car in the event of a malfunction or other emergency.<sup>74</sup> Similar to Nevada's requirements, prior to the start of testing the manufacturer completing the testing must obtain a surety bond or have proof of insurance in the amount of five million dollars.<sup>75</sup> Further, any testing manufacturer desiring to drive an AV on public roads must undergo an application process to certify that the vehicle meets certain specifications. The specifications include the following: (1) the AV has a mechanism to engage or disengage the autonomous technology that is accessible to the operator, (2) there is a visual indicator when the technology is engaged, (3) the vehicle has system safety alerts when the technology is engaged or fails to engage, (4) there is a means for the operator to take control if the technology fails by multiple methods, (5) the operator is able to take control of the vehicle, and (6) the AV must be able to come to a complete stop.<sup>76</sup>

## 3. Florida

Within the definitions of its motor vehicle code, Florida added a definition for AV, which contemplates completely autonomous technology.<sup>77</sup> The definition excludes vehicles enabled with active safety systems or driver-assisted systems.<sup>78</sup> A person must possess a valid driver's license in order to operate an AV on public roads

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73. *Id.* §§ 482A.110, 140. North Carolina is the only state that passed a statute specifying that "the operator of a fully autonomous vehicle with the automated driving system engages is not required to be licensed to operate a motor vehicle." N.C. GEN. STAT. § 20.401(a).

74. CAL. VEH. CODE § 38750(b). Notwithstanding this provision, California also authorized the Contra Costa Transportation Authority to conduct pilot testing of autonomous vehicles and collect data under § 38755 as part of California's Intelligent Transportation Systems Program and its collaboration with the private sector, namely AAA and Toyota. Skip Descant, *Contra Costa County Partners with AAA to Boost AV Development*, GOV'T TECH. (Nov. 1, 2017), <http://www.govtech.com/fs/automation/Contra-Costa-County-Partners-with-AAA-to-Boost-AV-Development.html>.

75. *Id.* § 38750(b)(3).

76. *Id.*; see also *id.* § 38750(c)(1)(A)–(D).

77. FLA. STAT. § 316.003(3) (2019).

78. *Id.* To be clear, semi-autonomous vehicles are excluded from Florida's definition of autonomous vehicle.

in-state.<sup>79</sup> Florida also has an exemption from liability for manufacturer provision when a third party converts a vehicle to an AV, providing a defense unless the alleged defect was present in the vehicle as originally manufactured.<sup>80</sup>

#### 4. Michigan

Similar to Florida and California, Michigan has a liability provision exempting a manufacturer from liability when another person makes a modification to the AV without the manufacturer's consent.<sup>81</sup> The provision also indicates that it is not intended to supplant any contractual agreements between the user and manufacturer.<sup>82</sup> When it comes to insurance, Michigan requires that any manufacturer performing research or testing submit proof of "satisfactory" insurance to the Michigan Secretary of State although no minimum amount of insurance is specified.<sup>83</sup> Michigan also requires that manufacturers must ensure certain circumstances exist when researching or testing operation on a highway or street which include: (1) that the vehicle only be operated by an employee, contractor, or person otherwise designated by the manufacturer;<sup>84</sup> (2) that the authorized driver can monitor the vehicle's performance in operation and can take control of the car promptly, or, if the vehicle cannot be controlled, it is capable of achieving minimal risk condition;<sup>85</sup> and (3) that the person monitoring the vehicle is licensed to operate a car in the United States.<sup>86</sup> A person in violation of this section may be subject to a fine.<sup>87</sup>

Interestingly, Michigan, home of many automotive manufacturing companies like General Motors, Chevrolet, Chrysler, and Daimler-Benz, passed legislation mandating the governor appoint an eleven-person committee to represent the

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79. *Id.* § 316.85(1).

80. *Id.* § 316.86.

81. MICH. COMP. LAWS § 257.665a.

82. *Id.*

83. *Id.* § 257.665(1).

84. *Id.* § 257.665(2)(a) (explaining also that university researchers or employees of the Michigan Department of Transportation are exempted from this requirement).

85. Minimal risk condition means "[a] low-risk operating condition that an automated driving system automatically resorts to either when a system fails or when the human driver fails to respond appropriately to a request to take over the dynamic driving task." U.S. DEP'T. OF TRANSP., FEDERAL AUTOMATED VEHICLES POLICY 85 (Sept. 2016), <https://www.transportation.gov/sites/dot.gov/files/docs/AV%20policy%20guidance%20PDF.pdf>.

86. § 257.665(2)(a)–(c).

87. *Id.* § 257.907(2).

interests of local government, business, policy, research, and technology. This committee is tasked with making recommendations for changes in state policy regarding driverless technology in order to ensure that the state remains at the forefront of innovation.<sup>88</sup> The committee includes an insurance representative, two state senators, two state representatives, the secretary of state, the director of state transportation,<sup>89</sup> the director of the department of state police, the director of insurance and financial services, the director of the department of technology, and one or more persons to serve as chairperson of the commission.<sup>90</sup>

### 5. Washington, D.C.

AVs are permitted to operate on a public roadways in Washington, D.C. as long as the vehicle has a manual override feature allowing the driver to assume control of the vehicle, a driver is seated in the control seat of the vehicle and ready to take control at any moment, and the AV is capable of operating in compliance with D.C.'s applicable traffic and motor vehicle laws.<sup>91</sup> D.C. has a liability provision exempting the manufacturer from liability when a third party converts a vehicle if either the models are from 2009 or later or the vehicles are built within four years of conversion.<sup>92</sup> Under Section 50-2354 of D.C.'s Official Code, the Mayor is in charge of promulgating rules establishing procedures for registering, titling, and issuing permits to operate AVs within D.C.<sup>93</sup>

### 6. Colorado

Colorado is the only state with a safe harbor provision within its code regarding AVD and AVs.<sup>94</sup> A person may use and AV if the automated system powering the car complies with every state and federal law that applies to the function the system is operating.<sup>95</sup> If the AV cannot comply with every state and federal law, a person may not test the AV system unless approved by the Colorado State

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88. *Id.* § 257.665(6).

89. *Id.* The directors of the respective state agencies may appoint designees to the committee in lieu of serving.

90. *Id.* § 257.665(6)(a)-(i).

91. D.C. CODE § 50-2352.

92. *Id.* § 50-2353.

93. *Id.* § 50-2354.

94. *See* COLO. REV. STAT. § 42-4-242.

95. *Id.* § 42-4-242(1). As noted earlier in this Article, the Federal government has yet to enact any formal rules aside from general guidelines related to AVs.

Patrol and the Colorado Department of Transportation.<sup>96</sup> Colorado authorizes police officers to impound or immobilize vehicles in violation of this safe harbor section.<sup>97</sup> Beginning in 2018, the state mandates that the Department of Transportation report to the transportation legislation review committee by September 1 of each year concerning testing.<sup>98</sup> Finally, the provision states that liability for a crash involving an automated driving system not under human control is determined in accordance with the applicable state statutes, federal statutes, and common law.<sup>99</sup> Since the law on liability concerning AVs is practically brand new,<sup>100</sup> the types of torts or claims that will arise related to crashes involving AVs are yet to be determined.

### C. *Texas Standards*

Currently there are no regulations in Texas specific to testing and researching AVs. Under Texas law, definitions are provided for “automated driving system,” “automated motor vehicle,” and “entire dynamic driving task.”<sup>101</sup> When an automated driving system is installed on a motor vehicle, “the owner of the [automated driving system] is considered the operator of the automated motor vehicle solely for the purpose of assessing compliance with applicable traffic or motor vehicle laws, regardless of whether the person is physically present in the vehicle.”<sup>102</sup> Under the statute, “the automated driving system is considered to be licensed to operate the vehicle.”<sup>103</sup> AVs may operate in Texas regardless of whether or not there is a human operator in the vehicle while autonomous technology is activated.<sup>104</sup> An AV may not operate on a public highway in Texas unless: (1) the AV is compliant with traffic and motor vehicle laws of Texas, (2) the AV is equipped with a recording device collecting data on vehicle performance, (3) the AV is compliant with federal law and motor safety standards, (4) the vehicle is registered and titled in accordance with the laws of Texas, and (5) the AV has liability coverage or self-insurance as required by the State of

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96. *Id.* § 42-4-242(3)(a).

97. *Id.* § 42-4-242(3)(b).

98. *Id.* § 42-4-242(4).

99. *Id.* § 42-4-242(5).

100. Amin, *supra* note 21, at 13.

101. TEX. TRANSP. CODE ANN. § 545.451. “Entire dynamic driving task” refers to the operational and tactical aspects of operating a vehicle.

102. *Id.* § 545.453.

103. *Id.* § 545.453(a)(2).

104. *See id.* § 545.454(a).

Texas.<sup>105</sup> In the event of a car accident, the owner of the AV must comply with normal duties following an accident in Texas prescribed under Chapter 550 of the Texas Transportation Code.<sup>106</sup> For example:

(a) The operator of a vehicle involved in an accident that results or is reasonably likely to result in injury to or death of a person shall:

(1) immediately stop the vehicle at the scene of the accident or as close to the scene as possible;

(2) immediately return to the scene of the accident if the vehicle is not stopped at the scene of the accident;

(3) immediately determine whether a person is involved in the accident, and if a person is involved in the accident, whether that person requires aid; and

(4) remain at the scene of the accident until the operator complies with the requirements of Section 550.023.<sup>107</sup>

Section 550.023 imposes a duty on the operator of a vehicle involved in an accident to provide contact and insurance information.<sup>108</sup> Further, the operator must show a driver's license upon request and provide reasonable assistance to the injured in the form of transporting or deciding to transport the injured to a physician or hospital for treatment if it is apparent treatment is necessary or requested by the injured.<sup>109</sup>

While the owner is thought to be the one fulfilling the obligations under Chapter 550, this does not comport with the fact that AVs can operate in Texas without any driver at all. The provisions of Chapter 550 have technology implications that will shape AVD and technologies needed to comply with the law in Texas.<sup>110</sup> For example, the AV may need to place an emergency call to the owner in the event of the accident, so he or she may provide

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105. *See id.* § 545.454(b)(1)–(5).

106. *Id.* § 550.021(a)(1)–(4).

107. *Id.*

108. *See id.* § 550.023(1).

109. *Id.* § 550.023.

110. *See generally id.* § 550.021 (describing the requirement to stop at the scene of the accident involving personal injury or death, determine whether a person is involved in the accident and whether that person requires aid); § 550.022 (describing the requirement to stop at the scene of the accident involving damage to a vehicle, remain at the scene until “operator complies with the requirements of Section 550.023”, and move vehicle to “designated accident investigation” if applicable); § 550.025 (describing the requirement that the operator must take reasonable steps to notify the owner or person in charge of structure, fixture, or highway landscape); § 550.026 (describing the requirement that the operator of a vehicle must immediately report accident to the proper authorities).



contact and insurance information to the injured.<sup>111</sup> Alternatively, the AV could provide this information on a screen inside the vehicle.<sup>112</sup> However, if this screen is damaged or the technology fails, the AV will not comply with the statute.

AV technology in Texas will need to overcome the difficulty with technology being unable to assess how and when to render aid. This could be done by automatically initiating a 911 call when an accident occurs so a human may report to the scene to fulfill this responsibility under the law. Alternatively, a camera may stream live footage of the accident to an emergency response entity so that an assessment may be made on whether aid is needed.

Since the current law is sparse, there will be several legal issues that will need to be addressed by courts under the common law. The next section will analyze potential causes of action which may develop resulting from the infiltration of AV technology in society, or how current causes of action may apply.

#### IV. DISCUSSION OF LIABILITY ISSUES RELATED TO DEVELOPMENT OF AV TECHNOLOGY AND ACCIDENTS OCCURRING WHEN AV TECHNOLOGY IS IMPLEMENTED

##### A. *The Trolley Problem and AV*

Ethical scholars have struggled with the moral implications of artificial intelligence. Although much of the conversation in this discipline revolves around massive data collection resulting in privacy issues, AVs themselves create many ethical and moral implications.<sup>113</sup> Self-driving cars are “a real-life enactment of a moral conundrum known as the Trolley Problem.”<sup>114</sup> The problem has many iterations, but the basic set-up is this: you are driving on a trolley track when the brakes fail.<sup>115</sup> The trolley is quickly

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111. See *id.* § 550.023.

112. See, e.g., Saif Ali Bepari, *What’s Trending in the Automotive Display Market?* ELECTRONIC DESIGN (May 1, 2019), <https://www.electronicdesign.com/markets/automotive/article/21807933/whats-trending-in-the-automotive-display-market> (explaining that car displays are gaining popularity as “an ideal interface for disseminating crucial information”).

113. See generally Cameron F. Kerry, *Protecting Privacy in an AI-driven World*, BROOKINGS (Feb. 10, 2020), <https://www.brookings.edu/research/protecting-privacy-in-an-ai-driven-world/> (“As artificial intelligence evolves, it magnifies the ability to use personal information in ways that can intrude on privacy interests by raising analysis of personal information to new levels of power and speed.”).

114. Olivia Goldhill, *Philosophers Are Building Ethical Algorithms to Help Control Self-driving Cars*, QUARTZ (Feb. 11, 2018), <https://qz.com/1204395/self-driving-cars-trolley-problem-philosophers-are-building-ethical-algorithms-to-solve-the-problem/>.

115. See, e.g., Lauren Cassani Davis, *Would You Pull the Trolley Switch? Does it Matter?*, ATLANTIC (Oct. 9, 2015),

heading towards five people, certain to cause their death. The driver can pull a lever to divert the trolley to an alternative track where only one person will die. The heart of the moral dilemma lies within whether it is acceptable to *intentionally* kill one to save the lives of five people.

Pedestrian fatalities will be inevitable even if self-driving technology works flawlessly. In one article, attorney Jim Jordan discussed how “self-driving technology will transform large segments of auto liability law and the automobile insurance industry.”<sup>116</sup> He poses the following hypothetical to demonstrate.

It is 11:00 p.m. on New Year’s Eve. You are in a car on a busy city street, lined on the right side with multiple restaurants. You watch from the car’s window as pedestrians move in waves from the restaurants to the sidewalks, jockeying for space to watch the annual countdown to midnight, which a local radio personality hosts in a park across the street. Despite the pedestrian crowds, traffic is moving smoothly, and you are only minutes from the restaurant where you will meet your friends. But then a flash of light hits your face as a pickup truck veers into your lane, speeding directly toward your car. Options flash through your mind: veer left and slam into oncoming traffic; stay in your lane and brace for a head-on impact with the pickup; veer right onto the sidewalk, where you will likely be safe, but your car will mow down a dozen pedestrians. But here is the rub: None of these choices are yours, because you are not driving. In fact, your car has no driver.<sup>117</sup>

Under this scenario, Jordan poses the following consequences.

The fates of you, the wrong-way driver, the other oncoming drivers and passengers and the pedestrians on the sidewalk were sealed two years earlier, when the autonomous fleet car left the factory. Its software includes decision rules guiding its artificial intelligence in its determination of how to prioritize the factors presented by the emergency you now face.<sup>118</sup>

Philosophy professor Nicholas Evans is working alongside another philosopher and engineer to write algorithms to be used

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<https://www.theatlantic.com/technology/archive/2015/10/trolley-problem-history-psychology-morality-driverless-cars/409732/>.

116. Jim Jordan, *Who’s Liable for a Crash When It’s the Car Driving?*, LAW360 (Apr. 10, 2018 12:23 PM), <https://www.law360.com/articles/1031489/who-s-liable-for-a-crash-when-it-s-the-car-driving->.

117. *Id.*

118. *Id.*

in driverless cars based upon various ethical theories.<sup>119</sup> His team will assign mathematical formulas to moral value systems like utilitarianism, which states that all lives have equal weight, versus a separate system expressing the duty to protect one's self even if it puts others at risk.<sup>120</sup> While Evans is not currently assisting companies in manufacturing autonomous cars, he aspires to engage in this collaboration once he formulates his algorithms.<sup>121</sup>

Once the sale of AVs becomes more mainstream, manufacturers should have a duty to disclose decision algorithms to consumers. These decisions have grave consequences if the AV is presented with an emergency situation. This may result in amendments to the Texas Deceptive Trade Practices Act.

### *B. DTPA Violations in Texas*

The Deceptive Trade Practices Act (DTPA) was passed in Texas to protect consumers from false, misleading, or deceptive trade business practices.<sup>122</sup> The elements for a cause of action for violation of the DTPA include: (1) the plaintiff is a consumer; (2) the defendant can be sued under the DTPA and engaged in false, misleading, or deceptive acts; and (3) the acts were a producing cause of the plaintiff's damages.<sup>123</sup> Under the Texas Business and Commerce Code Section 17.46(b), there is a laundry list of enumerated false, misleading, or deceptive acts and practices.<sup>124</sup> One of the enumerated acts is "failing to disclose information concerning goods or services which [were] known at the time of the transaction if such failure to disclose such information was intended to induce the customer into a transaction into which the consumer would not have entered had the information been disclosed."<sup>125</sup> Under Jordan's hypothetical presented earlier, this would involve a lawsuit if a rideshare company fails to disclose its algorithm truthfully or comprehensively to users, inducing the consumer to use a rideshare service he or she might not otherwise have used if the algorithm was disclosed. This becomes even more problematic when a purchasing or non-purchasing passenger experiences injuries caused by "defects" in the automobile.

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119. See Goldhill, *supra* note 114.

120. *Id.*

121. *Id.*

122. TEX. BUS. & COM. CODE ANN. §17.44(a).

123. Doe v. Boys Clubs of Greater Dall., Inc., 907 S.W.2d 472, 478 (Tex. 1995).

124. § 17.46(b)(1)–(33).

125. *Id.* § 17.46(b)(24).

### 1. Standing

The first hurdle to being able to file a claim for a rideshare company's failure to disclose the algorithm would be to show that a passenger in a rideshare car is a "consumer." The DTPA defines a consumer as an individual who seeks or acquires a good or service by purchase or lease, excluding a business consumer who has assets in excess of \$25 million.<sup>126</sup> Under Texas Law, "[a] plaintiff establishes her standing as a consumer in terms of her relationship to a transaction, not by a contractual relationship with the defendant."<sup>127</sup> Despite this seemingly broad definition, at least one Texas appellate court has held that a passenger in a car who has no relation to the sales transaction may not be the consumer of the services under the DTPA.<sup>128</sup>

In *Rodriguez*, an injured passenger filed a DTPA claim against the seller of the car when the car's radiator exploded, despite the fact that his girlfriend's mother had purchased the car.<sup>129</sup> The court held that the plaintiff failed to meet the requirements necessary to achieve consumer status.<sup>130</sup> The court reasoned that, since the car was purchased by the plaintiff's girlfriend's mother for the girlfriend's use, the plaintiff was "not a consumer under the DTPA."<sup>131</sup>

Under state law, it is likely that actual purchasers of rideshare rides will be characterized as consumers under the DTPA since consumer status is dependent upon a relationship to the transaction. Even though an individual is not a purchaser of the vehicle causing damage itself, the passenger can establish standing as a consumer through the purchase of the rideshare services.<sup>132</sup> Additionally, there is some case law to support a finding that an additional non-purchaser rider will be able to prove standing as a consumer. Under the DTPA, a plaintiff may acquire goods or services that have been purchased by *another* for the plaintiff's benefit.<sup>133</sup> The Supreme Court of Texas held that an employee who was covered by a group insurance policy was a consumer under the DTPA because he acquired the goods or

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126. *Id.* § 17.45(4).

127. *Birchfield v. Texarkana Mem'l Hosp.*, 747 S.W.2d 361, 368 (Tex. 1987).

128. *Rodriguez v. Ed Hicks Imports*, 767 S.W.2d 187, 191 (Tex. App. 1989).

129. *Id.* at 189.

130. *Id.* at 191.

131. *Id.*

132. *See, e.g., Birchfield*, 747 S.W.2d at 368 (illustrating that *Birchfield* "establishe[d] her standing as a consumer" under DTPA because she received health care services from Wadely).

133. *Lara v. Lile*, 828 S.W.2d 536, 541 (Tex. App. 1992).

services of the insurer despite the fact that the insurance policy was purchased by his employer.<sup>134</sup> Likewise, a non-purchasing passenger in a rideshare car obtains the benefit of the purchased transportation even though it was purchased by another. Overall, a purchasing or non-purchasing passenger will probably be able to show standing under the Texas DTPA.

In the above scenario, it is likely that the rideshare service would be the target defendant for the claim. To be actionable under the DTPA, the defendant's deceptive act or practice must have been committed in connection with the plaintiff's transaction in purchasing goods or services.<sup>135</sup> The plaintiff must show that its transaction was connected with the defendant through (1) a representation by the defendant that reached the plaintiff or (2) a benefit from the plaintiff's transaction that reached the defendant.<sup>136</sup> Here, there is a direct benefit to the rideshare company through a monetary transaction when a rideshare passenger makes a purchase. However, whether liability should extend to a manufacturer is questionable.

The DTPA is not applicable to upstream manufacturers or suppliers when their misrepresentation is not communicated to the consumer.<sup>137</sup> However, when a manufacturer's marketing efforts reach the consumer and form the basis for the plaintiff's decision to purchase the product, a manufacturer can be found liable.<sup>138</sup> In *Church & Dwight Co., Inc. v. Huey*, a user of paint remover sued the product manufacturer.<sup>139</sup> The court held that a manufacturer could be sued even if it only manufactures a component part of a completed product.<sup>140</sup> Under *Church*, if the marketing efforts of the seller are incorporated into the product and serve as the basis for purchase, the manufacturer will be held liable.<sup>141</sup> The court further analogized to *United States Pipe & Foundry Co. v. City of Waco*.<sup>142</sup> In this case, "the [C]ity of Waco hired an independent contractor to install a water pipeline. When the pipes failed, the city sued both the contractor and the manufacturer."<sup>143</sup> The court found that the manufacturer could be

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134. Kennedy v. Sale, 689 S.W.2d 890, 891–92 (Tex. 1985).

135. Amstadt v. U.S. Brass Corp., 919 S.W.2d 644, 649 (Tex. 1996).

136. Todd v. Perry Homes, 156 S.W.3d 919, 922 (Tex. App. 2005) (citing Amstadt, 919 S.W.2d at 649–50); Marshall v. Kusch, 84 S.W.3d 781, 786 (Tex. App. 2002).

137. Amstadt, 919 S.W.2d at 649.

138. Church & Dwight Co. v. Huey, 961 S.W.2d 560, 565 (Tex. App. 1997).

139. *Id.* at 563.

140. *Id.* at 565.

141. *Id.*

142. *Id.* at 566.

143. *Id.*

held liable because of representations it made to the city as to the quality and fitness of the pipes.<sup>144</sup> The court reasoned that having benefited from the sale of those pipes, the manufacturer could not avoid the burdens of the transaction.<sup>145</sup>

At this time, it is not clear if AV manufacturers will become targets of DTPA suits. This will largely be dependent upon how rideshare services will advertise driverless technology and what types of disclosures will be made to consumers. It is clear, however, that under *Church*, a manufacturer will not avoid the burdens of a transaction if it reaps the benefits.

## 2. False, Misleading, or Deceptive Acts or Practices

Among the laundry list of enumerated offenses, the only one to likely apply under Jordan's hypothetical is the act listed under Section 17.46(b)(24) of the Texas Business and Commercial Code. It states that failing to disclose information about goods or services at the time of a transaction is a violation of the DTPA if the withheld information would have caused the consumer to change her mind if she had known about it.<sup>146</sup> The bar for failure to disclose under Texas law is not very high. The Texas Supreme Court has held that a car dealership failing to disclose that a plaintiff would receive a base model car instead of the promised premium model was a violation of the DTPA.<sup>147</sup> Further, the Texas Court of Appeals has also held that a car dealership failing to disclose the financing status to a consumer in order to induce him into buying a car is evidence of a deceptive practice.<sup>148</sup>

As stated earlier, it is unclear what types of disclosures rideshare companies or manufacturers will make regarding algorithms to consumers. Under the law, it is arguable that these disclosures should be made so consumers may make informed choices on the purchase of their cars. When it comes to life or death, the courts would likely recognize that purchasers may refuse to use a certain rideshare or buy a certain model if they disagree with the vehicle's particular moral algorithm. Consumers should have a choice when it comes to ethical dilemmas; this decision should not be left solely up to manufacturers.

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144. *Church & Dwight Co. v. Huey*, 961 S.W.2d 560, 566 (Tex. App. 1997).

145. *Id.*

146. TEX. BUS. & COM. CODE ANN. § 17.46(b)(24).

147. *Tony Gullo Motors v. Chapa*, 212 S.W.3d 299, 305 (Tex. 2006).

148. *Bossier Chrysler-Dodge II, Inc. v. Riley*, 221 S.W.3d 749, 757 (Tex. App. 2007).

*C. Doctrine of Informed Consent and Applicability to Algorithms*

Medical providers have a duty to obtain informed consent from patients prior to engaging in risky medical procedures.<sup>149</sup> The Texas Medical Liability Act sets forth the elements for health care liability claims only.<sup>150</sup> Informed-consent claims are “based on the failure of the physician or health care provider to disclose or adequately disclose the risks and hazards involved in the medical care or surgical procedure rendered by the physician or health care provider.”<sup>151</sup> An adequate disclosure requires that the doctor must inform the patient of any negative consequences even when a procedure is performed properly.<sup>152</sup> Informed consent is both a legal and ethical principle and it is believed that informed consent is tied to a doctor’s standard of care owed to a patient.<sup>153</sup>

Although this legal concept does not extend to consumer purchases, there are several scenarios in which artificial intelligence must choose between killing others or self-preservation. Manufacturers under these scenarios owe a duty to fully inform consumers and allow them to make the choice.<sup>154</sup> This can only be ensured with mandatory informed consent.

Based on the legal doctrine of informed consent, there could be a tort for failure to adequately disclose decision making algorithms to consumers.<sup>155</sup> A decision of such consequence should not be left to the manufacturer alone and consumers have a right to know what type of execution their AV will make if presented with an emergency. An example of this would be making a choice between running into another vehicle versus a troop of cyclists in the bike line adjacent to the AV.

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149. See *Benge v. Williams*, 472 S.W.3d 684, 707 (Tex. App. 2014), *aff’d*, 548 S.W.3d 466 (Tex. 2018).

150. *Id.* (citing TEX. CIV. PRAC. & REM. CODE ANN. § 74.101).

151. TEX. CIV. PRAC. & REM. CODE ANN. § 74.101.

152. See *Benge*, 472 S.W.3d at 708.

153. See generally *Moore v. Regents of University of California*, 51 Cal. 3d. 120 (1990) (illustrating that a breach of informed consent is generally considered a breach of the physician’s fiduciary duties).

154. RYAN JENKINS, NEW AM., AUTONOMOUS VEHICLES ETHICS & LAW: TOWARD AN OVERLAPPING CONSENSUS 15–16 (2016), <https://na-production.s3.amazonaws.com/documents/AV-Ethics-Law.pdf>.

155. *Id.* at 9, 15.

#### *D. Accidents and Deaths Involving AVs*

The following sections will contemplate the potential parties who will need to seek recovery in the events of deaths or injuries resulting from accidents involving AVs.

##### 1. Living Family Members Seeking Compensation for Deceased Loved Ones Killed by an AV

This subsection will examine the cause of action for wrongful death in Texas and how it will be impacted by AVs. The elements for a wrongful death action are: (1) the plaintiff is a statutory beneficiary of the defendant, (2) the defendant is a person or corporation, (3) the defendant's wrongful act caused the death of the decedent, (4) the decedent would have been entitled to bring forth an action for injury if she had survived, and (5) the plaintiff suffered an actual injury.<sup>156</sup> This analysis will focus upon the "wrongful act" element since it is likely the other elements would be satisfied in a cause of action against the rideshare company and/or driver filed by a deceased pedestrian's beneficiaries.

##### a. Wrongful Acts, an Element of Wrongful Death Claims

A defendant can be held liable for a decedent's death if the decedent's death was caused by the defendant's wrongful act.<sup>157</sup> Liability in wrongful death cases is established by proving the elements of either negligence, an intentional tort, premises liability, or products liability.<sup>158</sup> The Texas Wrongful Death Act specifies acts for which certain defendants may be liable.<sup>159</sup>

AVs present an interesting dilemma because an accident may occur even though the technology of the AV executes its algorithm perfectly. Driverless vehicles can identify risks on roads more quickly than humans.<sup>160</sup> There is no way to prove negligence because the artificial intelligence is operating at a standard higher than a human.<sup>161</sup>

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156. TEX. CIV. PRAC. & REM. CODE ANN. §§ 71.001–71.004.

157. See *id.* § 71.002(b). The wrongful act can be the result of either negligence or carelessness.

158. See *LMB, Ltd. v. Moreno*, 201 S.W.3d 686, 687 (Tex. 2006).

159. See TEX. CIV. PRAC. & REM. CODE ANN. §71.002 (West 2019).

160. Tim Menke, *Self-Driving Cars: The Technology, Risks and Possibilities*, HARV. SCI. NEWS (Aug. 28, 2017), <http://sitn.hms.harvard.edu/flash/2017/self-driving-cars-technology-risks-possibilities/>.

161. See *LMB, Ltd. v. Moreno*, 201 S.W.3d 686, 688 (Tex. 2006).



Scholars argue that machines incorporating artificial intelligence should be held strictly liable.<sup>162</sup> Several vehicle manufacturers have indicated that they will accept full responsibility for any accidents their AVs cause; however, this is not actually required under the law.<sup>163</sup> Conventional software that is sold off the shelf without any customization is considered a product by the courts and falls under the Uniform Commercial Code.<sup>164</sup> Defects in product design, manufacturing, or warnings that cause property damage or personal injury are subject to strict liability.<sup>165</sup> The product versus service distinction can be used by a court to determine whether artificial intelligence in AVs should be held to a strict liability standard. However, a strict liability standard will undoubtedly have a chilling effect on this rapidly emerging area of technology and could discourage manufacturers from investing in AVs.

One scholar argues that “where a supplier can show that an autonomous computer, robot, or machine is safer than a reasonable person, the supplier should be liable in negligence rather than strict liability.”<sup>166</sup> This would enable AV technology creators to avoid any chilling effect that strict liability would have on development.<sup>167</sup> However, it could become a costly endeavor to identify and have expert witnesses testify that artificial intelligence is safer than a reasonably prudent person since no person is involved in the accident.<sup>168</sup> Jurors may also be apprehensive to concede that automated robotic technology is “safer” than the functioning human brain which is influenced by moral considerations in this type of scenario. Evidence and testimony of this type has a unique impact upon the common law “reasonably prudent person” standard.

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162. See Ben Taylor, *Who's Liable for Decisions AI and Robotics Make?*, BETANEWS (Mar. 21, 2017), <https://betanews.com/2017/03/21/artificial-intelligence-robotics-liability/>.

163. *Id.*

164. Jeffrey Jones et al., *Mitigating Product Liability for Artificial Intelligence*, JD SUPRA (Mar. 23, 2018), <https://www.jdsupra.com/legalnews/mitigating-product-liability-for-77795/>.

165. *Id.*

166. Ryan Abbott, *The Reasonable Computer: Disrupting the Paradigm of Tort Liability*, 86 GEO. WASH. L. REV. 1 (2018).

167. See *id.* at 4 (“[Strict liability] discourages automation, because machines incur greater liability than people. It also means that in cases where automation will improve safety, the current framework to prevent accidents now has the opposite effect.”).

168. See *id.* at 27–28.

## 2. Willful Misconduct

Willful misconduct in Texas has been defined as engaging in gross negligence.<sup>169</sup> Gross negligence requires evidence showing specific intent by the defendant to cause substantial injury to the plaintiff.<sup>170</sup> Absent evidence of foul play by the manufacturer, it is unlikely that the plaintiff will be able to make a showing of specific intent when killed by an AV since the required *mens rea* contemplates a human mind and not artificial intelligence.

Overall, it will be difficult to show any negligence whatsoever based upon Jordan's hypothetical, leaving family members without recourse for any action for wrongful death.

## 3. A Passenger is Injured During Impact While Riding Inside an AV – Potential Liability Issues

### a. Rideshare Companies and Common Carrier Status

If a passenger is injured in an accident caused by an autonomously driven vehicle that is owned and operated by a rideshare company, the passenger will want to bring a claim against the rideshare company for negligence. To prove a claim for negligence, the plaintiff must prove: (1) a legal duty is owed to the plaintiff by the defendant, (2) the duty was breached, and (3) any resulting damages to the plaintiff were proximately caused by the breach.<sup>171</sup> A successful claim for negligence will hinge upon whether the rideshare company owes a duty to its passengers to keep them safe and whether any resulting damages were proximately caused by the rideshare company itself or by the company manufacturing the autonomous technology driving the vehicle.

Texas courts have defined a common carrier as “those in the *business* of carrying passengers and goods who hold themselves out for hire by the public.”<sup>172</sup> Further, Texas courts have held that common carriers who transport passengers owe their passengers a higher duty of care than just ordinary prudence.<sup>173</sup> The degree of

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169. *Marshall Indep. Sch. Dist. v. U.S. Gypsum Co.*, 790 F. Supp. 1291, 1300–01 (E.D. Tex. 1992).

170. *IP Petroleum Co. v. Wevanco Energy, L.L.C.*, 116 S.W.3d 888, 898 (Tex. App. 2003).

171. *IHS Cedars Treatment Ctr. of DeSoto, Tex., Inc. v. Mason*, 143 S.W.3d 794, 798 (Tex. 2004).

172. *Mount Pleasant Indep. Sch. Dist. v. Estate of Lindburg*, 766 S.W.2d 208, 213 (Tex. 1989).

173. *See Speed Boat Leasing, Inc. v. Elmer*, 124 S.W.3d 210, 211 (Tex. 2003).

care owed to passengers of common carriers is defined as a standard of care “exercised by a very cautious and prudent person under the same or similar circumstances.”<sup>174</sup> There is an underlying rationale that passengers of common carriers should feel safe while traveling.<sup>175</sup>

Texas courts have yet to hold that a rideshare service is a common carrier, likely due to the lack of case law on AVD. Generally, rideshare companies assert that they are only coordinating transportation and not providing actual driving services.<sup>176</sup> To support this, rideshare companies like Uber emphasize the fact that their drivers are independent contractors and not employees.<sup>177</sup> Courts in multiple jurisdictions have agreed that Uber drivers are independent contractors and not employees for various purposes.<sup>178</sup>

California courts have held that highway common carriers cannot escape liability by hiring independent contractors to transport goods over public highways.<sup>179</sup> The courts reasoned that, in order to protect the public from irresponsible contractors and strengthen safety regulations, a common carrier cannot delegate its duties to escape liability.<sup>180</sup> In Texas, the Legislature restricts the ability of common carriers to limit their common law liability by contract.<sup>181</sup> Although the case law in Texas is currently lacking, it is possible that in the future, regardless of whether rideshare companies are held to be common carriers, rideshare companies will not be able to delegate their liability to independent contractors who “operate” the vehicles or to artificial intelligence operating cars.<sup>182</sup>

Arbitration clauses may prevent a potential plaintiff from achieving traditional justice for negligence claims involving AVs. For example, Uber has a mandatory arbitration provision for all

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174. *Dall. Ry. & Terminal Co. v. Travis*, 78 S.W.2d 941, 942 (Tex. 1935); *see also* ST. BAR OF TEX., TEXAS PATTERN JURY CHARGES 34 (2014).

175. *See* *Amarillo v. Tutor*, 267 S.W. 697, 698 (Tex. 1924).

176. *United States Terms of Use*, UBER, <https://www.uber.com/legal/terms/us/> (last modified Mar. 17, 2020) [hereinafter *Uber Terms of Use*]; *see also* *Lyft Terms of Service*, LYFT, <https://www.lyft.com/terms> (last updated Nov. 27, 2019).

177. *See* *McGillis v. Dep’t of Econ. Opportunity*, 210 So. 3d 220, 221 (Fla. Dist. Ct. App. 2017).

178. *See id.* at 225–26; *see also* NLRB, ADV.13-CA-163062, ADVICE MEMORANDUM (2019) (taking the position that Uber drivers are independent contractors).

179. *Serna v. Petty Leach Trucking, Inc.*, 2 Cal. Rptr. 3d 835, 839 (Cal. Ct. App. 2003).

180. *See id.*

181. TEX. TRANSP. CODE ANN. § 5.001.

182. In this scenario, although a human driver is not required to oversee driverless technology, this would contemplate a liability scenario with a human driver behind the wheel monitoring the ride.

claims filed against the company that passengers agree to when they download the Uber app.<sup>183</sup> These arbitration clauses have been deemed enforceable by courts in multiple jurisdictions.<sup>184</sup> Arbitration is extremely expensive, panels do not have to abide by binding precedent, and there is a pay to play element among repeat players who are selected for panels routinely.<sup>185</sup> If you hurt your back because of an accident involving AV technology, it is more and more probable that you will be forced to arbitrate your claim instead of seeking a remedy within the traditional court system.

#### b. Unavoidable Accident Doctrine

An “unavoidable accident”, a defense to negligence in Texas, is an event which is proximately caused by an unforeseeable non-human condition.<sup>186</sup> To receive an unavoidable accident jury instruction, the defendant needs to put forth evidence showing that it was possible the accident did not result from the fault of any parties to the litigation.<sup>187</sup> Defense lawyers may use this doctrine to pin the accident on technology since the technology itself is not a party to the litigation or suable entity.

#### 4. Products Liability – The AV Executed Its Technology Perfectly but a Harm Still Occurred

Section 402A of the Restatement (Second) of Torts governs strict liability products claims in Texas.<sup>188</sup> Strict liability contemplates liability for defective products without any fault of the manufacturer and regardless of whether there is privity between the injured party and the manufacturer.<sup>189</sup> Under 402A, anyone who sells a product in a defective condition which is unreasonably dangerous to the user or consumer is subject to strict liability for physical harm caused to the user or consumer if (1) the seller is engaged in the business of selling the specific product at issue and (2) the product reaches the user or consumer without a substantial change in condition.<sup>190</sup> An item can be “unreasonably dangerous” due to defects in marketing, design, or

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183. See *Uber Terms of Use*, *supra* note 176.

184. See, e.g., *O'Connor v. Uber Tech.*, 904 F.3d 1087, 1090, 1095 (9th Cir. 2018).

185. R. Clayton Allen, *Arbitration: Advantages and Disadvantages*, ALLEN, ALLEN, ALLEN & ALLEN, <https://www.allenandallen.com/arbitration-advantages-and-disadvantages/> (last visited Mar. 27, 2020).

186. *Hill v. Winn Dixie Tex., Inc.*, 849 S.W.2d 802, 803 (Tex. 1992).

187. *Id.*

188. *Firestone Steel Prods. Co. v. Barajas*, 927 S.W.2d 608, 613 (Tex. 1996).

189. RESTATEMENT (SECOND) OF TORTS § 402A(1) (AM. LAW INST. 1965).

190. *Am. Tobacco Co. v. Grinnell*, 951 S.W.2d 420, 426 (Tex. 1997).

manufacturing.<sup>191</sup> It is easy to conceive of the large increase of lawsuits that will arise once more AVs are on roadways because of defects in technology.

Products liability suits, including cases involving automobile accidents, have resulted in large multimillion-dollar awards.<sup>192</sup> There was a string of litigation known as the “Sudden Acceleration Litigation” caused by a malfunction in the software of Toyota cars. This malfunction caused the cars to accelerate unintentionally, causing multiple car accidents.<sup>193</sup> This litigation resulted in a \$1.2 billion payout by Toyota to purchasers.<sup>194</sup> Although the volume of products liability suits related to AVs are virtually non-existent, sizable litigation awards related to products liability suits and auto accidents with partially automated cars could ultimately have a chilling effect on the manufacture of AVs. Manufacturers are thus incentivized to create safer products to avoid future lawsuits and liability resulting from products liability suits.

#### V. RECOMMENDATIONS FOR AV LAWS IN TEXAS TO ENSURE THE SAFETY OF TEXANS

The Texas Legislature meets every other year, leading to criticism of the body of statutory law in the state.<sup>195</sup> With rapidly emerging AV technology, it will be difficult for the legislature to keep up with technological innovations. However, one of the ways that AV technology could be regulated is at the municipal level through zoning. The legislature in Texas gives authority to localities to enact municipal zoning ordinances.<sup>196</sup> These zoning

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191. *Id.*

192. See generally *Jury Verdict Roundup: Top 10 Product Liability Cases Submitted in 2016*, LEXISNEXIS (2016), <https://www.lexisnexis.com/jvsubmission/b/adjudication/archive/2017/03/06/jury-verdict-roundup-top-10-product-liability-verdicts-of-2016.aspx> (illustrating the existence of several multimillion-dollar product liability awards in 2016); *MacPherson v. Buick Motor Co.*, 217 N.Y. 382 (1916); see also *Henningsen v. Bloomfield Motors, Inc.*, 32 N.J. 358 (1960).

193. See *In re Toyota Motor Corp. Unintended Acceleration Marketing, Sales Practices, and Products Liability Litigation*, 754 F.Supp.2d 1145 (C.D. Cal. 2010).

194. Phillip Reed, *For Toyota Owners: Unintended Acceleration Lawsuit Settlement*, EDMUNDS (Apr. 6, 2015), <https://www.edmunds.com/car-safety/for-toyota-owners-unintended-acceleration-lawsuit-settlement.html>.

195. Johnathan Silver, *Pro-con: Should Texas Legislature Be in Session Year-round?*, VICTORIA ADVOC. (May. 31, 2015), [https://www.victoriaadvocate.com/news/business/pro-con-should-texas-legislature-be-in-session-year-round/article\\_7c9be3cc-55c1-53cf-8a4b-f26826bace4b.html](https://www.victoriaadvocate.com/news/business/pro-con-should-texas-legislature-be-in-session-year-round/article_7c9be3cc-55c1-53cf-8a4b-f26826bace4b.html).

196. STEWART E. STERK ET AL., *LAND USE REGULATION* 1–3 (2nd ed. 2016).

ordinances establish specific zones and allowable uses in the respective zones.<sup>197</sup>

One way to regulate AVs is to enact zoning laws specific to the use of AVs. Chandler, Arizona has been one of the first municipalities to achieve this type of regulation.<sup>198</sup> In 2018, the city enacted ordinances reducing the number of parking spaces required in certain zones because of the heavy reliance on rideshare services and innovation of AVs.<sup>199</sup> In lieu of parking spaces, Chandler also enacted an ordinance mandating passenger drop-off spaces for land zoned as commercial, general office, industrial, institutional and medical, and multi-family use.<sup>200</sup> Below is a chart from the ordinance detailing the mandatory loading zones per square footage.<sup>201</sup>

Commercial	1 loading zone space per 50,000 sq. ft.
General Office	1 loading zone space per 100,000 sq. ft.
Industrial	1 loading zone space per 200,000 sq. ft.
Institutional and Medical	1 loading zone space per 50,000 sq. ft.
Multiple Family	1 loading zone space per 150 units

By incorporating these types of regulations, Chandler is using city planning to account for traffic flow and anticipating the reduction in necessary concrete parking spaces.<sup>202</sup> There is also an underlying policy ensuring that roads are safer.<sup>203</sup> Ultimately, reducing the number of parking spaces will free up valuable land for noncommercial and commercial buildings in Chandler.<sup>204</sup> Although cities in Texas have AVs on its roads, no municipality in Texas has enacted any zoning regulations related to the use of AVs.

Another way that Texas can draw AV technology to its borders is to mandate high insurance coverage for entities testing

197. *Id.*

198. *Chandler First in the Nation to Include Autonomous Vehicles and Ride Sharing in Zoning Code*, CHANDLER, ARIZ. (Apr. 27, 2018), <https://www.chandleraz.gov/news-center/chandler-first-nation-include-autonomous-vehicles-and-ride-sharing-zoning-code>.

199. CHANDLER, ARIZ. MUN. CODE § 35-1808(1), [https://library.municode.com/az/chandler/codes/code\\_of\\_ordinances?nodeId=PTVIPL\\_CH35LAUSZO\\_ARTXVIIIIPALORE\\_35-1808PALOZO](https://library.municode.com/az/chandler/codes/code_of_ordinances?nodeId=PTVIPL_CH35LAUSZO_ARTXVIIIIPALORE_35-1808PALOZO).

200. *Id.* § 35-1808(2).

201. *Id.*

202. *Id.* § 35-1807(1).

203. *Id.* § 35-1800(4)–(5).

204. Paul Maryniak, *Chandler, Az., May Be the First City to Adjust Zoning Laws for AVs*, EAST VALLEY TRIB. (May 9, 2018), <http://www.govtech.com/fs/infrastructure/Chandler-Ariz-May-Be-the-First-City-to-Adjust-Zoning-Laws-for-AVs.html>.

and operating AVs. Texas needs to follow other states mentioned earlier in this article and require mandatory bonds of at least 5 million dollars, if not more.<sup>205</sup> Further, AVs will completely undermine the current rating system used by insurance companies to underwrite insurance policies. Traditionally, insurance companies assess drivers by factoring in a person's age, number of years licensed, driving experience, number of accidents, and any criminal convictions.<sup>206</sup> The rating system is also subject to state laws and regulations.<sup>207</sup> Other insurance companies offer usage-based insurance.<sup>208</sup> The rate is calculated based upon where the vehicle is driven and focuses more on how it is used instead of individual drivers.<sup>209</sup> The usage-based system requires collection of metrics and data to calculate insurance risks.<sup>210</sup>

Another issue entirely arises when state insurance regulations fail to address insuring AVs. This is the case in Texas. At a minimum, Texas is going to have to update its insurance code to account for less driver focused insurance schemes.

## VI. CONCLUSION

There is a plethora of legal issues arising each day because of the innovation of AVs. The "future" is now here and the popularity of rideshare service is abundantly apparent. Since rideshare companies are planning on utilizing AVs more frequently, there will inevitably be a rise in legal claims related to the new technology. However, a reduction in the number of individuals owning cars will undoubtedly have a positive impact upon the environment, our day to day, and life as we all know it. Although it will be interesting to see how future liability claims play out, updated legislation to match with technological innovations is certainly a necessity that cannot be ignored.

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205. NEV. REV. STAT. ANN. § 482A.060.

206. Sandee Perfetto & Andrew Blancher, *The Road Ahead for Autonomous Cars and Auto Insurance*, INS. J. (May 17, 2018), <https://www.insurancejournal.com/news/national/2018/05/17/489282.htm>.

207. *Id.*

208. *Id.*

209. *Id.*

210. *Id.*

THE HOTEL NEXT DOOR  
 WHY SHORT-TERM RENTALS SHOULD BE  
 CONSIDERED A COMMERCIAL USE OF  
 PROPERTY IN TEXAS

*By Cortnee H. Sabio\**

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## I. INTRODUCTION

The right of individuals to use their land as they wish is one of the most fundamental of all property rights.<sup>1</sup> Thus, covenants that restrict the private use of land are often disfavored by Texas courts.<sup>2</sup> One could argue, however, that the lay people of Texas do not share this disfavor. Throughout the state, thousands of Texans flock to master-planned communities each year.<sup>3</sup> In addition to private pools and massive floor plans, most of these communities also come with restrictive covenants that limit the property to “residential-use only.”<sup>4</sup> Although these provisos typically vary in their degree of specificity, they often share a common purpose—to prevent non-residential, “commercial use” of the property by the owner.<sup>5</sup>

These land use restrictions have become increasingly at odds with the aspirations of entrepreneurial homeowners. Over the last ten years, the growth of sites like Airbnb, Homeaway and FlipKey have allowed homeowners to monetize their properties for short-term rental use.<sup>6</sup> Of the three sites previously mentioned, Airbnb is the most popular, boasting more than five million listings in 191 countries.<sup>7</sup>

The tension between residential and commercial use is an increasingly litigated subject in Texas. Given the rise of websites like Airbnb and HomeAway, courts have seen an influx of homeowners from master-planned communities fighting for the right to rent their properties as vacation homes.<sup>8</sup> In May of 2018,

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1. See *Tarr v. Timberwood Park Owners Ass'n*, 556 S.W.3d 274, 280 (Tex. 2018), *reh'g denied* (citing David A. Johnson, *One Step Forward, Two Steps Back: Construction of Restrictive Covenants After the Implementation of Section 202.003 of the Texas Property Code*, 32 TEX. TECH L. REV. 355, 356 (2001)).

2. See *id.* (citing *Davis v. Huey*, 620 S.W.2d 561, 565 (Tex. 1981)).

3. Sean Barry, *RCLCO: TX led master-planned communities in 2016*, CONSTRUCTIONDIVE (Jan. 4, 2017), <https://www.constructiondive.com/news/rcoco-tx-led-in-master-planned-communities-in-2016/433317/>.

4. Judon Fambrough & Cindy Dickson, *Governing Property Use: Living with Deed Restrictions*, TIERRA GRANDE, no. 410, 1983, at 1 (revised Sept. 2013).

5. *Id.*

6. *Careers at Airbnb*, AIRBNB, <https://careers.airbnb.com/positions/2067983/> (last visited Apr. 19, 2019) (“Airbnb uniquely leverages technology to economically empower millions of people around the world to unlock and monetize their spaces, passions and talents to become hospitality entrepreneurs.”).

7. See *id.*

8. See generally Emma Platoff, *Texas Supreme Court Sides with Short-Term Renters, Likely Bolstering State's Fight Against Austin's Ordinance*, TEX. TRIB. (May 25, 2018, 11:00 AM), <https://www.texastribune.org/2018/05/25/airbnb-homeaway-texas->

the Texas Supreme Court finally sided with these homeowners. In *Tarr v. Timberwood*, the court held that absent an explicit prohibition in the deed restriction, use of a property for short-term rentals is a residential use.<sup>9</sup> The court went on to hold that these types of short-term rentals do not violate restrictive covenants that prohibit general “commercial use” when the phrase is undefined.<sup>10</sup> A rehearing was denied in October of 2018.<sup>11</sup>

In addition to increased litigation, the rise of short-term rentals has also impacted the Texas Tax Code. In 2015, the Texas Legislature amended the tax code to define short-term rentals as hotels.<sup>12</sup> This change allowed both state and local municipalities to collect hotel occupancy taxes from short-term rental owners.<sup>13</sup> The comptroller’s office estimates that these collections have increased revenues by over \$10 million per year.<sup>14</sup> In 2017, the Texas State Comptroller’s Office partnered with Airbnb to collect occupancy taxes on behalf of homeowners directly and remit them to the state.<sup>15</sup> This partnership has increased tax revenues by over \$15 million since April 2017.<sup>16</sup> All revenues support tourism.<sup>17</sup>

This comment will address the conflict between the *Tarr* court’s holding, stating that the plaintiff’s use of a single-family home for short-term rentals is not “commercial,”<sup>18</sup> and the Texas Legislature’s decision to classify these same rental properties as

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supreme-court-ken-paxton-austin-ordinance/ (suggesting that there as been a rise in litigation within the state of Texas regarding restrictions on short-term rentals).

9. See *Tarr v. Timberwood Park Owners Ass’n*, 556 S.W.3d 274, 291-92 (Tex. 2018), *reh’g denied*.

10. *Id.* at 291–92.

11. See *id.* at 274.

12. TEX. TAX CODE ANN. § 156.001(b) (“For purposes of the imposition of a hotel occupancy tax under this chapter, Chapter 351 or 352, or other law, ‘hotel’ includes a short-term rental.”).

13. *Hotel Occupancy Tax FAQs*, TEX. COMPTROLLER’S OFF., <https://comptroller.texas.gov/taxes/hotel/> (last visited Jan. 27, 2019).

14. See Sabriya Rice, *Airbnb Collected \$15.3 Million in Hotel Taxes from Texas Guests*, DALL. MORNING NEWS (June 13, 2018, 12:34 PM), <https://www.dallasnews.com/business/hotels/2018/06/13/airbnb-collected-153-million-hotel-taxes-texas-guests>.

15. See Paul Takahasi, *Airbnb Guests to be Charged Hotel Occupancy Tax in Houston*, HOUS. BUS. JOUR. (Apr. 12, 2017, 11:39 AM), <https://www.bizjournals.com/houston/news/2017/04/12/airbnb-guests-to-be-charged-hotel-occupancy-tax-in.html>.

16. Rice, *supra* note 14.

17. TEX. TAX CODE ANN. § 351.101(a) (“Revenue from the municipal hotel occupancy tax may be used only to promote tourism and the convention and hotel industry . . .”).

18. See *Tarr v. Timberwood Park Owners Ass’n*, 556 S.W.3d 274, 291-92 (Tex. 2018), *reh’g denied*.

hotels.<sup>19</sup> Quite notably, the court references Tarr's payment of hotel occupancy taxes to both the state and Bexar County but does not address this implicit contradiction.<sup>20</sup> Instead, the court states that, absent clear language to the contrary, a property owner has not breached a residential-use covenant if a short-term rental is being used by the occupant for "living purposes."<sup>21</sup> Given, however, that Texas both defines and taxes short-term rental properties as hotels,<sup>22</sup> and hotels are generally considered a commercial use of property,<sup>23</sup> leasing a property for short-term rental should be considered a commercial use in Texas.

Part II of this comment will address the background of short-term rental litigation in Texas, including how Texas state courts have resolved the ambiguity surrounding "residential-use" covenants in the past. It will also address the various tax code changes and how other states have approached the issue of short-term rentals. Part III will discuss the arguments for why a short-term rental should be considered a commercial use of property in Texas, including: (1) short-term rentals drive interstate commerce and tourism; (2) the occupants of short-term rentals use the property like customers, not homeowners; (3) short-term rentals can be easily distinguished from long-term rentals; and (4) short-term rentals compete directly with traditional hotels. Part IV will analyze how this decision will impact major Texas cities like Houston.

## II. BACKGROUND OF SHORT-TERM RENTAL LITIGATION IN TEXAS, CHANGES IN THE TEXAS APPROACH

The last twenty years have seen a radical shift in how Texas courts interpret the meaning of phrases like "single family residential use" and "residential use only." Prior to the year 2000, there were very few cases of Texas property owners arguing that their residential-use covenants allow short-term rentals.

The first major case to explore short-term rentals in the context of residential deed restrictions was *Benard v. Humble*.<sup>24</sup> In *Benard*, the appellants argued that they were not in violation of

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19. TEX. TAX CODE ANN. § 156.001(b) ("For purposes of the imposition of a hotel occupancy tax under this chapter, Chapter 351 or 352, or other law, 'hotel' includes a short-term rental.").

20. *Tarr*, 556 S.W.3d at 288.

21. *Id.* at 286.

22. TEX. TAX CODE ANN. § 156.001(b).

23. *See, e.g.*, *Heart of Atlanta Motel, Inc. v. United States*, 379 U.S. 241, 261 (1964).

24. 990 S.W.2d 929 (Tex. App.—Beaumont 1999, pet. denied), *disapproved of by Tarr*, 556 S.W.3d at 291.

their restrictive covenant because the term “residential purposes” does not exclude weekly rentals.<sup>25</sup> The court disagreed,<sup>26</sup> concluding that the appellant’s perspective was “overbroad” and a short-term rental is “for retreat purposes, or transient housing, rather than for residential purposes.”<sup>27</sup> Although the appellate court admitted that the term “residential” was difficult to define, it seemed satisfied with the trial court’s effort to resolve the ambiguity using the residency requirements outlined in other Texas statutes.<sup>28</sup>

The significance of *Benard*, apart from the holding itself, is that the court openly acknowledged the tension between the Texas Property Code (which states that restrictive covenants should be construed liberally in a way that gives effect to the drafter’s intent),<sup>29</sup> and common law (which, in the case of real estate contracts, requires strict construction against the party try to enforce the provision).<sup>30</sup> As the court astutely points out, renting one’s home should not be considered a per se violation of a restrictive covenant.<sup>31</sup> However, the court also noted that giving effect to the phrase “residential purposes” necessarily means that there must be some types of rentals that can violate the provision.<sup>32</sup>

After *Benard*, there was a lull in short-term rental litigation. This changed dramatically in 2017, which saw a flurry of cases that would eventually serve as the precursor to the Texas Supreme Court’s decision in *Tarr*. In each case, the court rejected *Benard*, holding that in cases of ambiguous deed restrictions, short-term rentals did not violate residential-use provisions.<sup>33</sup> The court in

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25. *Id.* at 931.

26. *Id.*

27. *Id.*

28. *Id.* at 931–32 (noting that the trial court judge looked to both the residency requirements in the Texas Family Code and the voter registration residency requirements in the Texas Election Code).

29. TEX. PROP. CODE ANN. § 202.003(a) (“A restrictive covenant shall be liberally construed to give effect to its purposes and intent.”).

30. *Benard v. Humble*, 990 S.W.2d 929, 930 (Tex. App.—Beaumont 1999, pet. denied) (“For example, our Texas Supreme Court has stated: ‘Restrictive clauses in instruments concerning real estate must be construed strictly, favoring the grantee and against the grantor, and all doubt should be resolved in favor of the free and unrestrictive use of the premises.’”) (citation omitted).

31. *Id.* at 931.

32. *Id.*

33. *See Garrett v. Sympton*, 523 S.W.3d 862, 868 (Tex. App.—Fort Worth 2017, pet. denied) (“The Garretts’ short-term rentals of the Property thus do not violate the Restriction prohibiting commercial use.”); *Boatner v. Reitz*, No. 03-16-00817-CV, 2017 WL 3902614, at \*6 (Tex. App.—Austin Aug. 22, 2017, no pet.). *But see Ridgepoint Rentals, LLC v. McGrath*, No. 09-16-00393-CV, 2017 WL 6062290, at \*9 (Tex. App.—Beaumont Dec. 7,

*Garret v. Sympton* went even further, rejecting the use of other Texas statutes to guide its interpretation of the word “residential.”<sup>34</sup>

This sudden increase in litigation can likely be attributed to the meteoric rise of companies like Airbnb, which help homeowners—specifically single-family homeowners—connect with travelers who are looking to rent homes for a few days or weeks. In 2017, Airbnb was valued at roughly \$31 billion,<sup>35</sup> with the average Airbnb “host” (homeowner) earning an average of over \$900 a month in 2017 and the most successful hosts making over \$20,000.<sup>36</sup>

These sorts of attractive figures ultimately led to the dispute in *Tarr v. Timberwood*. In *Tarr*, the plaintiff Kenneth Tarr relocated to Houston and decided to lease his San Antonio property to short-term renters instead of committing to a standard year-long lease.<sup>37</sup> In 2014, he formed a separate company to manage the property and leased his home for approximately 102 days.<sup>38</sup> He also paid hotel taxes to both the state of Texas directly and Bexar county.<sup>39</sup>

Later that year, Tarr’s homeowners association informed him that his property was in violation of two deed restrictions.<sup>40</sup> The association argued that because the leases were temporary, Tarr breached both the “residential purpose covenant” and the “single-family-residence covenant.”<sup>41</sup> The residential purpose covenant specifically provided that all lots in Timberwood Park “shall be

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2017, pet. filed) (holding that, because the deed restrictions explicitly prohibit hotels, and that a short-term rental is a hotel under the Texas Tax Code, the homeowners were in violation).

34. *Garrett*, 523 S.W.3d at 867–68 (“Although Appellees invite us to utilize the [Supreme Court’s] two-part definition of ‘residence,’ [requiring both physical presence and an intention to remain] we decline to do so because the Restrictions here do not limit the Property’s use to merely a residence but rather to ‘residence purposes.’”) (emphasis in original).

35. Laurence Thomas, *Airbnb Just Closed a \$1 Billion Round and Became Profitable in 2016*, CNBC, <https://www.cnbc.com/2017/03/09/airbnb-closes-1-billion-round-31-billion-valuation-profitable.html> (last updated Mar. 9, 2017, 2:42 PM).

36. Stacey Leasca, *Here’s How Much the Average Airbnb Host Earns in a Month*, TRAVEL + LEISURE (June 16, 2017), <https://www.travelandleisure.com/travel-tips/how-much-airbnb-hosts-make>.

37. See *Tarr v. Timberwood Park Owners Ass’n*, 556 S.W.3d 274, 276 (Tex. 2018), *reh’g denied*.

38. *Id.*

39. *Id.* at 277.

40. *Id.*

41. *Id.*

used solely for residential purposes,” except the tracts that were designated “for business purposes.”<sup>42</sup>

Tarr ignored the association’s multiple warning letters and instead sued for a declaratory judgment.<sup>43</sup> He sought a declaration that “the deed restrictions [did] not impose a minimum duration on occupancy or leasing” and that Timberwood Park could not “police home-rental advertisements or impose penalties in the form of fines.”<sup>44</sup>

The trial court granted summary judgment against Tarr and permanently enjoined him from “engaging in short-term rentals” and from “operating a business on his residential lot.”<sup>45</sup> The court reasoned that the “use of a home is not residential unless the occupant is physically present and has an existing intent to physically remain there for a sufficient duration.”<sup>46</sup> The Fourth Court of Appeals affirmed, noting that the deed restrictions at issue were “unambiguous” and that “the rule disfavoring restrictions on the free use of property did not apply.”<sup>47</sup> Given Tarr’s payment of hotel taxes and that Tarr had created a separate company to manage the short-term rentals, the court determined that Tarr’s use of the property failed the residential purpose test.<sup>48</sup>

The Texas Supreme Court sided with Tarr despite these lower court rulings.<sup>49</sup> After noting the potential conflict between strict and liberal construction, the court states that:

We have not yet deliberated section 202.003(a)’s effect, if any, on the construction principles we have long employed to interpret restrictive covenants. Nor do we reach that decision today. We don’t have to reconcile any potential conflict between section 202.003(a) and the common-law principles—or whether those common-law standards can ever again be appropriately employed—because our conclusion today would be the same regardless of which interpretative standard prevails. As explained below, the covenants at issue unambiguously fail to address the property use complained of in this case. No construction, no matter how liberal, can construe a property restriction

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42. *Id.*

43. *Tarr v. Timberwood Park Owners Ass’n*, 556 S.W.3d 274, 277 (Tex. 2018), *reh’g denied*.

44. *Id.*

45. *Id.* at 278.

46. *Id.*

47. *Id.*

48. *Id.*

49. *Tarr v. Timberwood Park Owners Ass’n*, 556 S.W.3d 274, 292 (Tex. 2018), *reh’g denied*.

into existence when the covenant is silent as to that limitation.<sup>50</sup>

The court further states that Tarr's deed restrictions are silent as to short-term rentals.<sup>51</sup> *Benard* states that the court should not "impose an intent or physical-presence requirement when the covenant's language includes no such specification and remains otherwise silent as to durational requirements."<sup>52</sup> According to the court, "no matter how short-lived, neither [the tenants'] on-property use nor Tarr's off-property use violates the restrictive covenants in the Timberwood deeds."<sup>53</sup>

#### A. Texas Tax Code Changes for Short-Term Rentals

As the *Tarr* court mentioned, short-term rental properties are classified as hotels in Texas. For many years, the definition of the word "hotel" was very narrow, and primarily focused on traditional hotels, motels, and inns.<sup>54</sup> In 2015, however, the Texas Legislature amended the Texas Tax Code to include the following language:

For purposes of the imposition of a hotel occupancy tax under this chapter, Chapter 351 or 352, or other law, "hotel" includes a short-term rental. In this subsection, "short-term rental" means the rental of all or part of a residential property to a person who is not a permanent resident under Section 156.101.<sup>55</sup>

The code goes on to define a permanent resident as anyone "who has the right to use or possess a room in a hotel for at least 30 consecutive days, so long as there is no interruption of payment for the period."<sup>56</sup> Thus, a short-term rental is any property that rents rooms for consideration for less than thirty consecutive days.<sup>57</sup>

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50. *Id.* at 284–85.

51. *Id.* at 290 ("The covenants in the Timberwood deeds fail to address leasing, use as a vacation home, short-term rentals, minimum-occupancy durations, or the like. They do not require owner occupancy or occupancy by a tenant who uses the home as his domicile.")

52. *Id.* at 291.

53. *Id.*

54. See TEX. TAX CODE ANN. § 156.001 ("In this chapter, 'hotel' means a building in which members of the public obtain sleeping accommodations for consideration. The term includes a hotel, motel, tourist home, tourist house, tourist court, lodging house, inn, or rooming house, or bed and breakfast.")

55. § 156.001(b).

56. § 156.101.

57. See 34 TEX. ADMIN. CODE § 3.161(b)(6) (expanding on when the permanent resident exemption applies).

In addition to expanding the definition of a hotel, the Texas Tax Code also creates a mandatory, six percent state hotel occupancy tax that is separate from local hotel taxes that can be levied by cities and some counties in Texas.<sup>58</sup> According to the statute, short-term rental property owners are required to submit this state hotel tax payment directly to the Comptroller's office each month.<sup>59</sup> Airbnb, however, changed this.

In 2017, Airbnb partnered with the Texas Comptroller's Office to collect hotel taxes on behalf of its host properties and remit them directly to the state.<sup>60</sup> This allowed the company to become a major driving force behind tax reform in Texas. In addition to opening a new revenue stream for Texas homeowners, Airbnb has also streamlined the occupancy tax collection process, easing the burden on property owners who had difficulty paying the required taxes directly.<sup>61</sup> Texas joined more than thirty other states who chose to partner with Airbnb that same year.<sup>62</sup> According to reports, nearly ten percent of the revenue collected from the state hotel tax goes to support the economic development and tourism office.<sup>63</sup> All local hotel taxes collected must go to supporting tourism projects.<sup>64</sup>

This agreement with Airbnb has proven to be extremely successful for the Texas state treasury. After only one year, tax revenue collected nearly doubled the \$8 million per year revenue expectations.<sup>65</sup> As of June 2018, the agreement had generated more than \$15 million in hotel occupancy taxes.<sup>66</sup> The Texas Comptroller, Glen Hagar, praised the agreement, stating that "[t]he sharing economy plays an important role in our state's overall fiscal health."<sup>67</sup> He also stated that he hoped other rental

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58. TEX. TAX CODE ANN. § 156.052; *Hotel Occupancy Tax FAQs*, TEX. COMPTROLLER'S OFF., <https://comptroller.texas.gov/taxes/hotel/> (last visited Jan. 27, 2019).

59. TEX. TAX CODE ANN. § 156.151.

60. Karen Robinson-Jacobs, *Airbnb to Start Collecting Hotel Taxes in Texas Beginning May 1*, DALL. MORNING NEWS (Apr. 13, 2017, 12:18 PM), <https://www.dallasnews.com/business/local-companies/2017/04/13/airbnb-to-start-collecting-hotel-taxes-in-texas-beginning-may-1/>.

61. *Id.*

62. Rice, *supra* note 14.

63. Gerard MacCrossan & Joyce Jauer, *The Hotel Occupancy Tax: A Short History of a Complex Levy*, TEX. COMPTROLLER'S OFFICE FISCAL NOTES (June 2016), <https://comptroller.texas.gov/economy/fiscal-notes/2016/june-july/hotel-tax.php>.

64. *Id.*

65. Rice, *supra* note 14.

66. *Id.*

67. Darla Guillen, *Airbnb Guests in Houston to Start Paying Tax May 1*, HOUS. CHRON. (Apr. 17, 2017, 8:47 AM), <https://www.chron.com/life/travel/article/Airbnb-guests-in-Houston-to-start-paying-tax-May-1-11069049.php>.



companies would consider partnering with the state.<sup>68</sup> In 2016, the state of Texas generated \$6.4 billion in tax revenue from tourism and travel.<sup>69</sup> The availability of accommodation plays a large role in the generation of this revenue.<sup>70</sup>

The exception to this success is the city of San Antonio, which has struggled to collect the required hotel occupancy taxes from short-term rental properties.<sup>71</sup> According to city officials, “out of the more than 2,000 short-term rentals . . . only about 14 percent of property owners” pay the required hotel tax.<sup>72</sup> This gap has cost the city more than \$2.4 million of revenue in 2018 alone.<sup>73</sup> No official enforcement mechanism is used for non-payment of these taxes; however, the city is looking to establish an online payment system to combat this problem.<sup>74</sup>

### *B. Other Short-Term Rental Approaches*

Texas is not the only state that has been inundated with short-term rental litigation. In the last ten years, courts in Colorado, Alabama, New Mexico, and North Carolina have all held that short-term rentals do not violate the residential restrictive covenants at issue.<sup>75</sup> None of these states, however, have classified short-term rentals as hotels. Instead, most large cities in these states have opted to regulate the rentals through local ordinance.<sup>76</sup>

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68. Andrea Leinfelder, *Airbnb Provided \$15.3M in Tax Revenues to Texas*, HOUS. CHRON. (June 13, 2018, 10:57 AM), <https://www.chron.com/business/bizfeed/article/Airbnb-provided-15-3M-in-tax-revenues-to-Texas-12990641.php>.

69. CARINE MARTINEX-GOUHIER & KATHLEEN HUNKER, *THE HOTEL OCCUPANCY TAX IN TEXAS*, TEX. PUB. POLICY FOUND. 4 (MAY 2018), <https://files.texaspolicy.com/uploads/2018/08/16104507/2018-04-RR-Hotel-Occupancy-Tax-in-Texas-CEP-MartinezHunker.pdf>.

70. *See id.* at 4–5.

71. *See* Iris Dimmick, *Fewer Than 15% of SA Short-Term Rental Owners Pay Hotel Taxes*, RIVARD REPORT (Apr. 24, 2018), <https://therivardreport.com/fewer-than-15-of-sa-short-term-rental-owners-pay-hotel-taxes/>.

72. *Id.*

73. *Id.*

74. *Id.*

75. *Houston v. Wilson Mesa Ranch Homeowners Ass’n*, 360 P.3d 255, 260 (Colo. App. 2015) (“[S]hort-term vacation rentals . . . are not barred by the commercial use prohibition in the covenants.”); *Slaby v. Mountain River Estates Residential Ass’n*, 100 So. 3d 569, 582 (Ala. Civ. App. 2012) (holding that renting a cabin on a short-term basis to various groups for residential purposes was not inconsistent with the restrictive covenant at issue); *Estates at Desert Ridge Trails Homeowners’ Ass’n v. Vazquez*, 300 P.3d 736, 743 (N.M. Ct. App. 2013) (holding that the residential restrictive covenants did not prohibit short-term rentals); *Russell v. Donaldson*, 731 S.E.2d 535, 539 (N.C. Ct. App. 2012) (holding that the language “for business or commercial purposes” does not include short-term rentals).

76. *See, e.g.* DENVER, CO., REV. MUNICIPAL CODE ch. 33, art. III (requiring licensure of short-term rentals and creating requirements licensees must comply with); BIRMINGHAM,

The Wisconsin Supreme Court has also recently given a lengthy analysis of the term “commercial use” as it relates to short-term rentals. In *Forshee v. Neuschwander*, concurring Justice Abrahamson found that the term “commercial activity” is unambiguous and subject to only one interpretation.<sup>77</sup> Justice Abrahamson stated that “[t]he conclusion that the short-term rentals qualify as ‘commercial activity’ is unavoidable. As the court of appeals observed, ‘it is undisputed that the Neuschwanders make money, and intend to make money, and by inference a profit, by renting their property to others on a short-term basis.’”<sup>78</sup>

### III. SHORT-TERM RENTALS SHOULD BE CONSIDERED A COMMERCIAL USE OF PROPERTY IN TEXAS

There are several arguments for why short-term rentals should be considered unambiguous commercial use in Texas: (1) short-term rentals drive interstate commerce and tourism; (2) the occupants of short-term rentals use the property like customers, not homeowners; (3) short-term rentals can be easily distinguished from long-term rentals; and (4) short-term rentals compete directly with traditional hotels. This section will examine each of these arguments in turn.

#### A. *Short-Term Rentals Drive Interstate Commerce and Tourism*

The Texas Legislature has chosen to classify short-term rentals as hotels.<sup>79</sup> Though the *Tarr* court does not address this change directly, few would argue against the classification of a hotel as commercial property. The two most compelling arguments for this are: (1) the treatment of hotels by Congress under the Commerce Clause and (2) the direct effect that short-term rentals have on tourism.

The first argument is rooted in the Commerce Clause and its relationship to common carriers. Hotel accommodations are essential to the orderly facilitation of interstate travel. Courts have consistently acknowledged that hotels are common carriers,

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ALA., CODE title 3A, ch. 6 (implementing a tax for hosts and minimum standards for operation); SANTA FE, N.M. CODE ch. 14, art. 6, § 1(A)(5) (requiring permit for short-term rentals); ASHEVILLE, N.C. CODE, ch. 7, art. XVI, § 7-16-1 (requiring a permit for short-term rentals).

77. 914 N.W.2d 643, 651 (Wis. 2018) (Abrahamson, J., concurring).

78. *Id.* (Abrahamson, J., concurring) (quoting *Forshee v. Neuschwander*, 900 N.W.2d 100, 104–05 (Wis. Ct. App. 2017)).

79. TEX. TAX CODE ANN. § 156.001(b).

and thus have different obligations as compared to other businesses.<sup>80</sup> In *Hearts of Atlanta Motel*, for example, the Court held that hotels are a substantial source of intrastate and interstate commerce and that they, therefore, are within the reach of Congress's ability to regulate under the Commerce Clause.<sup>81</sup>

Short-term rentals are also a desirable lodging option for travelers and have become a major driver of interstate tourism throughout the United States. In April of 2018, Airbnb opened its office of global tourism.<sup>82</sup> The goal of this office is to increase tourism worldwide:

Since the company was founded 10 years ago, travelers have discovered new destinations and neighborhoods off the typical tourist path, bringing the economic benefits of tourism to small businesses and local residents around the world. Building off of this work through partnerships, programs and events, Airbnb will expand its efforts to economically empower communities, drive travel to lesser-known places, and support environmentally-friendly travel habits with the Office of Healthy Tourism.<sup>83</sup>

Austin, the capital of Texas, is one of the best examples of this. Austin currently leads Texas in the number of short-term rentals, welcoming more than 30% of the 1.5 million Airbnb guest arrivals.<sup>84</sup> This surge of rentals is “driving business into neighborhoods ‘that haven’t traditionally benefitted from tourism.’”<sup>85</sup> It has also allowed visitors to attend major Austin events like South by Southwest, Austin City Limits Music

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80. Mark Tushnet, *Internet Exceptionalism: An Overview from General Constitutional Law*, 56 WM. & MARY L. REV. 1637, 1668–69 (2015) (“At common law, a common carrier, is an entity that is required to adopt an ‘all-comers’ policy that does not discriminate (‘unjustly,’ in the usual formulation) among those who seek to use its service. Railroads and hotels are classic common carriers.”).

81. *Heart of Atlanta Motel, Inc. v. United States*, 379 U.S. 241, 258 (1964) (“It is said that the operation of the motel here is of a purely local character. But, assuming this to be true, [i]f it is interstate commerce that feels the pinch, it does not matter how local the operation which applies the squeeze.”) (quoting *United States v. Women’s Sportswear Mfg. Ass’n*, 336 U.S. 460, 464 (1949)) (alteration in original).

82. *Airbnb Launches Global Office of Healthy Tourism*, AIRBNB NEWSROOM (Apr. 17, 2018), <https://press.airbnb.com/airbnb-launches-global-office-of-healthy-tourism> (quoting Airbnb’s public policy director for the Southwest).

83. *Id.*

84. Daniel Salazar, *Airbnb’s Most Popular Places to Stay in Austin Include Ultra-Modern Guesthouse, Tiny Home*, AUSTIN BUS. J. (Jan. 30, 2018, 7:37 AM), <https://www.bizjournals.com/austin/news/2018/01/30/airbnbs-most-popular-places-to-stay-in-austin.html>.

85. *Id.*

Festival, and the Formula 1 U.S. Grand Prix.<sup>86</sup> Austin is also home to HomeAway Inc., Airbnb's largest competitor, further demonstrating the importance of short-term rentals to the local Austin economy.<sup>87</sup>

Rural areas of Texas have also experienced a surge of tourism. More than two thirds of room stock and over 75 percent of all traditional hotel room revenue in Texas are concentrated in four major metro areas: Houston, Dallas-Fort Worth, Austin and San Antonio.<sup>88</sup> This has left "large swaths of rural Texas" without accommodations for travelers.<sup>89</sup>

For example, Bosque County is home to just two small hotels according to Hotels.com, yet the local Airbnb host community has helped the county take full economic advantage of its growing popularity with visitors, with 224 percent year-over-year guest growth over the past year. Similarly, Llano County, also home to just two hotels according to Hotels.com[,] is one of the most popular Texas destinations for Airbnb guests. Local homeowners helped catalyze the local economy by hosting 9,500 guests in the past year to the county, earning \$1.31 million in supplemental income in the process.<sup>90</sup>

After completing repairs on a cabin following Hurricane Harvey, one family in Lumberton, Texas discovered the property's wide appeal and decided to "use Airbnb to turn their hospitality into a full-time business."<sup>91</sup> According to the family, many guests are international travelers from Australia, China, and Brazil who are interested in seeing rural Texas.<sup>92</sup>

*B. The Occupants of Short-Term Rental Properties Use the Premises as Customers, Not as Homeowners*

A second argument made by the *Tarr* court is that "residential use" provisions should be interpreted as references to the types of

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86. *Id.*

87. *Id.*

88. *AirBnB in Texas Rural County Growing*, BLANCO COUNTY NEWS (Oct. 3, 2018), <https://www.hillcountrypassport.com/blanco/article/2603/airbnb-in-texas-rural-county-growing>.

89. *Id.*

90. *Id.*

91. See Hayley Bruyn, *Photos: SE Texans Find Extra Income Through Airbnb*, BEAUMONT ENTER. (Sept. 24, 2018, 9:00 AM), <https://www.beaumontenterprise.com/news/article/Airbnb-takes-root-in-rural-and-small-town-Texas-13249103.php#photo-16209467>.

92. *Id.*

activities that occur on the property itself.<sup>93</sup> The court held that “residential” means the property should be used “for living purposes.”<sup>94</sup> According to the court, because the rental occupants are using the property for eating and sleeping, Tarr’s “residential use” provision has not been violated.<sup>95</sup> Moreover, the court states that because there was no “indicia” of a business on the property, there was no commercial use.<sup>96</sup>

There are two subtle, yet fundamental flaws underlying the court’s argument in this aspect. The first relates to the language of the covenant provision itself. Living and business purposes, though juxtaposed in the language of Tarr’s covenants,<sup>97</sup> are not mutually exclusive. It is quite possible for a residential property to be used simultaneously for both living *and* business purposes. This is particularly true when the purpose of the business is to license the use of a property’s living space for profit. The very existence of things like hotels and apartments is evidence of this.

It is this misunderstanding that leads to the second flaw. Throughout its opinion, the *Tarr* court maintains that there is no business being conducted on the property itself.<sup>98</sup> On the surface, this seems like a reasonable argument; the occupants of the Tarr house appear to be doing what homeowners in the neighborhood do in their own homes.<sup>99</sup> What the court fails to consider, however, is the nature of business at issue in this case.

The primary purpose of any hotel or short-term rental is to offer general sleeping accommodations in exchange for

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93. See *Tarr v. Timberwood Park Owners Ass’n*, 556 S.W.3d 274, 288 (Tex. 2018), *reh’g denied* (“Tarr argues that ‘residential purposes’ must be read in comparison to ‘business purposes,’ focusing on the activities in which the people in possession of the property partake.”).

94. *Id.* at 290 (“Generally speaking, ‘residential use’ is one that involves activities generally associated with a personal dwelling. Similarly, a ‘residential building’ is a building which is used for residential purposes or in which people reside, dwell, or make their homes, as distinguished from one which is used for commercial or business purposes. The phrase ‘residential purposes’ does not mean only the occupying of a premises for the purpose of making it one’s ‘usual’ place of abode; a building is a residence if it is ‘a’ place of abode.”) (citation omitted).

95. See *id.* at 292.

96. See *id.* at 292 n.15 (“Other state courts have measured the commercial or business purposes, when defined in contradistinction to residential purposes, by examining whether the use involved employees or other indicia of business on the tract itself.”) (citation omitted).

97. *Id.* at 291–92.

98. *Id.*

99. *Tarr v. Timberwood Park Owners Ass’n*, 556 S.W.3d 274, 288 (Tex. 2018), *reh’g denied* (“Tarr juxtaposes activities such as eating, sleeping, praying, and watching TV with activities such as blacksmithing, shop-tending, event-hosting, and automobile repair.”).

consideration.<sup>100</sup> In other words, the temporary accommodation is the product being offered for sale. Therefore, although short-term renters may appear to be using the property like a homeowner, their use can be distinguished in that they are actually customers. Moreover, because the product to be consumed and the property where the product is located are one and the same, the customer can only consume the product on the property.

It is this reality that further belies the court's assertion that there are no indicia of a business on the property. The *Tarr* court attempts to distinguish a short-term rental property from things like automobile repair and blacksmithing when, in fact,<sup>101</sup> Tarr's business might have even more of an indicium than the aforementioned because, unlike in those cases, he has actual customers on his property. Moreover, it was likely the presence of those customers that alerted the neighborhood to Tarr's business in the first place.

### *C. Short-Term Rentals can be Distinguished from Long-Term Rentals*

Another argument made in the *Tarr* case is that renting a property for profit cannot be considered a business use because if it were, then long-term rentals would also be forbidden.<sup>102</sup> This is a straw man argument.

Short-term rentals can be easily distinguished from long-term rentals in two key aspects: (1) short-term rental agreements are often considered licenses (as opposed to leases), which do not give rise to a landlord-tenant relationship under the Texas Property Code;<sup>103</sup> and (2) when a property is rented long-term as a

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100. Ruby B. Weeks, Annotation, *Meaning of the Term "Hotel" as Used in Zoning Ordinances*, 28 A.L.R.3d 1240 (1969) ("The term 'hotel' has been regarded as synonymous with the term 'inn' and defined as a house held out to the public as a place where transient persons who come in a fit condition will be received and entertained as guests for compensation . . ."); see also 34 TEX. ADMIN. CODE § 3.161(a)(3) ("Any building or buildings in which members of the public obtain sleeping accommodations for a consideration. The term includes, in addition to the buildings listed in Tax Code, § 156.001, manufactured homes, skid mounted bunk houses, residency inns, condominiums, cabins, and cottages.").

101. *Tarr*, 556 S.W.3d at 288.

102. *Id.* at 288 ("Tarr contends that merely renting one's property or realizing a profit therefrom does not convert a homeowner's use into a business use. And if it did, he argues, then long-term leasing arrangements would likewise be forbidden.").

103. Howard Sigal, *Lease vs. License—Practical Legal Nuances for Finding the Right Fit*, SHOPPING CTR. L & STRATEGY (Summer 2016), <https://docplayer.net/103400937-Lease-vs-license-practical-and-legal-nuances-towards-finding-the-right-fit-howard-sigal-ggp-chicago-il.html> ("[A] lease is something more than a license. The lease contains an expectation, documented in the contract, of a definitive term of time, and usually carries

residence, profits are merely incidental to the use of the property and thus do not typically rise to the level of a business use under Texas common law.<sup>104</sup>

Although the terms are sometimes used interchangeably, a lease and a license are not synonymous.<sup>105</sup> Moreover, the language of a document alone is not enough to prove whether an agreement is a license or a lease.<sup>106</sup> Under Texas law, a license can be primarily distinguished from a lease in that it does not vest any interest in the property to the licensee.<sup>107</sup> A license is also often revocable at will, whereas a lease is not.<sup>108</sup>

The booking terms found on most short-term rental websites support this view. Airbnb's Terms of Use agreement, for example, expressly states that guests only have a limited, revocable license to use the Host property:

8.2.1 You understand that a confirmed booking of an Accommodation ("Accommodation Booking") is a limited license granted to you by the Host to enter, occupy and use the Accommodation for the duration of your stay, during which time the Host (only where and to the extent permitted by applicable law) retains the right to re-enter the Accommodation, in accordance with your agreement with the Host.<sup>109</sup>

Airbnb competitors like FlipKey (a subsidiary of TripAdvisor) use similar language in their booking agreements.<sup>110</sup> This license-to-use is relevant to the second distinguishing feature between short-term and long-term rentals. Despite the *Tarr* court's assertion, it is well-established that not all business activity

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inherent legal protections. A license typically is not definitive. A license, by its very nature may be unexpectedly revoked or 'pulled.'")

104. See *Lerner v. Bloomfield Twp.*, 308 N.W.2d 701, 703 (Mich. Ct. App. 1981) (noting that incidental use of a home is one which furthers the primary use of the property as a residence).

105. See *H.E.Y. Tr. v. Popcorn Express Co.*, 35 S.W.3d 55, 58 (Tex. App.—Houston [14th Dist.] 2000, no pet.).

106. *Id.* at 61 n.3 (stating that "a contract of real property in a shopping area of an airport . . . does not demonstrate that it is a lease of real estate[,] . . . [but] merely identifies that the type of license at issue is a 'real property' license").

107. *Digby v. Hatley*, 574 S.W.2d 186, 190 (Tex. App.—San Antonio 1978, no writ) ("A license in real property is a privilege or authority given to a person, or retained by a person, to do some act or acts on the land of another but such license conveys no interest in or title to the property concerned.").

108. See *id.*

109. *Terms of Service*, AIRBNB [https://www.airbnb.com/terms#sec201910\\_8](https://www.airbnb.com/terms#sec201910_8) (last updated Nov. 1, 2019).

110. See *TripAdvisor Rentals—Traveler Terms of Use*, TRIPADVISOR RENTALS, [https://rentals.tripadvisor.com/en\\_US/termsandconditions/traveler](https://rentals.tripadvisor.com/en_US/termsandconditions/traveler) (last updated Oct. 16, 2017).

occurring on a residential property rises to the level of commercial use.<sup>111</sup> Unless a deed restriction contains explicit language to the contrary, Texas courts have conceded that homeowners can conduct certain business activities on their properties so long as the activities conducted are incidental to the property's primary use as a residence.<sup>112</sup>

In Tarr's case, the plaintiff's use of the property for short-term rentals was not incidental to its use as a residence because the property was not being used as a residence at all since neither Tarr nor his guests lived there.<sup>113</sup> Instead, Tarr advertised the property to potential customers as an alternative to a hotel.<sup>114</sup>

Tarr's situation can be sharply contrasted from one in which a tenant with a bona fide lease uses a long-term rental property as his or her primary residence. In that case, the homeowner has actually transferred an interest in the property to the tenant.<sup>115</sup> Because of this, the tenant becomes more like a homeowner and no longer pays hotel taxes.<sup>116</sup> Additionally, the tenant cannot have their right to exclusive use of the property revoked at will.<sup>117</sup> Thus, although the real homeowner might be making a profit from the rent, those profits are now incidental to the property's primary use as the tenant's home.

#### *D. Short-Term Rentals Now Compete Directly with Traditional Hotels*

In *Tarr*, the court makes much of the fact that Tarr's rental property did not feature services "traditionally" found in hotels

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111. 77 TEX. JUR. 3d *Zoning* § 107, Westlaw (database updated May 2020) (footnotes omitted) ("Home businesses are frequently expressly authorized as accessory or incidental uses in districts zoned for residential purposes. Thus, under local ordinances, a nursery or babysitting business, a music school, and a real estate and insurance business have been permitted in single-family residential zones as customary home businesses.").

112. See *Davis v. City of Houston*, 869 S.W.2d 493, 495 (Tex. App.—Houston [1st Dist.] 1993, writ denied) (citation omitted) (noting that commercial activities are not incidental when there is no one living on the property or using it as a residence).

113. *Tarr v. Timberwood Park Owners Ass'n*, 556 S.W.3d 274, 276 (Tex. 2018), *reh'g denied*.

114. *Id.*

115. See *Digby v. Hatley*, 574 S.W.2d 186, 190 (Tex. Ct. App. 1978).

116. *Hotel Occupancy Tax Exemptions*, TEX. FILM COMMISSION, [https://gov.texas.gov/film/page/laws\\_hotel\\_tax](https://gov.texas.gov/film/page/laws_hotel_tax) (last visited Jan. 27, 2019) (noting that any person who stays in a hotel room for longer than 30 consecutive days is no longer subject to the hotel occupancy tax).

117. See *Digby v. Hatley*, 574 S.W.2d at 190.



like daily housekeeping or cooked meals.<sup>118</sup> This focus on services and amenities, however, belies the reality that short-term rentals are direct competitors to traditional hotels.<sup>119</sup> It also neglects the changing times, in which travelers are able to get “better accommodation at more reasonable prices” in cities with Airbnb rentals.<sup>120</sup>

Forbes Magazine recently highlighted this phenomenon.<sup>121</sup> According to a new joint study sponsored by the Massachusetts Institute of Technology and Harvard Business School, the entry of Airbnb into the marketplace results in fewer traditional hotel rooms booked and loss of hotel revenue in that area.<sup>122</sup> Moreover, Airbnb listings are available in over 191 countries, with over four million listings total.<sup>123</sup> This is more than the top five major hotel brands *combined*.<sup>124</sup>

Airbnb is also increasing efforts to make guest experiences more like those at top resorts.<sup>125</sup> In 2018, Airbnb expanded its aptly named Experiences offerings, allowing Airbnb users to book restaurant reservations, concert tickets, and local excursions like hunting or surfing during their stay.<sup>126</sup>

Although these similarities may have eluded the *Tarr* court, they have not been lost on the hotel industry itself. Since the inception of Airbnb, hotels have been disadvantaged by Airbnb’s sharing economy model.<sup>127</sup> A large portion of these losses,

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118. *Tarr*, 556 S.W.3d at 276 (“So unlike what one might expect at a hotel, rental groups were alone in Tarr’s house, unaccompanied by employees and without services a hotel stay might provide, such as cooked meals or housekeeping.”).

119. Dina Gerdeman, *The Airbnb Effect: Cheaper Rooms for Travelers, Less Revenue for Hotels*, FORBES (Feb. 27, 2018, 12:25 PM), <https://www.forbes.com/sites/hbworkingknowledge/2018/02/27/the-airbnb-effect-cheaper-rooms-for-travelers-less-revenue-for-hotels/#1a64f705d672> (“[R]esearch [based on data gathered in 2014] shows that in the 10 cities with the largest Airbnb market share in the US, the entry of Airbnb resulted in 1.3 percent fewer hotel nights booked and a 1.5 percent loss in hotel revenue.”).

120. *Id.*

121. *Id.*

122. *Id.*

123. *Id.*

124. *Id.*

125. *Airbnb Doubles Down on Experiences, Expanding to 1000 Destinations and Adding New Passion Categories in 2018*, AIRBNB (Feb. 23 2018), <https://news.airbnb.com/airbnb-doubles-down-on-experiences-expanding-to-1000-destinations-and-adding-new-categories-in-2018/>.

126. Dara Kerr, *Airbnb Will Expand ‘Experiences’ to 1000 Cities This Year*, CNET (Feb. 23, 2018, 1:13 PM), <https://www.cnet.com/news/airbnb-rolls-out-experiences-to-1000-new-cities/>.

127. Stephanie J. Knightly, *Regulating Innovation: The Positive Economic Impact of Taxing Airbnb Like the Hotel Industry*, 51 SUFFOLK U. L. REV. 457, 461 (2018) (“Compared to Airbnb, hotels are disadvantaged: Airbnb rates are usually much cheaper than average

according to some in the hotel industry, stem from the fact that short-term rentals are unregulated and act as “illegal hotels.”<sup>128</sup> The American Hotel and Lodging Association argues that hosts with multiple units are the drivers of Airbnb’s success:

[A] significant – and rapidly growing – portion of Airbnb’s revenue in major U.S. cities is driven by commercial operators who rent out more than one residential property short-term visitors, essentially operating just like a hotel. Closing this “illegal hotel loophole” is the only way for state and local governments to protect communities and ensure a fair and competitive travel marketplace.<sup>129</sup>

This sentiment is more than just a myth. In April of 2018, the New York Office of Special Enforcement levied a \$1 million fine against a couple for operating an illegal hotel under the guise of Airbnb.<sup>130</sup> In New York, “[i]t is illegal . . . to rent empty apartments in buildings with more than three units for fewer than 30 days . . . .”<sup>131</sup>

Similarly, the city of San Francisco levied a \$2.25 million fine against landlords who evicted tenants “in order to rent out the apartments on Airbnb.”<sup>132</sup> Quite notably, San Francisco is one of the few cities in the United States that requires Airbnb to supply monthly information that allows the city to confirm whether a short-term rental has been properly registered under its ordinances.<sup>133</sup> The city also “requires Airbnb to verify that its hosts

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hotel rates because Airbnb allows hosts to list their apartments or spare rooms and establish their own customized accommodation rates. As a result, it is estimated that hotels are losing approximately \$445 million in revenue annually.”)

128. *Illegal Hotels*, AM. HOTEL & LODGING ASS’N, <https://www.ahla.com/issues/illegal-hotels> (last visited Mar. 28, 2019).

129. *Hosts with Multiple Units – A Key Driver of Airbnb Growth*, AM. HOTEL & LODGING ASS’N, <https://www.ahla.com/hosts-multiple-units-key-driver-airbnb-growth> (last visited Mar. 28, 2019) (citing HOSTS WITH MULTIPLE UNITS – A KEY DRIVER OF AIRBNB GROWTH: A COMPREHENSIVE NATIONAL REVIEW INCLUDING A SPOTLIGHT ON 13 U.S. MARKETS, CBRE (March 2017), [https://www.ahla.com/sites/default/files/CBRE\\_AirbnbStudy\\_2017.pdf](https://www.ahla.com/sites/default/files/CBRE_AirbnbStudy_2017.pdf)).

130. Ameena Walker, *Manhattan Couple Hit with \$1M Fine for Illegal Airbnb Listings*, CURBED N.Y. (Apr. 3, 2018, 1:30 P.M.), <https://ny.curbed.com/2018/4/3/17193246/airbnb-illegal-hotels-nyc-crackdown>.

131. *City Wins \$1M Judgment Against Couple Who Illegally Airbnb’d*, REAL DEAL (Apr. 3, 2018, 11:45 A.M.), <https://therealdeal.com/2018/04/03/city-wins-1m-judgment-against-illegal-hotel-operators/>.

132. Megan Rose Dickey, *SF Fines Two Landlords \$2.25 Million for Illegal Airbnb Rentals*, TECHCRUNCH (Nov. 5, 2018, 3:44 P.M.), <https://techcrunch.com/2018/11/05/sf-fines-two-landlords-2-25-million-for-illegal-airbnb-rentals/>.

133. *Id.*

have registered with the city before showing ads for their homes online.”<sup>134</sup>

#### IV. TARR IMPACTS ON MAJOR TEXAS CITIES

The *Tarr* decision will likely have major impacts on large Texas cities, particularly its largest city—Houston. Houston is the only major city in America without formal zoning laws.<sup>135</sup> Despite multiple zoning proposals, Houstonians have repeatedly voted against any type of zoning inside of the city limits.<sup>136</sup> Instead, the city primarily regulates land use through the enforcement of deed restrictions.<sup>137</sup> This enforcement authority includes the ability to determine whether a particular property’s use of land complies with private restrictive covenants.<sup>138</sup> Unless residents choose to amend their deed restrictions, Houstonians will now be unable to bring challenges to short-term rentals under many restrictive covenants throughout the city.

Austin will also face challenges under the *Tarr* court’s ruling. Currently, the City of Austin heavily regulates short-term rental properties. These regulations require short-term rental owners to not only pay a local hotel tax, but also to register their property with the city and receive a certificate of occupancy.<sup>139</sup> Several residents have already brought a challenge to the ordinance, arguing that it is an impermissible burden on their Constitutional

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134. Kate Conger, *Airbnb Sues San Francisco Over New Rental Legislation*, TECHCRUNCH (June 27, 2016, 7:51 P.M.), <https://techcrunch.com/2016/06/27/airbnb-sues-san-francisco/>.

135. Brady Getlan, *Houston Strong: A World Series Ring, But Is There a Problem with a Lack of Zoning Laws?*, 7 U. BALT. J. LAND & DEV. 63, 63, 67 (2018) (“Houston, however, is one of the few cities that does not have formal zoning laws. Houston prides itself on having no formal zoning laws and calls itself the ‘city with no limits.’”).

136. *Houston Voters Again Reject Zoning*, WASH. POST (Nov. 6, 1993), [https://www.washingtonpost.com/archive/realestate/1993/11/06/houston-voters-again-reject-zoning/47ad1558-465a-48f2-b330-a4a6fcb01387/?noredirect=on&utm\\_term=.25933d929019](https://www.washingtonpost.com/archive/realestate/1993/11/06/houston-voters-again-reject-zoning/47ad1558-465a-48f2-b330-a4a6fcb01387/?noredirect=on&utm_term=.25933d929019).

137. *Deed Restrictions—Frequently Asked Questions*, CITY OF HOUS. LEGAL DEP’T, <https://www.houstontx.gov/legal/dr-faq.html> (last visited Jan. 27, 2019) (“The City of Houston is not zoned. Therefore, the State Legislature and City Council have authorized the City to help with enforcement of recorded deed restrictions for the protection of neighborhoods, for the benefit of all residents, citizens, and taxpayers of the City, and to promote the health, safety, morals, and general welfare of the City.”).

138. See TEX. LOC. GOV’T CODE ANN. § 212.153(a) (stating that a municipality can sue to enforce deed restrictions that have been recorded).

139. *Short Term Rental Licensing—Frequently Asked Questions*, CITY OF AUSTIN, <http://austintexas.gov/content/1325/FAQ/17283> (last visited Jan. 27, 2019).

rights.<sup>140</sup> Alternatively, given the *Tarr* court's assertion that short-term rental properties are not a commercial use,<sup>141</sup> challengers could argue that Austin is treating them like a hotel when they are not.

## V. CONCLUSION

The Texas Supreme Court's decision in *Tarr v. Timberwood* will undoubtedly mark a substantial shift in how short-term rental cases are adjudicated throughout the state. It will also likely lead to increased litigation, given the fundamental tensions that remain. The primary tension is whether the state of Texas should be allowed to treat short-term rental property owners as though they are running a hotel in all other aspects except as they relate to restrictive covenants. While there are still some differences between traditional hotels and short-term rental properties, the gap will only continue to narrow as companies like Airbnb continue to expand their offerings into additional cities.

Given that the Texas Supreme Court is likely done considering the issue of short-term rental properties, the Texas Legislature should strongly consider amending the tax code to carve out a separate definition for short-term rental properties. Calling short-term rental properties "hotels" and requiring owners to pay hotel taxes increases confusion among property owners and guests.

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140. *TPPF Stands for Rights of Short Term Rental Owners and Guests*, TEXAS PUB. POL'Y FOUND. (Mar. 30, 2018), <https://www.texaspolicy.com/press/tppf-stands-for-rights-of-short-term-rental-owners-and-guests>.

141. *See Tarr v. Timberwood Park Owners Ass'n*, 556 S.W.3d 274, 292 (Tex. 2018), *reh'g denied* ("Moreover, Tarr's use does not qualify as a commercial use.")

# BLOCKCHAIN, REGTECH, AND THEIR APPLICATION TO TRANSFER PRICING ACTIVITIES IN THE CLOUD

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## ABSTRACT

This article examines the recent development of transfer pricing (T.P.) activities by Multi-National Enterprise (MNE) groups in the cloud. In particular, this article explores both the risks and opportunities arising from using blockchain-based regulatory technology (RegTech) to regulate T.P. activities in the cloud. It provides an overview of the main forms of cloud-related T.P. activities and highlights key challenges for implementing T.P. rules in the cloud. It explores key features and potential limits of distributed ledger technology (DLT), blockchain, and smart contracts. It also discusses how blockchain smart contracts can be used as RegTech for implementing T.P. rules. Some have suggested that blockchain and other DLT could provide a solution to the practical challenges posed by the widespread use of cloud systems to facilitate T.P. This article critiques this proposed solution and ultimately concludes that such a solution would face significant practical and legal obstacles. The article draws on insights from some recent developments in China, including decisions of the Chinese Internet Court, Supreme Court interpretations, and recently launched judicial blockchain platforms in China. It contends that, although technology measures may serve as an important supplement for T.P. rules enforcement, the advantages of blockchain smart contracts should not be overstated and potential risks must be addressed. The success of blockchain-based RegTech requires the cooperation of all stakeholders and even-development of the capacity to use blockchain technology across different sectors of society.

## PART I. INTRODUCTION

The global tax system was originally established on the basis of physical transactions and trade. Emerging technologies, however, have upended this regime. Technology companies, particularly cloud-related companies, have been at the “forefront of multinationals operating in a developing new global tax environment. Their ever-evolving and increasingly borderless cloud-based business models have set off a scramble among companies and governments around the world to grasp cloud taxation issues and impacts.”<sup>1</sup>

The world’s top cloud service providers, such as Amazon, Microsoft, Google, and IBM,<sup>2</sup> have been common targets of regulatory scrutiny by taxation authorities. These companies have been involved in many disputes arising from cross-border tax evasion, particularly transfer pricing (T.P.). For example, in 2011, the Australian Tax Office (ATO) successfully sued IBM in federal court for failure to pay transfer taxes on revenue earned under a software licensing agreement. Despite IBM’s claim that the payments made were not royalties (and thus, the company was not liable for withholding tax), the court ordered IBM to pay both the back taxes and the ATO’s legal fees.<sup>3</sup> In 2016, IBM won a JPY400 billion tax litigation involving T.P. issues brought by the National Tax Agency in Japan.<sup>4</sup> In the “first major case concerning cross-border tax evasion” in China in 2014, China’s State Taxation Administration charged Microsoft \$140 million in back taxes and interest.<sup>5</sup> In January 2019, Microsoft won a T.P. case in the Danish

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1. ERNST & YOUNG, *CLOUD TAXATION ISSUES AND IMPACTS* 4 (2015), [http://www.ey.com/Publication/vwLUAssets/EY-cloud-taxation-issues-and-impacts/\\$FILE/EY-cloud-taxation-issues-and-impacts.pdf](http://www.ey.com/Publication/vwLUAssets/EY-cloud-taxation-issues-and-impacts/$FILE/EY-cloud-taxation-issues-and-impacts.pdf).

2. Larry Dignan, *Top Cloud Providers 2019: AWS, Microsoft Azure, Google Cloud; IBM Makes Hybrid Move; Salesforce Dominates SaaS*, ZDNET (Aug. 15, 2019, 2:30 PM), <https://www.zdnet.com/article/top-cloud-providers-2019-aws-microsoft-azure-google-cloud-ibm-makes-hybrid-move-salesforce-dominates-saas/>.

3. See Mary Swire, *IBM Loses Australian Transfer Pricing Case*, TAX-NEWS.COM (Apr. 19, 2011), [https://www.tax-news.com/news/IBM\\_Loses\\_Australian\\_Transfer\\_Pricing\\_Case48854.html](https://www.tax-news.com/news/IBM_Loses_Australian_Transfer_Pricing_Case48854.html) (“IBM’s argument was that the Australian subsidiary had signed a software licensing deal in 1987 that entitled it to use and distribute software that had been designed in the US in return for 40% of the revenue it received. The case hinged on whether these monies were ‘royalties’ under the double taxation agreement between the US and Australia.”).

4. Toshinori Uneki (@Toshinori (Toshi) Uneki), LINKEDIN (Mar. 30, 2016), <https://www.linkedin.com/pulse/ibm-wins-jpy400-billion-tax-litigation-brought-national-uneki>.

5. Bill Rigby, *Microsoft to Pay China \$140 Million for ‘Tax Evasion,’* REUTERS (Nov. 25, 2014, 3:41 PM), <https://www.reuters.com/article/us-microsoft-china-tax/microsoft-to-pay-china-140-million-for-tax-evasion-idUSKCN0J92DD20141125>; see also Charles



Supreme Court, in which the taxation authorities claimed that the T.P. documentations were not prepared on time.<sup>6</sup> In 2017 the Internal Revenue Service lost a \$1.5 billion T.P. dispute, “a complex transfer pricing case involving a cost-sharing agreement between Amazon.com Inc [sic] and its Luxembourg subsidiary.”<sup>7</sup>

Like the game of cat and mouse, the pursuit of these I.T. giants by tax authorities is never-ending. In recent years “taxing authorities all over the world . . . have become more and more aggressive in their pursuit of multinationals [in order] to tax as much of their global profits as they can.”<sup>8</sup> With ever-improving digital technology, some taxation authorities have started to set up powerful “profit monitoring mechanism[s]” by adopting blockchain, A.I., and “big data analysis to carry out risk assessments so that more targeted administrative action can be taken” against large taxpayers.<sup>9</sup>

This article examines the recent development of T.P. activities by Multi-National Enterprise (MNE) groups in the cloud, exploring both obstacles and feasibilities of using blockchain-based Regulatory technology (RegTech) to address the current T.P. issues in the cloud.

Part II of this article provides an overview of background concepts of cloud computing technology and T.P. rules. Part III explores the main forms of cloud-related T.P. activities by MNE groups and main challenges for implementing arm’s length principle in the cloud environment. Part IV introduces basic concepts, key features, and potential limits of distributed ledger technology (DLT), blockchain, and smart contracts, and explores how blockchain smart contracts can be used as RegTech for implementing T.P. rules. Part V explores potential obstacles and feasibilities of using blockchain-based RegTech to improve the efficiency and effectiveness of the T.P. rule compliance, including potential technological, judicial and policy obstacles, and possible solutions. In order to explore possible solutions, the article draws

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Clover, *China Fines’ Microsoft \$140m for Tax Evasion*, FIN. TIMES (Nov. 26, 2014, 10:48 AM), <https://www.ft.com/content/db5b55e6-752c-11e4-b1bf-00144feabdc0>.

6. *Microsoft Wins Danish Supreme Court Case*, DELOITTE (Apr. 4, 2019), <https://www2.deloitte.com/content/dam/Deloitte/global/Documents/Tax/dttl-tax-global-transfer-pricing-alert-19-014-4-april-2019.pdf>.

7. Joanna Mather, *Lessons for the ATO in Amazon Win*, AUSTRALIAN FIN. REV., <https://www.afr.com/policy/tax-and-super/lessons-for-the-tax-office-in-amazons-transfer-pricing-win-20170329-gv8nkv> (last updated Apr. 9, 2017, 4:35 PM).

8. *Id.*

9. Cheng Chi et al., *Now That China Has Data, What Is It Going Do with It?*, INT’L TAX REV. (Jan. 29, 2019), <https://www.tpweek.com/articles/now-that-china-has-data-what-is-it-going-do-with-it/aruzdqdc>.

on insights from some recent development in China. This includes recent decisions by the Chinese Internet Court on blockchain evidence (e.g., *Huangzhou Huatai Yimei Culture Media Ltd. v. Shenzhen Daotong Technology Development Ltd.*),<sup>10</sup> as well as recent Supreme Court interpretations (e.g., *Provisions of the SPC on Several Issues in the Hearing of Cases by Internet Courts* (Fa Shi [2018] No. 16)).<sup>11</sup> The article also considers the recently launched judicial blockchain platform by the Chinese Internet Court and the recently launched blockchain-based invoice platform established by the Chinese taxation authority in Shenzhen. The article contends that although technology measures may serve as an important supplement for T.P. rule enforcement, the advantages of blockchain smart contracts should not be overstated and potential risks must be addressed. The eventual success of blockchain-based RegTech requires the cooperation of all stakeholders and even-development of the capacity to use blockchain technology across different sectors of society.

## PART II. CONCEPTUAL OVERVIEW OF CLOUD COMPUTING & TRANSFER PRICING RULES

### A. Defining Cloud Computing

There are many competing conceptions of what cloud computing is. Different countries, and even different stakeholders in the same country, may have different definitions of cloud computing.<sup>12</sup> In the U.S. alone, more than twenty competing

10. See *infra* Part V.B. (discussing that the Internet Court in Hangzhou, China admitted evidence authenticated by blockchain technology for the first time).

11. Zuigao Renmin Fayuan Guanyu Hu Lianwang Fayuan Shenli Anjian Ruogan Wenti De Guiding (最高人民法院关于互联网法院审理案件若干问题的规定) [Provisions of the Supreme People's Court on Several Issues on the Hearing of Cases by Internet Courts] (promulgated by the Supreme People's Court of the People's Republic of China., Sept. 3, 2018, effective Sept. 7, 2018), <http://www.court.gov.cn/zixun-xiangqing-116981.html> (China); see also Wolfie Zhao, *China's Supreme Court Recognizes Blockchain Evidence as Legally Binding*, COINDESK (Sept. 7, 2018, 8:00 AM), <https://www.coindesk.com/chinas-supreme-court-recognizes-blockchain-evidence-as-legally-binding> ("The court released new rules on Friday—that take immediate effect—clarifying various issues relating to how internet courts in China should review legal disputes.").

12. See Steven Rosenbush, *The Morning Download: Cloud Computing Hazy Meaning Creates Confusion for CIOs*, WALL ST. J.: CIO J. (Oct. 8, 2016, 7:40 AM), <https://blogs.wsj.com/cio/2016/10/18/the-morning-download-cloud-computings-hazy-meaning-creates-confusion-for-cios/> ("In many ways we're nowhere nearer understanding what cloud is . . . ."); *Defining Cloud Computing*, N.Z. L. SOC'Y (July 4, 2014), <https://www.lawsociety.org.nz/lawtalk/lawtalk-archives/issue-845/defining-cloud-computing> ("While the term [cloud] is circulated widely, it is often not well understood.");

definitions of cloud computing have been proffered.<sup>13</sup> Nevertheless, the most widely accepted definition is one provided by the U.S. National Institute of Standards and Technology, which defines cloud computing as a “model for enabling ubiquitous, convenient, on-demand network access to a shared pool of configurable computing resources (e.g., networks, servers, storage, applications, and services) that can be rapidly provisioned and released with minimal management effort or service provider interaction.”<sup>14</sup> Furthermore, based on the nature of cloud computing services, cloud computing is often categorized into three different modes: Software as a Service (SaaS), Platform as a Service (PaaS), and Infrastructure as a Service (IaaS).<sup>15</sup> SaaS is software provided by the cloud service provider to the user, allowing users from different locations to use the software without actually installing it on their devices. Users can simply use an Internet browser to interact with the SaaS software. Some typical examples of SaaS include Microsoft Office 365 and Adobe Photoshop. PaaS is a platform for software developers, including web servers, development tools, and operating systems.<sup>16</sup> Atypical examples include the new release of IBM Blockchain, which enables developers to quickly build and host security-rich production blockchain networks on the IBM Cloud.<sup>17</sup> IaaS is the provision of third-party server space for users to process or store files. This means that users do not need to buy or build their own data centers or hold servers any longer. For example, both Dropbox and Baidu Wangpan (Baidu Web Drive) provide their users with online storage spaces hosted on Dropbox and Baidu Wangpan data centers accessible anywhere via the Internet,

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Lizhe Wang et al., *Scientific Cloud Computing: Early Definition and Experience*, 10<sup>TH</sup> IEEE INT’L CONF. ON HIGH PERFORMANCE COMPUTING & COMM. 825 (2008), <https://ieeexplore-ieee.org.ezproxy.lib.uh.edu/stamp/stamp.jsp?tp=&arnumber=4637787> (“There are still no widely accepted definition[s] for Cloud computing albeit Cloud computing practice has attracted much attention.”).

13. LEIGH ANN RAGLAND ET AL., CTR. FOR INTELLIGENCE RES. & ANALYSIS, RED CLOUD RISING: CLOUD COMPUTING IN CHINA (Sept. 5, 2013), [https://www.uscc.gov/sites/default/files/Research/DGI\\_Red%20Cloud%20Rising\\_2014.pdf](https://www.uscc.gov/sites/default/files/Research/DGI_Red%20Cloud%20Rising_2014.pdf).

14. PETER MELL & TIMOTHY GRANCE, NAT’L INST. OF STANDARDS & TECH., THE NIST DEFINITION OF CLOUD COMPUTING 2 (2011), <http://nvlpubs.nist.gov/nistpubs/Legacy/SP/nistspecialpublication800-145.pdf>.

15. Christian Solmecke, *The Legal Aspects of Cloud Computing Under Copyright Law*, WILDE BEUGER SOLMECKE (Sept. 13, 2013), <https://www.wbs-law.de/allgemein/the-legal-aspects-of-cloud-computing-under-copyright-law-15944/>.

16. SAMUEL YANG, REGULATION OF CLOUD COMPUTING IN CHINA, PRACTICAL LAW UK PRACTICE NOTE W-007-4744 (last updated Aug. 2019).

17. Press Release, IBM, IBM Launches Industry’s Most Secure Enterprise-Ready Blockchain Services for Hyperledger Fabric v 1.0 on IBM Cloud (Mar. 20, 2017) (on file with author).

which enables their users to store files on remote cloud servers and have the ability to share files within a synchronized format on different devices.<sup>18</sup>

Put simply, cloud computing technology has two key features: (1) elasticity and (2) borderless operation. On the one hand, computational resources of cloud computing technology are elastic. They not only can be shared simultaneously by numerous remote users, but can also be scaled up or down with demand.<sup>19</sup> Such elasticity provided by cloud technology may significantly reduce the operational costs. On the other hand, cloud-computing technology permits cross-border data transmissions. The locations of data processing activities are based on data load capacity, time of day, and other factors.<sup>20</sup> Data processing activities may be conducted in various locations and in different countries.<sup>21</sup> The borderless feature of cloud computing technology has further increased the difficulty of data control and the uncertainty of legal compliance, including compliance with T.P. rules.

### *B. Transfer Pricing & Arm's Length Principle*

What is T.P.? Generally speaking, T.P. occurs when a commercial transaction transpires between companies that are controlled by the same entity. Consequently, the price for such a transaction is not determined by market supply and demand but by the entity controlling the two companies.<sup>22</sup> For example, a transaction between a parent and subsidiary requires T.P. analysis.<sup>23</sup>

Why use T.P.? A main motivation for MNE's to use T.P. is tax efficiency. MNEs conduct business around the world and their resources are often deployed across different taxing jurisdictions. The mismatch of income tax rates in different jurisdictions

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18. See *Dropbox*, TECHOPEDIA, <http://www.techopedia.com/definition/26850/dropbox> (last updated Feb. 9, 2017); see also *The Easiest Way to Transfer/Copy/Sync Baidu to Google Drive*, MULTICLOUD (Dec. 12, 2018), <https://www.multicloud.com/tutorials/baidu-to-google-drive-5566.html>.

19. See Nikolas Roman Herbst et al., *Elasticity in Cloud Computing: What It Is, and What It Is Not*, 10TH INT'L CONF. ON AUTONOMIC COMPUTING 23 (2013), [https://www.usenix.org/system/files/conference/icac13/icac13\\_herbst.pdf](https://www.usenix.org/system/files/conference/icac13/icac13_herbst.pdf) (citation omitted).

20. Paul M. Schwartz, *EU Privacy and the Cloud: Consent and Jurisdiction Under the Proposed Regulation*, 2013 PRIVACY L. WATCH (BNA) NO. 84, at 718, 718 (May 1, 2013).

21. *Id.*

22. See DEZAN SHIRA & ASSOCIATES, *TRANSFER PRICING IN CHINA* 2, [https://leaglobal.com/thought\\_leadership/transfer-pricing-in-china.pdf](https://leaglobal.com/thought_leadership/transfer-pricing-in-china.pdf).

23. *Id.*

naturally becomes a key driving force, especially for any MNE,<sup>24</sup> to pursue T.P. as a tax planning strategy in order to move profits between high and low tax jurisdictions.<sup>25</sup>

Although such a tax efficient method itself is not per se illegal, it is often looked at with suspicion by taxation authorities.<sup>26</sup> T.P. may result in significant tax revenue losses for the affected countries, creating a “transfer pricing problem.”<sup>27</sup> A study conducted by the United Nations Conference on Trade and Development in 2015 showed that company profit shifting and tax avoidance practices result in an estimated \$100 billion tax revenue loss per year for developing countries.<sup>28</sup>

In the current globalization and digitization environment, an increasing number of companies, particularly technology companies, have adopted T.P. activities as “a tool for tax avoidance.”<sup>29</sup> For example, a 2016 investigation conducted by the European Commission found that “selective treatment” by Ireland allowed Apple to pay a tax rate of only 0.005% in 2014.<sup>30</sup> As a result, Ireland became home to more than one-third of Apple’s global revenue. From this example it is clear that T.P. activities

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24. Manish Jain, *Transfer Pricing Issues in Intangibles (Intellectual Property): An Analysis of Problems and Possible Solutions*, 1 RGNUL STUDENT L. REV. 13, 13 (2014) (citing ORG. FOR ECON. CO-OPERATION & DEV., TRANSFER PRICING GUIDELINES FOR MULTINATIONAL ENTERPRISES AND TAX ADMINISTRATIONS G-6 (2001)).

25. “By taking advantage of these foreign tax rates and exemptions, multinational corporations are lowering their international tax rates and reporting higher profits.” *Id.* at 15 (citation omitted). “MNE Groups can minimize their taxes through three types of activities: tactical (profit shifting activities), operational (financial restructuring), and tax planning (MNE Group structure reorganisation).” *Id.* at 15–16 n.34.

26. *Id.* at 13.

27. *Id.* at 13. Moreover, some estimates indicate losses from income shifting by multinational corporations are nearly \$100 billion USD per year. JANE G. GRAVELLE, CONG. RESEARCH SERV., R40623, TAX HAVENS: INTERNATIONAL TAX AVOIDANCE AND EVASION 19 (2015).

28. U.N. CONF. ON TRADE & DEV., WORLD INVESTMENT REPORT 2015 – REFORMING INTERNATIONAL INVESTMENT GOVERNANCE 200 (2015), [https://unctad.org/en/PublicationsLibrary/wir2015\\_en.pdf](https://unctad.org/en/PublicationsLibrary/wir2015_en.pdf); see also Petr Janský & Miroslav Palanský, *Estimating the Scale of Profit Shifting and Tax Revenue Losses Related to Foreign Direct Investment 4* (U.N. U. WORLD INST. FOR DEV. ECON. RES., Working Paper 2018/21), <https://www.wider.unu.edu/sites/default/files/Publications/Working-paper/PDF/wp2018-21.pdf>.

29. *Overview of Transfer Pricing in Hong Kong and China*, KING & WOOD MALLESONS (Nov. 26, 2015), <https://www.kwm.com/en/us/knowledge/insights/overview-of-transfer-pricing-in-hk-and-china-20151126>.

30. *Commission Says Ireland Granted Undue Tax Benefits of up to 13bn to Apple*, RTE, <https://www.rte.ie/news/2016/0830/812819-apple-tax-ireland/> (last updated Aug. 30, 2016, 11:55 PM).

by MNEs may pose a serious risk to the fairness and the integrity of international tax system.<sup>31</sup>

To prevent MNEs from shifting profits to obtain tax benefits, many countries have adopted T.P. tax laws to “ensure that the amount charged between related parties, when they transact, is fair.”<sup>32</sup> This is known as the Arm’s Length principle (ALP). Both the United Nations Practical Manual on Transfer Pricing for Developing Countries (2017) and the OECD Transfer Pricing Guidelines (2017) provide that an ALP should be adopted to establish the price of transactions between related companies.<sup>33</sup> That is, the price of the related companies should be the same as the price for unrelated companies;<sup>34</sup> thus, a valid transaction between two unrelated companies must be the “product of genuine negotiation.”<sup>35</sup> It is clear that accurately determining a market price is crucial for the success of the application of ALP. ALP naturally also applies to cloud service providers, including any MNEs which have moved to the cloud. Nevertheless, as introduced above, the unique features of cloud computing technology bring challenges for the implementation of ALP for both MNEs and taxation authorities. After all, the traditional tax systems were established on the basis of physical transactions of tangible assets rather than intangible assets.

31. See *What is BEPS?*, ORG. FOR ECON. CO-OPERATIONS & DEV., <http://www.oecd.org/tax/beps/beps-about.htm> (last visited Jan. 25, 2020) (“BEPS refers to tax planning strategies that exploit gaps and mismatches in tax rules to artificially shift profits to low or no-tax locations where there is little or no economic activity . . . *Although some of the schemes used are illegal, most are not.* This undermines the fairness and integrity of tax systems because businesses that operate across borders can use BEPS to gain a competitive advantage over enterprises that operate at a domestic level. Moreover, when taxpayers see multinational corporations legally avoiding income tax, it undermines voluntary compliance by all taxpayers.”) (emphasis added).

32. JOHN HENSHELL, GLOBAL TRANSFER PRICING: PRINCIPLES AND PRACTICE 1 (3rd ed. 2016).

33. UNITED NATIONS, PRACTICAL MANUAL ON TRANSFER PRICING FOR DEVELOPING COUNTRIES 34 (2017), <https://www.un.org/esa/ffd/wp-content/uploads/2017/04/Manual-TP-2017.pdf>; ORG. FOR ECON. CO-OPERATION & DEV., OECD TRANSFER PRICING GUIDELINES FOR MULTINATIONAL ENTERPRISES AND TAX ADMINISTRATIONS 2017 33–34 (2017) [hereinafter OECD GUIDELINES].

34. *Arm’s-Length Principle*, USTRANSFERPRICING.COM, [http://www.ustransferpricing.com/arms\\_length\\_principle.html](http://www.ustransferpricing.com/arms_length_principle.html) (last visited Jan. 13, 2020) (“The ‘arm’s-length principle’ of transfer pricing states that the amount charged by one related party to another for a given product must be the same as if the parties were not related.”); see also INTERNAL REVENUE SERVICE, ARM’S LENGTH STANDARD (2014), [https://www.irs.gov/pub/int\\_practice\\_units/ISI9422\\_09\\_06.PDF](https://www.irs.gov/pub/int_practice_units/ISI9422_09_06.PDF).

35. *Transfer Pricing*, TAX JUST. NETWORK, <https://www.taxjustice.net/topics/corporate-tax/transfer-pricing/> (last visited Jan. 9, 2020) (“[M]arket price . . . generally result[s from] . . . ‘arm’s-length’ trading, because it is the product of genuine negotiation in [the] market. This arm’s length price is usually considered to be acceptable for tax purposes.”).

PART III. CLOUD-RELATED TRANSFER PRICING ACTIVITIES &  
CHALLENGES FOR LAW ENFORCEMENT*A. Cloud-related Transfer Pricing Activities*

MNEs may adopt various cloud computing related strategies to conduct or facilitate their T.P. activities. MNEs may conduct T.P. activities through Cloud Service Provider Relocation strategies. MNEs can seek a tax deduction by relocating an affiliated Cloud Service Provider from a high tax jurisdiction to a low tax jurisdiction. As noted above, due to the borderless and flexibility features of CC, MNE groups can easily relocate their I.T. infrastructure, such as cloud servers and data centers, without affecting the quality of their business performance.<sup>36</sup>

MNEs can also use Cloud Service Agreements (CSA) to facilitate T.P. activities. Due to the ALP compliance obligations, the pricing of cloud service fees between related companies cannot be unreasonably high.<sup>37</sup> However, the application of CSA may help to justify a high price for cloud services provided between related companies. For example, the scope of CSA may not only cover the basic cloud services such as the rights to use cloud-based software, but also other technical services such as software maintenance services and other value-added services.<sup>38</sup>

Additionally, MNEs may use Cost Sharing Arrangement/Cost Contribution Arrangement (CCA) to facilitate their cloud-related T.P. activities. “As value chains of multinational companies become increasingly dispersed . . . owners of valuable intangible assets may emerge in multiple tax jurisdictions.”<sup>39</sup> CCAs are

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36. Orly Mazur, *Transfer Pricing Challenges in the Cloud*, 57 B.C. L. REV. 643, 671, 675 (2016).

37. As discussed above, the tax laws in many countries require that the transfer pricing arrangements between related enterprises comply with the Arm’s Length principle, that is, the price of the associated parties should be the same as the price for the non-related party. See *Arm’s-Length Principle*, *supra* note 34; INTERNAL REVENUE SERVICE, *supra* note 34.

38. *The SAAS Company that Grew from 0 to 4M Subscribers in 2.5 Years*, TOMASZ TUNGUZ (Mar. 22, 2015), <https://tomtunguz.com/adobe-saas-growth/>. For example, in regard to Adobe Photoshop software, Adobe has successfully transitioned from the traditional “Licensed Software Model” to the current “SaaS Subscription Model.” In addition to using its main website to provide cloud-based Photoshop software services to its subscribers (basic cloud service), it provides registered Adobe members with access to all of Adobe’s photography, design, video, and web apps on all their desktop and mobile devices (other related technical services).

39. Nobuo Mori et al., *Cost Sharing Agreements May Allow Multinational Companies to Reap the Benefits of Intangible Asset Investment*, TP WEEK (Mar. 25, 2009), [https://www.nera.com/content/dam/nera/publications/archive1/PUB\\_Cost\\_Sharing\\_Apr2009.pdf](https://www.nera.com/content/dam/nera/publications/archive1/PUB_Cost_Sharing_Apr2009.pdf).

contractual arrangements between related companies “to share the contributions and risks involved in either (1) the development, production, or acquisition of intangible or tangible assets, or (2) the execution of services, with an expectation that the parties will enjoy the anticipated benefits to be derived from their contributions equitably.”<sup>40</sup>

More specifically, related companies may adopt CCA to allocate their research and development costs for creating intangible assets, such as cloud-based software patents.<sup>41</sup> Companies can also re-allocate market risk. Since both high-tax and low-tax affiliates contribute to the final income generated from the subject intangible, MNE groups may artificially make the low-tax affiliate generate the majority of the income.<sup>42</sup> In doing so, the low-tax affiliates reduce the overall global tax liability of the MNE group.<sup>43</sup>

### *B. Cloud Challenges for ALP Application*

As introduced above, the key for the application of ALP is to determine the accurate market value of the relevant transactions.<sup>44</sup> Unfortunately, it is not an easy task to accurately assess the value of transactions involving intangible assets.<sup>45</sup>

From the beginning it is difficult to find the data needed to conduct a T.P. analysis.<sup>46</sup> Potentially comparable transactions are effectively not analogous because of the uniqueness of intellectual

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40. JACQUELINE DOONAN & RAMÓN LÓPEZ DE HARO, DELOITTE, COST CONTRIBUTION ARRANGEMENTS 1 (2015), <https://www2.deloitte.com/content/dam/Deloitte/us/Documents/Tax/us-tax-beps-changes-transfer-pricing-cost-contribution-arrangements.pdf>; see also Mori, *supra* note 39, at 1 (stating that “[c]ost sharing arrangements may become useful to establish a proper compensation of the affiliates responsible for intangibles development, provide a mechanism for sharing the risk of intangible development activities among affiliates, improve the cash position of the intangible-developing entities, and establish more efficient intercompany transaction structures.”).

41. Jain, *supra* note 24, at 17.

42. For example, the high tax affiliate may bear more research and development costs, but may make the low tax affiliate become the major receiver of the royalty incomes generated from the subject intangibles (e.g., registering IPR in low-tax country). See *id.* at 27–28.

43. *Id.* at 17.

44. See Part II; see also OECD GUIDELINES, *supra* note 33, at 33.

45. OECD GUIDELINES, *supra* note 33, at 248–49.

46. See *The Platform for Collaboration on Tax Delivers a Toolkit to Help Developing Countries Address the Lack of Comparables for Transfer Pricing Analyses and Better Understanding Mineral Product Pricing Practices*, ORG. FOR ECON. CO-OPERATION & DEV. (June 22, 2017), <http://www.oecd.org/tax/pct-delivers-toolkit-to-help-developing-countries-address-lack-of-comparables-for-transfer-pricing-analyses.htm> (noting that the toolkit was designed to overcome a lack of data).



property.<sup>47</sup> The same is true for cloud-related transactions since each cloud computing related product and service usually has its own unique features, thereby making it difficult to find comparables for one product or service to another. Developing countries are particularly vulnerable to these challenges.<sup>48</sup> Unlike developed countries, which usually have a much larger number of public companies, developing countries usually only have a small number of public companies and the information available on domestic private companies is either lacking or inadequate.<sup>49</sup> “This [directly] limits the amount of publicly available information on domestic companies that can be used for transfer pricing analysis.”<sup>50</sup>

Additionally, there is a lack of detailed understanding of the operation of MNE’s business structures and their global value chain as a whole. In practice, intangibles are often transferred in combination with tangible assets or associated services.<sup>51</sup> Buyers may want to acquire a product package that relies on a combination of intangible assets and other services, such as a combination of software patents, I.T. infrastructure, and technical support services.<sup>52</sup> For example, when buyers purchase Adobe’s cloud-based Photoshop software, the product package they acquire not only includes a license to use the Photoshop software online, but also associated services on software updates and cloud platform maintenance.<sup>53</sup> Because of this, it is not always easy to identify an accurate separate value for the subject intangible asset, such as the value of cloud-based Photoshop software, in the subject transaction. The situation becomes even more difficult when a cloud-related product package is provided by related

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47. See Richard Schmidtke et al., *The Hypothetical Arm’s-Length Test: Germany’s Way of Calculating the ALP for IP*, INT’L TAX REV. (Aug. 28, 2018), <https://www.internationaltaxreview.com/article/b1f7n0vs4krwbn/the-hypothetical-arms-length-test-germanys-way-of-calculating-the-alp-for-ip>.

48. UNITED NATIONS, PRACTICAL MANUAL ON TRANSFER PRICING FOR DEVELOPING COUNTRIES, 375 (2013), [https://www.un.org/esa/ffd/wp-content/uploads/2014/08/UN\\_Manual\\_TransferPricing.pdf](https://www.un.org/esa/ffd/wp-content/uploads/2014/08/UN_Manual_TransferPricing.pdf) [hereinafter U.N. PRACTICAL MANUAL 2013] (highlighting the challenges for developing countries in relation to identification and valuation of intangibles).

49. *Id.*

50. *Id.*

51. See Richard L. Doernberg, *Taxation Silos: Embedded Intangibles and Embedded Services*, 110 TAX NOTES, 1189, 1189–90 (2006) (indicating that the combination of intangible assets with tangible assets or associate services is also known as “embedded intangibles”).

52. See *infra* Part IV.B.3 for a discussion on product packages.

53. *Creative Cloud Maintenance Scheduled for Friday Night*, ADOBE CREATIVE CLOUD (Jan. 9, 2014), <https://blogs.adobe.com/creativecloud/creative-cloud-maintenance-scheduled-for-friday-night/>.

enterprises located in different tax jurisdictions. Because the parent companies or service centers of most of MNEs are located overseas, the local taxpayers—also known as domestic enterprises—may only be able to provide information in relation to their own operations rather than provide “an overall understanding of the entire intra-group services structure.”<sup>54</sup>

Further, there is a lack of information on intangible transactions in financial statements. Generally speaking, the traditional model of financial reporting is not able to provide relevant information about a company’s intangible assets.<sup>55</sup>

Commenters opine that this is because most intangibles, other than patents, are not usually reported in MNE’s financial statements, making them difficult to detect.<sup>56</sup> For example, common technology payments—including things like royalties, licenses, and management fees—are actually intra-group payments between parent firms and their subsidiaries.<sup>57</sup> As a consequence, intangible-based transactions are not disclosed on the financial statements of MNE group.<sup>58</sup> This creates further challenges for taxation authorities in their efforts to identify comparable pricing information for intangibles.

In order to address these challenges, many countries have taken action to reform their laws on tax evasion. In particular, the OECD Base Erosion and Profit Shifting (BEPS) Project not only released its final report (the BEPS Report) in 2015,<sup>59</sup> it also revised the *OECD Transfer Pricing Guidelines for Multinational Enterprises and Tax Administrations*.<sup>60</sup> The BEPS Report contains

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54. Comm. of Experts on Int’l Cooperation in Tax Matters, ¶ 39, U.N. Doc. E/C.18/2015/CRP.12 (Oct. 20, 2015).

55. Jovan Krstić & Milica Đorđević, *Financial Reporting on Intangible Assets – Scope and Limitations*, 7 FACTA UNIVERSITATIS, SERIES: ECON. & ORG. 335, 335 (2010) (“Lack of relevant information on intangible assets (intellectual capital and the like) in the financial statements disables the possibility for external users to perceive real value of the company and adequate decision making.”).

56. Jain, *supra* note 24, at 21.

57. See Lorraine Eden et al., *The Production, Transfer, and Spillover of Technology: Comparing Large and Small Multinationals as Technology Producers*, in SMALL AND MEDIUM SIZED ENTERPRISES IN THE GLOBAL ECONOMY 121, 122 (Zoltan J. Acs & Bernard Yeung eds., 1999).

58. See Jain, *supra* note 24, at 22 (“IP appears only as ‘goodwill because the accounting standards in most countries allow internally-generated IP to be expensed rather than capitalized as investments. IP is generally not recorded or disclosed in an MNE Group’s financial statements or its footnotes.”) (citation omitted).

59. ORG. FOR ECON. CO-OPERATION & DEV., OECD/G20 BASE EROSION & PROFIT SHIFTING PROJECT, ALIGNING TRANSFER PRICING OUTCOMES WITH VALUE CREATION, ACTIONS 8-10: 2015 FINAL REPORTS 3–4 (2015), <http://dx.doi.org/10.1787/9789264241244-en>.

60. *Id.* at 13–14.

detailed recommendations, which have been widely adopted by OECD countries, to help address these T.P. issues with intangibles.<sup>61</sup> Although potential ramifications of these OECD recommendations have been thoroughly analyzed in scholarship,<sup>62</sup> few scholars focus on how technology, including blockchain technology, can be used to facilitate the enforcement of T.P. rules on intragroup transactions in relation to intangibles. This article next examines both the challenges and feasibilities of using blockchain smart contract as RegTech to address T.P. issues.

#### PART IV. BLOCKCHAIN SMART CONTRACTS AS REGTECH FOR TRANSFER PRICING REGULATIONS

##### *A. Defining Distributed Ledger Technology, Blockchain and Smart Contract*

Before exploring possible blockchain-based solutions for T.P. activities, it is necessary to explore the blockchain basics.

##### 1. Evolving Definitions of Distributed Ledger Technology and Blockchain

As noted in a recent World Bank report, the terminology in this area is “still evolving and universal definitions have not yet been formalized.”<sup>63</sup> DLT is a new and quickly evolving method to record and exchange data across many repositories, also known as ledgers.<sup>64</sup> This technology allows for transaction data to be

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61. *Id.* at 75–77 (outlining key principles for the transfer pricing determination in relation to intangibles and providing that the ownership of the intangible itself “does not confer any right ultimately to retain returns derived by the MNE group from exploiting the intangible”).

62. *E.g.*, Ranjana Gupta, *Analysis of Intellectual Property Tax Planning Strategies of Multinationals and the Impact of the BEPS Project*, 33 *Austl. Tax F.* 185 (2018); Madelein Kleyn, *BEPS Project and Intangibles: Impact on IP Tax Structures*, *LES NOUVELLES*, June 2018, at 148; Yariv Brauner, *Changes? BEPs, Transfer Pricing for Intangibles, and CCAS* (Univ. of Fla. Levin Coll. of Law Legal Studies Research Paper Series, Paper No. 16-14, 2016), <https://ssrn.com/abstract=2744730>; Carlo Garbarino, *The Tax Treaty Implications of the Remuneration as Royalties of Intellectual Property and Intangibles*, 29 *EUR. BUS. L. REV.* 345 (2018); Andrés Báez & Yariv Brauner, *Taxing the Digital Economy Post BEPS . . . Seriously* (Univ. of Fla. Levin Coll. of Law Legal Studies Research Paper Series, Paper No. 19-16, 2019), <https://ssrn.com/abstract=3347503>.

63. HARISH NATARAJAN ET AL., WORLD BANK, *DISTRIBUTED LEDGER TECHNOLOGY (DLT) AND BLOCKCHAIN*, at iv (2017), <http://documents.worldbank.org/curated/en/177911513714062215/pdf/122140-WP-PUBLIC-Distributed-Ledger-Technology-and-Blockchain-Fintech-Notes.pdf>.

64. *Id.*

recorded, managed, and sustained by different network participants, also known as nodes.<sup>65</sup>

“Blockchain” is defined by the World Bank as “a particular type of data structure used in some distributed ledgers which stores and transmits data in packages called ‘blocks’ that are connected to each other in a digital ‘chain.’”<sup>66</sup> It uses encryption methods known as cryptography and a set of specific mathematical algorithms to record and synchronize data across a network in an immutable manner—that is, data records can only be added, not removed.<sup>67</sup> In plain language, some tax practitioners simply define blockchain as a “decentralised ledger, or list, of all transactions across a peer-to-peer network.”<sup>68</sup>

Despite the facts not all distributed ledgers use blockchains and that blockchain technology has other uses, the terms blockchain technology and DLT are often used synonymously.<sup>69</sup>

## 2. Different Types of Blockchains

In practice, the structures of blockchains are not always the same. The two main types of blockchain, permissioned and permissionless, can be differentiated by two main factors: (1) the level of openness or transparency (who has the authority to join and access the data lodged on the blockchain);<sup>70</sup> and (2) the level of authorization.<sup>71</sup>

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65. ROBBY HOUBEN & ALEXANDER SNYERS, CRYPTOCURRENCIES AND BLOCKCHAIN: LEGAL CONTEXT AND IMPLICATIONS FOR FINANCIAL CRIME, MONEY LAUNDERING AND TAX EVASION 15 (2018); NATARAJAN ET AL., *supra* note 63, at iv. *See also* Ibrahim Shehata, *Three Potential Imminent Benefits of Blockchain for International Arbitration: Cybersecurity, Confidentiality & Efficiency*, 31 YOUNG ARB. REV. 32, 33 (2018) (providing a more generalized definition of DLT and defining blockchain as “[a] database that stores digital information in a highly secure manner through (1) using cryptographic functions to encrypt such information and (2) distributing the database across a number of networks.”).

66. NATARAJAN ET AL., *supra* note 63, at iv.

67. *See* HOUBEN & SNYERS, *supra* note 65, at 15 (defining blockchain as “a mechanism that employs an encryption method known as cryptography and uses (a set of) specific mathematical algorithms to create and verify a continuously growing data structure – to which data can only be added and from which existing data cannot be removed – that takes the form of a chain of ‘transaction blocks,’ which functions as a distributed ledger”) (citations omitted).

68. PRICEWATERHOUSECOOPERS, Q&A: WHAT IS BLOCKCHAIN? 1 (2016); *see also* Lin W. Cong & Zhiguo He, *Blockchain Disruption and Smart Contracts*, 32 REV. FIN. STUD. 1754, 1754, 1787 (2019) (illustrating that blockchain provides “decentralized consensus and potentially enlarges the contracting space through smart contracts” with tamper-proofness and algorithmic executions).

69. NATARAJAN ET AL., *supra* note 63, at 2.

70. Shehata, *supra* note 65, at 33 (exploring who has authority to join and access the data lodged on the blockchain).

71. *Id.*

Blockchains can separate into the following four categories:<sup>72</sup>

Public Permissionless	Public Permissioned	Private Permissionless	Private Permissioned
Anyone Can Join & Read the Data (Anonymous Identity)	Anyone Can Join & Read the Data (Anonymous Identity)	Only Participants with Known Identities Can Join & Read the Data	Only Participants with Known Identities Can Join & Read the Data
All of Participants Can Write the Data	Only Pre-Designated Participants Can Write the Data	All of Participants Can Write the Data	Only Pre-Designated Participants Can Write the Data
Data is Transparent	Data is Transparent	Data is Confidential	Data is Confidential
Requires Native Assets (Cryptocurrency)	Requires Native Assets (Cryptocurrency)	Does not Require Native Assets	Does not Require Native Assets
Low Scalability	Moderate Scalability	High Scalability	Very High Scalability

Public permissionless blockchain refers to blockchain that anyone is able to access and use to complete transactions.<sup>73</sup> Bitcoin, a type of cryptocurrency, is a popular example.<sup>74</sup>

A public permissioned blockchain, one type of consortium blockchain, refers to the blockchain where “only pre-designated participants can write the data.”<sup>75</sup> There are no limits to who can view this type of blockchain and its associated data.<sup>76</sup> But unlike public permissionless blockchains, only a few trusted parties are authorized to write data in order to achieve faster processing.<sup>77</sup> This type of blockchain is commonly used in the banking industry.<sup>78</sup>

72. *Id.*

73. See JOSEPH J. BAMBARA & PAUL R. ALLEN, BLOCKCHAIN: A PRACTICAL GUIDE TO DEVELOPING BUSINESS, LAW, AND TECHNOLOGY SOLUTIONS 13 (Sean T. McKeough ed., 2018).

74. See Shehata, *supra* note 65, at 34.

75. *Id.* at 33.

76. *Id.*

77. See Laurette von Grambusch & Ariana Kosyan, *INSIGHT: Blockchain Relevance for Tax and Transfer Pricing Purposes*, 37 TAX MGMT. WKLY. REP. (BNA) No. 29, at 21 (explaining there is no need to wait for a consensus of all or a majority of those participating).

78. *Id.*

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A private permissionless blockchain, the other type of consortium blockchain, refers to the blockchain that is created by companies that want a smaller network. This type of blockchain can only be accessed and read by a few trusted parties with limited authorized parties to write data.

A private permissioned blockchain refers to blockchains where “write permissions are kept centralized to one organization.”<sup>79</sup> They are “read only, limited transactions . . . [as in a] traditional corporate database,” created by the companies that need a smaller network.<sup>80</sup> Only select participants, as opposed to anyone with access to the network, can engage with these kinds of blockchain.<sup>81</sup> Because they are private, authorized users must be added individually.<sup>82</sup> Despite the difficulty with getting access, these are still utilized because companies enjoy many recordkeeping benefits when using them, including increased accuracy.<sup>83</sup> Theoretically, this structure could also allow for real-time auditing by regulators.<sup>84</sup>

In practice, the most commonly used blockchain structures are public permissionless blockchains and private permissioned blockchains.<sup>85</sup> Private permissioned blockchains particularly have the potential to be used as RegTech to audit companies’ activities, including T.P. activities conducted by MNEs.

### 3. Common Features of Blockchain: Advantages & Risks

#### a. Advantages of Blockchain Technology

There are several key advantages of DLT, or blockchain, that bring significant potential for use in tax planning.<sup>86</sup> Among these

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79. See Shehata, *supra* note 65, at 33 (citing BAMBARA & ALLEN, *supra* note 73, at 31).

80. See Grambusch & Kosyan, *supra* note 77, at 21.

81. See Shehata, *supra* note 65, at 33.

82. See Grambusch & Kosyan, *supra* note 77, at 21.

83. *Id.*

84. *Id.*; see also *infra* Part IV.B.5 for further discussion on real-time auditing.

85. See Shehata, *supra* note 65, at 33 (comparing these two structures to the others by using the number of projects and user).

86. *How Blockchain Technology Could Improve the Tax System*, PRICEWATERHOUSECOOPERS, <https://www.pwc.com.tr/en/sectorler/teknoloji/yayinlar/blockchain-teknolojisi-vergi-sistemini-nasil-gelistirebilir.html> (last visited Jan. 16, 2020).

are: (1) transparency,<sup>87</sup> (2) control,<sup>88</sup> (3) real-time information,<sup>89</sup> and (4) security.<sup>90</sup> Security is based on the consensus mechanism used by the particular blockchain. Particularly for public and private permissioned blockchains, “[i]nformation can be added onto a [b]lockchain only if all, or a defined number of participants in the network[,] agree on the correctness of information.”<sup>91</sup> Because of this fraud is less likely and more easily detected.<sup>92</sup> Furthermore, the distributed structure of a blockchain eliminates the single point of failure.<sup>93</sup> As a blockchain is spread over several computers of blockchain or DLT participants (nodes) on the Internet, a single system crash or failure (failure of a single node) will not result in loss of transaction records. Even if one part of the network goes down, the blockchain will continue to function.<sup>94</sup> This further improves the security of the blockchain.

It is clear that the application of blockchain may improve the transparency of supply chains and ensure robust internal controls of MNEs.<sup>95</sup> More details on potential applications of blockchain technology will be introduced in Part IV.B.

#### b. Potential Risks of Blockchain Technology

Every coin has two sides. Before adopting blockchain technology to develop RegTech applications for T.P. management,

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87. *Id.* “[C]reated Blocks are cryptographically locked into [a] chain, meaning that the Blockchain record is immutable—it is impossible to delete or alter the information stored in the block. . . . Blockchain is a chain of blocks, each one storing data on a wide range of information. Each one is linked to the previous block, forming a chronological chain of the data uploaded onto the Blockchain.” DELOITTE, BLOCKCHAIN TECHNOLOGY AND ITS POTENTIAL IN TAXES 7 (Dec. 2017), [https://www2.deloitte.com/content/dam/Deloitte/pl/Documents/Reports/pl\\_Blockchain-technology-and-its-potential-in-taxes-2017-EN.PDF](https://www2.deloitte.com/content/dam/Deloitte/pl/Documents/Reports/pl_Blockchain-technology-and-its-potential-in-taxes-2017-EN.PDF).

88. *See How Blockchain Technology Could Improve the Tax System*, *supra* note 86. But public permissionless blockchains do not have such a feature because they have been designed to enable the access from anyone. Shobhit Seth, *Public, Private, Permissioned Blockchains Compared*, INVESTOPEDIA, <https://www.investopedia.com/news/public-private-permissioned-blockchains-compared/> (last updated Apr. 10, 2018).

89. *See How Blockchain Technology Could Improve the Tax System*, *supra* note 86.

90. *Id.*

91. DELOITTE, *supra* note 87, at 7.

92. *Id.* at 7, 9. Nevertheless, the range of crypto frauds in the past three years suggest this may not be true because it fails to distinguish between frauds involving cryptocurrencies and fraudulent changes to blocks. *See infra* Part V.A. for a discussion on these risks.

93. *See* Dirk A. Zetzsche et al., *The Distributed Liability of Distributed Ledgers: Legal Risks of Blockchain*, 2018 U. ILL. L. REV. 1361, 1370–72 (2018) (providing a comparison of centralized, decentralized and distributed ledger structures).

94. *See* DELOITTE, *supra* note 87, at 6–7.

95. Bhavya Bhandari, Supply Chain Management, Blockchains and Smart Contracts 6, 18 (June 28, 2018) (unpublished manuscript), <https://ssrn.com/abstract=3204297>.

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it is important to understand the potential risks. Both academia and international institutes have explored potential technological and legal risks of blockchain applications.<sup>96</sup> Certain characteristics of blockchain could be misused and result in “undesirable data distribution, data loss, or data manipulation.”<sup>97</sup> This could lead to liability issues and may increase concerns surrounding data privacy, insider trading and market abuse,<sup>98</sup> competition and consumer protection,<sup>99</sup> and shared liabilities of blockchain participators.<sup>100</sup>

Among these various risks, at least three should be taken into account when applying blockchain technologies to RegTech applications.<sup>101</sup> First, cybersecurity issues should be considered.<sup>102</sup> On the one hand, in relation to data manipulation, the consensus mechanism may help to improve the security of the blockchain platform since there is no consensus or alternation of data records on the blockchain.<sup>103</sup> On the other hand, this brings the risks of a “51% attack.”<sup>104</sup> This occurs when a “bad actor” obtains control of 51% of the network. That actor then can trick the network permissions into functioning in a way that harms other users.<sup>105</sup> This risk is particularly serious for public permissionless blockchain.<sup>106</sup> Since everyone can register as a user of the blockchain anonymously, it is very possible for a bad actor with sufficient computing power to obtain control on the majority of blockchain nodes (network participants).<sup>107</sup> Some recent incidents of standard distributed Denial of Services attacks on multiple Ethereum nodes indicate that “traditional cyberattack techniques can be successfully applied to DLT systems.”<sup>108</sup>

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96. See Zetzsche et al., *supra* note 93, at 1369; NATARAJAN ET AL., *supra* note 63, at ix; HOUBEN & SNYERS, *supra* note 65, at 9–10.

97. Zetzsche et al., *supra* note 93, at 1374–75.

98. *Id.* at 1374–75, 1379.

99. *Id.* at 1397–98, 1402 (“[M]arket participants involved in a distributed ledger system must keep this and other conduct-related legislation (such as data protection, copyright laws, consumer protection laws, tax laws, AML/CFT, landlord-tenant laws etc.) in mind.”) (citations omitted).

100. *Id.* at 1400–02 (exploring distributed liabilities issues).

101. *Id.* at 1375.

102. *Id.*

103. *Id.* at 1374; see also DELOITTE, *supra* note 87 and accompanying text.

104. *Id.* at 1379 (citation omitted).

105. NATARAJAN ET AL., *supra* note 63, at 18.

106. *Id.*

107. *Id.*

108. *Id.*



Second, protection of data privacy may be compromised when using blockchain due to its transparency.<sup>109</sup> The data transactions on permissionless blockchains are often visible to all network participants. Although some transaction information can be encrypted, the metadata underlying that information is still publicly accessible. Thus, “pseudonym data” can actually be repersonalized by attackers seeking to “estimate the number of active entities” of a particular data set.<sup>110</sup> Because of this, a user can sometimes be identified just by looking at transaction patterns and other similar indicia.<sup>111</sup> Distribution of personal data via blockchain, however, violates data protection laws enacted in many jurisdictions which could result in severe ramifications.<sup>112</sup> For example, under the European General Data Protection Regulation (GDPR), companies may face pecuniary penalties of up to €20,000,000 or four percent of their total global turnover if they breach these rules.<sup>113</sup> More importantly, the GDPR consequences also “appl[y] to entities with no physical E.U. presence if they control or process covered personal information of E.U. residents.”<sup>114</sup> Because of this, entities adopting blockchain technology must consider their data privacy obligations and react accordingly.<sup>115</sup>

Third, the absence of a centralized infrastructure and a central entity may lead to concerns about effective governance of the blockchains and relevant jurisdiction issues. Particularly for public permissionless blockchain, since “no legal entity is in control of the distributed ledger,”<sup>116</sup> it is often “unclear to whom governance arrangements apply.”<sup>117</sup> By contrast, private permissioned blockchain has more straight-forward regulation because there is usually an administrator or owner that is subject to specific governance.<sup>118</sup>

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109. Zetzsche et al., *supra* note 93, at 1375.

110. *Id.*

111. NATARAJAN ET AL., *supra* note 63, at 20.

112. Zetzsche et al., *supra* note 93, at 1376.

113. See Council Regulation 2016/679, art. 83, 2016 O.J. (L 119) 83 (EU).

114. See Barmak Nassirian, *The General Data Protection Regulation Explained*, EDUCAUSE REV. (Aug. 28, 2017), <https://er.educause.edu/articles/2017/8/the-general-data-protection-regulation-explained>.

115. Zetzsche et al., *supra* note 93, at 1376.

116. NATARAJAN ET AL., *supra* note 63, at 19.

117. *Id.* at 18.

118. *Id.* at 18. *But see id.* at 18–19 (“[D]epending on the nature of the particular DLT system, the administrator may not in all cases have adequate means to enforce these arrangements among network participants.”).

#### 4. Blockchain with Smart Contracts - Excel Spreadsheets with Macros

“Smart contracts,” when discussing DLT and blockchain, are “programs that are written on the underlying distributed ledger,” or blockchain, “and are executed automatically by nodes on the network.”<sup>119</sup> Although they can be used to execute digital contracts, smart contracts are programs rather than digital format contracts.

To facilitate the public’s understanding of the nexus of smart contract and blockchain, I.T. practitioners have explained that “[b]lockchain and smart contracts can be loosely compared to Excel spreadsheets and macros.”<sup>120</sup> This is evident in many ways. First, Excel spreadsheets are a type of ledger which can store data such as text, numbers, images, and math formulas. Macros are pieces of Visual Basic for Applications code that are stored in an Excel spreadsheet and can automate certain tasks.

Second, “[i]n a similar way, smart contracts are pieces of code that are stored in a blockchain, and which automatically take certain actions” if predefined conditions are met.<sup>121</sup> These predefined conditions, smart contract triggers, are often directly related to certain transactions or data. Generally speaking, transactions or data recorded on the distributed ledger/blockchain will trigger the smart contract and the actions taken will be in turn recorded in the ledger/blockchain.<sup>122</sup> For example, consider this scenario. A seller is selling a product online via its blockchain-based sale platform at a price of \$1,000 (the trigger of smart contract). Using smart contract programs, we can facilitate the selling transaction. If a buyer has deposited \$1,000 into a seller’s bank account and uploaded the bank receipt to the blockchain, then the seller’s blockchain system will automatically dispatch the product that the buyer has ordered. Following dispatch, an invoice will be generated and stored in the blockchain for the buyer to

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119. *Id.* at 29 (“Another way of putting this is that smart contracts ‘allow for logic to be programmed on top of the blockchain transaction.’” Broadly speaking, “any instruction that could be executed by a computer could theoretically be run by a smart contract.”).

120. Rick Martin, *Will Smart Contracts Fuel the Growth of Blockchain?*, IGNITE (Nov. 29, 2018), <https://igniteoutsourcing.com/blockchain/blockchain-smart-contracts/>.

121. *Id.* See also NATARAJAN ET AL., *supra* note 63, at 15 (“DLT enables programming pre-agreed conditions that are automatically executed once certain conditions hold. This is referred to as ‘smart contracts’ . . .”).

122. Martin, *supra* note 120.

download and all transactions will be recorded in the blockchain/ledger.<sup>123</sup>

Third, Excel spreadsheets do not contain Macros unless users write and store Macros codes into that spreadsheets. Likewise, blockchains do not contains smart contracts unless blockchain owners/developers use them. Thus, blockchains serve as a “platform” for smart contracts that developers can use to automate certain functions.<sup>124</sup>

Overall, since smart contracts are based on blockchain platforms, the advantages and risks that apply to blockchains also apply to smart contracts. For example, due to the security and transparency characteristics of blockchain, smart contracts stored in the blockchain have to “be verifiable by each node on the network” and “all nodes on the network must see the same data.”<sup>125</sup> Some commenters have argued that this requirement generates a positive impact, specifically on the value chain of many MNEs,<sup>126</sup> by making it easier to audit and regulate blockchain transactions.<sup>127</sup>

### *B. Using Blockchain Smart Contract as RegTech for Implementing Transfer Pricing Rules*

As the number of blockchain users continues to grow, some practitioners and scholars believe that these networks may become a game-changing tool in the area of regulatory reporting.<sup>128</sup>

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123. This is public permissioned blockchain, which is open for the public to registered as a customer, but only authorized consumer can access the classified information (such as invoice).

124. See NATARAJAN ET AL., *supra* note 63, at 29 (“DLT systems provide a platform that allows for smart contracts, written in computer code, to actually control real-world assets, such as real estate, shares, land titles, or escrows, without the need for a third party that controls the release of the assets, such as a broker, a land title administrator or an escrow agent, for example.”).

125. *Id.* at 29.

126. Bhandari, *supra* note 95, at 3–4, 7.

127. See also WU GLOBAL TAX POLICY CENTER, BLOCKCHAIN 101 FOR GOVERNMENT: A NOTE PREPARED FOR THE COMMITTEE OF EXPERTS ON INTERNATIONAL COOPERATION IN TAX MATTERS 8 (2017) (“Multinationals transacting within themselves using blockchain and thereby allowing *real-time generation* of local files for audit review, may be relying on the blockchain-based applications to target an intrinsic problem of the transfer pricing—lack of information about comparable transaction between unrelated parties necessary to determine the transfer price.”).

128. See DANIEL MÜNCH & NOAH BELLON, EUR. MONEY & FIN. F., DLT AS A GAME CHANGER IN REGULATORY REPORTING? (2020), [https://www.suerf.org/docx/f\\_1415fe9fea0fa1e45dddceff5682239a0\\_9393\\_suerf.pdf](https://www.suerf.org/docx/f_1415fe9fea0fa1e45dddceff5682239a0_9393_suerf.pdf); see also Douglas W. Arner et al., *FinTech, RegTech, and the Reconceptualization of Financial Regulation*, 37 NW. J. INT’L L. & BUS. 371, 377 (2017) (“The mass of new postcrisis regulation has dramatically increased the compliance burden on financial institutions, in

Using blockchain technology, such as smart contracts, RegTech may help to speed up compliance and simplify the law enforcement process.<sup>129</sup>

The same holds true for applying blockchain-based RegTech to T.P. activities reporting. As some practitioners observed, DLT “offers the possibility to strongly improve regulatory reporting by providing high data granularity, high data quality and a transparent view on live transactions.”<sup>130</sup> Blockchain smart contracts can be used as information carriers to facilitate the reporting and law enforcement processes in various ways.<sup>131</sup>

### 1. Self-Check Tools for Taxpayers & Hypothetical Example

Blockchain smart contract technology can be used by taxpayers as a self-check tool for T.P. rule compliance. At a basic level, blockchain-based RegTech can be used to help an MNE group (taxpayer) strengthen its control on inter-company T.P. activities and ensure the transaction price is in line with ALP under T.P. rules. More specifically, as introduced above, once an MNE group moves its entire business operation to a blockchain platform, the blockchain’s smart contract function allows the blockchain to operate on a ‘if, then’ basis. This means that any intra-group contracts, those between associated companies within the MNE groups, can only be executed when the ‘if, then’ condition is satisfied. Since it is a private blockchain, the MNE group is free to program the blockchain in a way that ensures the intra-group transaction reflects business logic and functions in accordance with pre-determined T.P. policy.<sup>132</sup>

Consider the following example to illustrate this situation. Company A is a software developer and Company B is cloud platform and network infrastructure service provider. Both of these companies belong to a same MNE group, Group X. Company

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addition to the direct cost of regulatory penalties (over \$200 billion globally since the crisis).”).

129. See REETU KHOSLA, FINEXTRA & PEGASYSTEMS, BUILDING REGTECH INTO YOUR FINTECH STRATEGY 21 (2017), <https://www.pega.com/system/files/resources/2018-12/Building-Regtech-Into-Your-Fintech-Strategy.pdf>.

130. *DLT as a Game Changer in Regulatory Reporting?*, BEARINGPOINT SOFTWARE SOLUTIONS (last visited Jan. 13, 2020), <https://www.reg.tech/en/knowledge-hub/insights/dlt-distributed-ledger-technology-as-game-changer-in-regulatory-reporting/>.

131. See *id.*

132. See Sagar Wagh (@Sagar Wagh), *Potential Application of Blockchain in Multinational Transfer Pricing*, LINKEDIN (Mar. 26, 2017), <https://www.linkedin.com/pulse/potential-application-blockchain-multinational-transfer-sagar-wagh/>.

A has developed a cloud-based software (SaaS) that competes with Adobe's photoshop software. When commercializing its software product, Company A needs a cloud platform that can accommodate more than one million users simultaneously. This allows Company A to provide its subscribers with reliable software maintenance and updating services (IaaS and PaaS). Company B claims it can offer the services which Company A requires so Company A enters a cloud service contract with Company B.

Assuming Group X has established a private blockchain and has moved all business transactions to its blockchain platform, all associated enterprises within Group X, including Company A and Company B, would become the participants (nodes) of the blockchain. Assuming the blockchain has been programmed in accordance with T.P. rules, the smart contract function of blockchain will ensure that the contract will be executed only if Company B is able to broadcast that Company B has the capacity to provide PaaS and IaaS.

The smart contract function of blockchain will also ensure that the payment can be automatically made from Company A to Company B only if the invoice and relevant pricing details are broadcasted on the blockchain as per the pre-determined T.P. policy of Group X.<sup>133</sup> Assuming that Group X's T.P. policy requires that Company B (1) charge its users cost plus 20 percent on the service provided and (2) raise an invoice containing the pricing details consistent with T.P. rules, payment will be automatically made from Company A to Company B if these two conditions are met. If Company B offers Company A a price below that specified in the T.P. policy, the contract will not be executed by the system and no payment will be made.

By blocking suspicious T.P. transactions, the blockchain system serves as a taxation compliance system. This function may help to reduce the risk of any artificial breach of ALP.

## 2. Information Collection Tool for DEMPE Functional Analysis

Blockchain-based RegTech's information collection function may facilitate T.P. rule compliance analysis processes, particularly the analysis on intergroup transactions with intangible assets such as I.P. and cloud computing.

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133. See *id.* (providing a similar example).

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The process of creating intangible assets can be complex and involve multiple jurisdictions.<sup>134</sup> As a general tendency, countries have started to impose a higher burden on enterprises to justify their T.P. arrangements. For example, Australia amended its tax law and introduced a Diverted Profits Tax in 2017.<sup>135</sup> This new law adopts a U.K. style “pay [first] and argue later” approach,<sup>136</sup> allowing the ATO Commissioner to form a reasonable conclusion without being prevented by a lack of information provided by the taxpayer.<sup>137</sup> This increases the burden on MNE groups by requiring them to provide reliable evidence to justify their T.P. arrangements in relation to I.P. and cloud services.

Blockchain-based RegTech can help alleviate this burden by providing traceable records of the creation of intangible assets for MNE groups. Through the blockchain platform, an MNE group can easily record complete information on all business transactions between associated companies within the MNE group, such as the “start time and trading conditions of related transactions.”<sup>138</sup>

Because the OECD has adopted recommendations under the OECD’s BEPS Action plan, record keeping is particularly important for MNE groups’ compliance with T.P. rules in the OECD countries. The OECD’s BEPS Action Plan introduced the Development, Enhancement, Maintenance, Protection and Exploitation (DEMPE) framework through which taxation authorities conduct T.P. analysis on intangibles. Unlike traditional value chain analysis, which will “only identify the significant intangibles and contributions to transactions within the [organization,] the DEMPE analysis then considers which entities [in the organization] perform functions or bear [sic] risks and should therefore receive remuneration in relation to those

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134. See *supra* Part III.

135. See Diverted Profits Tax Act 2017 (Cth) s 3 (Austl.).

136. *Id.*

137. See AUSTRALIAN GOV’T, THE TREASURY, IMPLEMENTING A DIVERTED PROFITS TAX 2 (2016) <https://treasury.gov.au/consultation/implementing-a-diverted-profits-tax> (examining the governmental discussion paper for introducing Diverted Profit Tax, it explicitly stated that the Diverted Profit Tax will “provide the ATO with greater powers to deal with taxpayers who transfer profits, assets or risks to offshore related parties using artificial or contrived arrangements to avoid Australian tax and who do not cooperate with the ATO.”).

138. Xu Miao, *Blockchain Technology: Bringing Convenience to Transfer Pricing Management*, CHINA TAXATION NEWS, <http://w.cntransferpricing.com/index.php/zhuanrangdingjiayingdui/453.html> (last updated Nov. 16, 2018, 9:24 AM).

intangibles.”<sup>139</sup> This requires MNE groups to provide more details about intangible-related transactions to justify the legitimacy of their T.P. arrangements in different jurisdictions.<sup>140</sup>

As introduced above, the current development of intangibles often requires cooperation of different business entities within an MNE group which are often located in different jurisdictions. Thus, to justify T.P. activities between these entities, it is important for an MNE group to retain accurate business records so authorities can “determine which party has developed or acquired the intangibles used . . . , which party has the legal ownership[,] and which party receives the benefit.”<sup>141</sup> Blockchain technology can clearly help with this.

As some regulators have suggested, the information collected by blockchain-based RegTech may serve as important evidence for taxation authorities by helping to conduct more effective analysis on T.P. activities in relation to intangibles.<sup>142</sup> In doing so, in a small way, blockchain-based RegTech can help to achieve the OECD BEPS’s goal of “realign[ing] the location of taxable profits with the location of the underlying economic activity and value creation.”<sup>143</sup>

### 3. Information Analytic and Self-Management Tools for

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139. ORG. FOR ECON. CO-OPERATION & DEV., REVISED GUIDANCE ON PROFIT SPLITS PART I 162 (2016) (stating that DEMPE analysis surpasses value chain analysis by additionally considering received gains from sustaining risk and performing functions); see also Mun Yee Wong, *Overview of Development, Enhancement, Maintenance, Protection and Exploitation (DEMPE) Analysis*, TRANSFER PRICING SOLUTIONS MALAYSIA MALAY, <https://www.transferpricingolutions.my/knowledge/overview-of-development-enhancement-maintenance-protection-and-exploitation-dempe-analysis/> (stating that DEMPE analysis helps MNEs assign returns and costs, delineating transactions by asking questions based from the acronym, DEMPE); Gupta, *supra* note 62, at 208–18.

140. Not every transfer pricing activity should be prohibited. The *United Nations Practical Manual for Transfer Pricing* explicitly states that if an entity is able to produce an intangible, then it should be able to reap the rewards by licensing the intangible or using the intangible. U.N. PRACTICAL MANUAL 2013, *supra* note 48, at 191, 195.

141. *Id.*

142. *Id.*; see also Caterina Colling Russo & Hendrik Blankenstein, *Intangibles in a Post-BEPS World*, INT’L TAX REV. (May 20, 2016), <https://www.internationaltaxreview.com/Article/3556068/Intangibles-in-a-post-BEPS-world.html?ArticleId=3556068> (providing a concise introduction on how to apply the framework for analysing intercompany transactions involving intangibles).

143. See ORG. FOR ECON. CO-OPERATION & DEV., OECD/G20 BASE EROSION & PROFIT SHIFTING PROJECT, TAX CHALLENGES ARISING FROM DIGITALISATION – INTERIM REPORT 2018, at 111 (2018), (“[A] key part of the 2015 BEPS Action 5 Report requires that preferential tax regimes provide benefits only where the taxpayer is undertaking substantial activities.”).

### Taxpayers

In addition to serving as an information collection tool, blockchain-based RegTech can help with the T.P. analysis and facilitate the determination of a proper arm's length price for a transaction. It can be used to automatically identify and differentiate sophisticated intercompany services provided by entities within the same MNE group (intragroup services). The entities and beneficiaries involved in intragroup services generally share the expenses depending on the different functions they have undertaken or other agreed distribution indicators (e.g., sales or the number of personnel involved).<sup>144</sup>

These intragroup, intangible-related transactions are expected to cause an increase in T.P. disputes between tax authorities and MNEs.<sup>145</sup> An MNE group often has subsidiaries in different countries that have different internal operations, information collection processes, and standards of accounting. The quantification of a transaction price for a specific intragroup service often requires a lot of effort, including the identification and analysis of specific functions, asset-inputs, risks, and benefits of each subsidiary involved.<sup>146</sup>

Blockchain smart contract technology can certainly facilitate this process. It can integrate information, conduct functional analysis, and eventually standardize and automate the pricing calculation for intragroup services.<sup>147</sup> For example, the group can set up a unified method or standard for intragroup service fee calculations, convert the calculation method to an algorithm, and program this algorithm into the group's private blockchain. If the fee defined in an intragroup service agreement is not consistent with the fee calculated in accordance with the group's pricing standard, such a transaction will not be executed or validated by the blockchain system. The payment for such a service will not be released either. Blockchain-based RegTech not only helps to enhance the group's compliance with T.P. rules, but also may serve as a powerful instrument to enhance the internal management, pricing control, and overall efficiency of the MNE group's business operations.

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144. See Miao, *supra* note 138.

145. See Russo & Blankenstein, *supra* note 142.

146. See Miao, *supra* note 138.

147. *Id.*



#### 4. Documentation and Reporting Tools for Taxpayers

The blockchain-based RegTech may help MNEs achieve their T.P. information disclosure obligations, such as T.P. documentation preparations. Multinational groups with annual consolidated group revenue equal to or above EUR 750 million,<sup>148</sup> in accordance with the requirements of the *OECD BEPS Action Plan 13*,<sup>149</sup> must provide country by country reports that disclose the group's revenues, profits, taxes paid for global operations, as well as certain measures of economic activity that individual entities have taken in different jurisdictions.<sup>150</sup> By applying blockchain technology at the MNE group level, the tax and finance departments within the group (as a node in the blockchain) can easily obtain all of the real-time information required for CbC reports from the group's blockchain (distributed ledgers). This will facilitate the process of the enterprise's T.P. documentation preparations.<sup>151</sup>

Moreover, blockchain-based RegTech may help to improve the management and reporting of T.P. activities at the group level by facilitating contemporaneous material filing and intragroup transactions reporting.<sup>152</sup> Traditionally, the subsidiaries within an MNE group only record their own financial status, inventory status, and pricing calculation methods for intragroup transaction. They typically do not have knowledge of the business operations of other subsidiaries, particularly other subsidiaries in different jurisdictions. Once the MNE group moves its business operations to blockchain, the transaction flow and value chain of each business entity within the MNE group will be documented and distributed to the whole group.<sup>153</sup> This means that a standard

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148. ORG. FOR ECON. CO-OPERATION & DEV., OECD/G20 BASE EROSION AND PROFIT SHIFTING PROJECT, 2015 FINAL REPORTS: EXECUTIVE SUMMARIES 38 (2015), <http://www.oecd.org/ctp/beps-reports-2015-executive-summaries.pdf>.

149. *See generally* ORG. FOR ECON. CO-OPERATION & DEV., OECD/G20 BASE EROSION & PROFIT SHIFTING PROJECT, TRANSFER PRICING DOCUMENTATION AND COUNTRY-BY-COUNTRY REPORTING, ACTION 13: 2015 FINAL REPORT 9 (2015) [hereinafter OECD ACTION 13: 2015 FINAL REPORT](providing revised standards for transfer pricing documentation as well as a template for country-by-country reporting of revenues, profits, taxes paid, and certain measures of economic activity).

150. ORG. FOR ECON. CO-OPERATION & DEV., ACTION PLAN ON BASE EROSION AND PROFIT SHIFTING 23 (2013), <http://www.oecd.org/ctp/BEPSActionPlan.pdf> [hereinafter OECD BEPS ACTION PLAN] (obligating OECD members to develop rules to strengthen documentation of Transfer Pricing, including the standardization of certain Transfer Pricing reports (including Master File and Local File) and the exchange of country-by-country reporting).

151. *See* Miao, *supra* note 138.

152. *Id.*

153. *Id.*

set of historical data in relation to each asset and pricing status for each intragroup transaction will be fully recorded on the group's blockchain platform. The immutability feature of blockchain will ensure the integrity and consistency of all transaction records. These comprehensive and reliable transaction records will help MNEs save time, improve efficiency, and reduce compliance risks.<sup>154</sup>

### 5. Compliance and Auditing Tool for Taxation Authorities

The blockchain-based RegTech can be used to help taxation authorities monitor MNE's compliance of T.P. rules and improve taxation authority's capability of auditing suspicious intragroup T.P. transactions. This is achieved when an MNE group adds the taxation authority as a participator/node to the group's blockchain. The taxation authority will benefit from the key features of blockchain technology, such as transparency, control, and security. The taxation authority will also obtain direct access to transaction records on the group's blockchain platform, allowing it to directly retrieve relevant information on intragroup transactions, such as the method used for intragroup pricing determinations and the structure of the global value chain of the MNE group.<sup>155</sup>

By enabling tax authorities to interface with the platform, blockchain-based RegTech can establish a taxation system that makes transactions more transparent to taxation authorities without requiring an additional regulatory reporting requirement. Blockchain-based RegTech can also fulfill regulatory reporting requirements automatically.<sup>156</sup> This will help to reduce the operational costs of tax collection by helping taxation authorities improve efficiency.

Nevertheless, like blockchain technology itself, blockchain-based RegTech has its limits. Before formally adopting it to regulate T.P. activities, it is important to examine the potential risks and obstacles associated with applying blockchain-based RegTech and explore any possible solutions.

## PART V. POTENTIAL RISKS FOR USING BLOCKCHAIN-BASED REGTECH FOR TP RULE COMPLIANCE AND POSSIBLE

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154. *Id.*

155. But see *infra* Part V.A for a discussion on privacy concerns.

156. See *DLT as a Game Changer in Regulatory Reporting?*, *supra* note 130.

## SOLUTIONS

Generally speaking, the potential risks and obstacles for applying blockchain-based RegTech to regulate T.P. activities include three aspects: (1) technological risks; (2) judicial obstacles; and (3) policy obstacles.

*A. Technological Risks & Possible Solutions*

Blockchain-based RegTech is developed on the basis of blockchain technology. Thus, the three technological risks with applying blockchain technologies introduced in Part III naturally also exist for blockchain-based RegTech.

First, cybersecurity issues must be considered. As introduced above, blockchain/DLT, and thus blockchain-based RegTech, is not free from external data manipulation and is still subject to a 51% attack if a bad actor takes over the blockchain network's computing power.

This risk can be minimized by selecting the proper blockchain structure. As mentioned above, a 51% attack risk mainly exists for public permissionless blockchain, which is open to access by public users anonymously. Thus, when an MNE group establishes its blockchain network, it is much safer if the MNE group chooses private permissioned blockchain. Private blockchain only allows the companies within the group to be registered as participants. Permissioned blockchain only allows authorized parties/persons to access the relevant information on the blockchain. Together, these characteristics will reduce the risk of a cyberattack.

Second, data privacy risks should be well addressed. The transparency characteristics of blockchain means that all transaction records on the blockchain platform are open and visible to all network participators. There is no privacy between nodes since all transaction records are available on the distributed ledger. This could put the business entities on the blockchain platform at risk of breaching their legal duty of confidentiality under the Privacy Act and contract laws.<sup>157</sup>

This risk can also be minimized by implementing a private permissioned blockchain structure. Since it is a private blockchain, system administrator can grant different levels of access rights and operation rights to each node. For example, only financial and compliance departments within the company as well as parties involved in a specific intragroup transaction will have

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157. Zetzsche et al., *supra* note 93, at 1375, 1394.

access to data relating to that transaction. Assume Headquarter Company H, Company A, Company B, and Company C all belong to a same MNE group, Group X. These companies are nodes on the private blockchain of Group X. Companies A and B have an intragroup service agreement. In this case, only the Headquarter Company H, Companies A, and Company B will have access to the relevant transactional data. The system administrator of Group X can grant Headquarter Company H the authority to revise intragroup transaction rules (e.g., the arm's length pricing calculation method) or correct suspicious T.P. activities between subsidiary companies. Thus, the group can take advantages of the transparency feature of the blockchain technology without sacrificing privacy or breaching the duty of confidentiality owed to the clients.

Moreover, the MNE Group can also add the taxation authority as a participator/node of the blockchain and grant it access to the group's blockchain records. This must be done cautiously, however. It is necessary to ensure that the taxation authority can only access the data it has a right to access, such as the information listed under the CbC Report. Because the MNE group has an obligation to protect its clients' confidential information, any broad access granted to the taxation authority will likely cause the MNE group to be liable for the breach of the duty of confidentiality.<sup>158</sup>

Third, the decentralized structure of public permissionless blockchain creates concerns about effective governance as well as jurisdiction issues since the business entities on the group's blockchain are often located in different countries. Many questions need to be addressed, such as which business entity is governing the blockchain platform and which country's T.P. law should be applied to each transaction.

This risk can also be minimized by adopting a private permissioned blockchain structure. Since private blockchain has a specific network administrator or owner who is in charge of the whole blockchain platform, usually the headquarter company, this administrator will be responsible for any governance mistakes such as using an incorrect pricing calculation method. Because "joint control is likely to come along with joint liability,"<sup>159</sup> if an intragroup service agreement contains provisions breaching T.P. rules, all contracting parties should be jointly liable. The headquarter company, which sets pricing calculation method, will

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158. See Council Regulation 2016/679, 2016 O.J. (L 119) 19 (EU).

159. Zetzsche et al., *supra* note 93, at 1403.

be liable as well. Moreover, the immutability and transparency feature of blockchain will ensure all transaction records are safely stored on the blockchain platform. Once an MNE group moves all business operation to the blockchain, it is easy to track relevant transactions. These records may serve as important evidence for determining which country's law should be applied to a certain transaction.

Overall, when choosing appropriate blockchain structure for future RegTech instruments to regulate T.P. activities, it is important to take into account these potential risks and address them in advance.

*B. Judicial Obstacles & Possible Solutions - Evidence Legitimacy & Court's position in China*

In addition to the technological risks, it is necessary to explore and address potential judicial obstacles to using blockchain-based RegTech to regulate T.P. activities, particularly the legitimacy of using electronic records on the blockchain as evidences in court. Although blockchain/DLT may help collect comprehensive information in relation to transactions within an MNE group, these records are meaningful only when courts accept them as evidence.<sup>160</sup> Therefore, it is important for domestic judicial systems to formally recognize blockchain records as admissible judicial evidence.

It is encouraging to see that an increased number of international institutes and domestic judiciaries have started to accept digital evidence, including blockchain records. For example, the International Chamber of Commerce (ICC) Incoterm 2000 Rules listed certain documents which can be replaced by electronic data interchange messages.<sup>161</sup> The ICC Incoterm 2010 Rules further extended the acceptability of e-documents and gave "electronic means of communication the same effect as paper communication, as long as the parties so agree or where

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160. See Allison Stanfield, *Digital Evidence*, SG LEGAL SERVICES (Mar. 27, 2017), [http://sglegalservices.com.au/2017/03/27/digital-evidence/#\\_ftn28](http://sglegalservices.com.au/2017/03/27/digital-evidence/#_ftn28) (suggesting that "[b]efore a document, including a business record, is admitted in evidence, it is necessary that there should be an evidentiary basis for finding that it is what it purports to be. Ordinarily, documents are not taken to prove themselves, although there are exceptions such as public registers and certified documents.") (citations omitted).

161. See INTERNATIONAL CHAMBER OF COMMERCE, ICC INCOTERMS 2000: REPORT OF THE SECRETARY-GENERAL (A/CN.9/479) 599-601, 629 (1999), [https://www.uncitral.org/pdf/english/texts\\_endorsed/INCOTERMS2000\\_e.pdf](https://www.uncitral.org/pdf/english/texts_endorsed/INCOTERMS2000_e.pdf).

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customary.”<sup>162</sup> Thus, digital communication or e-documents stored on the blockchain can be used as evidences as long as the contracting parties so agree. At the domestic level, the courts in some countries have explicitly indicated that records on the blockchain can be used as evidences for court proceedings. On June 28, 2018 in an online copyright infringement case, the Internet Court in Hangzhou, China admitted evidence that was authenticated by blockchain technology for the first time.<sup>163</sup> The court examined the process of data collection and concluded that the data uploaded to a blockchain platform “reflected its source, generation and path of delivery, and [was] therefore reliable evidence.”<sup>164</sup> More importantly, the court identified key principles and specific elements used in determining the authenticity of evidence stored on a blockchain.<sup>165</sup> As general principles, the Internet court held that when determining the authenticity of electronic data, which is stored and deposited through blockchain or other technical means, an assessment should be conducted on a “case-by-case basis” with “an open and neutral attitude.”<sup>166</sup> More specifically, the assessment should focus on reviewing (1) the integrity of the electronic data source and content, (2) the security of technical means, (3) the reliability of methods of data storage, (4) the legality of the formation of the evidence, and (5) the degree of relevance to other evidence.<sup>167</sup>

In line with this case, on September 3, 2018, China’s Supreme People’s Court (SPC) issued a judicial interpretation in relation to electronic evidence.<sup>168</sup> The SPC Interpretation explicitly “allows

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162. See *The Incoterms Rules 2010*, INT’L CHAMBER COM., <https://iccwbo.org/publication/incoterms-rules-2010/> (last visited Jan. 13, 2020).

163. See Wei Wang & Yang Zhou, *Blockchain Risk Series Thirteen: From the First Blockchain Certificate Judgment in China to See the Great Impact of Blockchain on Chinese Business*, LEXOLOGY (July 3, 2019), <https://www.lexology.com/library/detail.aspx?g=0dff9120-c661-4045-8b11-1364725a1fa3> (China). For a full text of the court decision in *Huangzhou Huatai Yimei Culture Media Ltd vs. Shenzhen Daotong Technology Development Ltd*, see Zhang Yanlai, *The Nation’s First Blockchain Deposit Judgment Was Born in Hangzhou Internet Court (with Judgment)*, CHINA INTELL. PROP. INFO. NETWORK (July 2, 2018, 3:13 PM), [http://www.iprchn.com/cipnews/news\\_content.aspx?newsId=109090](http://www.iprchn.com/cipnews/news_content.aspx?newsId=109090) (China).

164. Sophie Hunter, *China’s Innovative Internet Courts and Their Use of Blockchain Backed Evidence*, CONFLICT LAWS (May 28, 2019), <http://conflictoflaws.net/2019/chinas-innovative-internet-courts-and-their-use-of-blockchain-backed-evidence/>.

165. See Wang & Zhou, *supra* note 163; see also Yanlai, *supra* note 163.

166. *What Kind of Blockchain Deposit Has Legal Effect? Hangzhou Internet Court Gives Four Elements*, SOHU (Apr. 26, 2019, 7:42 PM), [http://www.sohu.com/a/310520659\\_260616](http://www.sohu.com/a/310520659_260616).

167. *Id.*

168. Zuigao Renmin Fayuan Guanyu Hu Lianwang Fayuan Shenli Anjian Ruogan Wenti De Guiding (最高人民法院关于互联网法院审理案件若干问题的规定) [Provisions of the

evidence stored and verified on blockchain platforms to be used in legal disputes heard by the three [I]nternet courts in Hangzhou, Beijing, and Guangzhou.”<sup>169</sup> Article 11 of the SPC Interpretation allows Internet courts to consider electronic evidence “that can be proven authentic through electronic signatures, time stamps, hash value checks, and tamper-proof verification methods stored on blockchain platforms.”<sup>170</sup>

Because China is a civil law country, Article 11 is binding legal precedent and provides a strong foundation for other internet courts in China to “recognize the legality of blockchain as a method for storing and authenticating digital evidence.”<sup>171</sup> This creates a sound judicial environment for implementing blockchain-based RegTech for T.P. rule compliance. The trend in China to accept electronic data as evidence has the potential to influence judiciaries’ opinions in other jurisdictions.<sup>172</sup>

*C. Policy Obstacles and Possible Solution – Building a Supportive Environment for Blockchain-based RegTech Application*

In addition to the technological risks and judicial obstacles, it is necessary to pay attention to potential policy obstacles and impacts of implementing blockchain-based RegTech. The openness of judiciaries and regulators to adopt new technology, including blockchain technology, may have a direct impact on the success of applying blockchain-based RegTech to regulate T.P. activities.

1. Openness of Judiciaries and Potential Limits of Judicial Blockchain

Judiciaries in many countries have found that “[b]lockchain-related innovations are increasingly becoming relevant to legally authenticate evidence.”<sup>173</sup> One commentator suggests that

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Supreme People’s Court on Several Issues on the Hearing of Cases by Internet Courts] (promulgated by the Supreme People’s Court of the People’s Republic of China., Sept. 3, 2018, effective Sept. 7, 2018), <http://www.court.gov.cn/zixun-xiangqing-116981.html> (China); see also Zhao, *supra* note 11.

169. Laney Zhang, *China: Supreme Court Issues Rules on Internet Courts, Allowing for Blockchain Evidence*, GLOBAL LEGAL MONITOR (Sept. 21, 2018), <http://www.loc.gov/law/foreign-news/article/china-supreme-court-issues-rules-on-internet-courts-allowing-for-blockchain-evidence/>.

170. *Id.*

171. Zhao, *supra* note 11.

172. Hunter, *supra* note 164 (“This post sheds light on this new model and how it has potential to influence other jurisdictions.”).

173. *Id.* (stating also that because “a blockchain generates immutable, time-stamped data which can then be used as an auditable trail, it seems likely that the legal sphere will

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Chinese judiciaries seem to be “ahead of the game in this respect.”<sup>174</sup> In October 2018, Hangzhou Internet Court officially launched its judicial blockchain and “became the first court [in China] to use blockchain technology to settle disputes.”<sup>175</sup> The blockchain platform was developed by Gongdao Network Technology with technical support from Ant Finance Ltd.<sup>176</sup> It allows users to register, log on to the judicial platform, and use the internet to find evidence, such as copyright infringement websites or purchase records.<sup>177</sup> Users can then “download the proof, and a hash of it is stored on the blockchain.”<sup>178</sup> “The platform offers typical blockchain benefits: encryption, the ability to electronically sign evidence[,] and cost savings.”<sup>179</sup>

It seems that the judicial blockchain platform works well so far. In the recent 2019 Forum on China Intellectual Property Protection, Zhang Wen, the president of the Beijing Internet Court, stated that the Internet court “deployed blockchain in 58 cases to collect and provide evidence,” and “of the 41 cases concluded [with blockchain technology] so far, parties chose to settle out of court rather than litigate in 40 cases with compelling evidence from blockchain.”<sup>180</sup>

Nevertheless, some limits of applying the judicial blockchain platform have been identified. According to the Internet Financial Trial Big Data Analysis Report (the Report) issued by the Hangzhou Internet Court, isolated data island issues still exist among financial entities, regulatory authorities, and courts.<sup>181</sup> The Report further pointed out that, “although the Hangzhou Internet Court has successively launched the electronic evidence depositing platform and the judicial blockchain platform,” the regulators in

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get heavily influenced in the near future by the security of the blockchain (which is set before any transactions or documentation takes place).”).

174. *Id.*; see also Simon Webber et al., *INSIGHT: Blockchain and Distributed Ledgers—Another Wave of Challenges to Tax and Transfer Pricing From the Digital Economy*, 2019 DAILY TAX REP. (BNA) No. 95, at 15, 16 (May 17, 2019).

175. *Hangzhou Internet Court’s Judicial Blockchain Goes Online*, CHINA LEGAL INFO. CENTER, [http://www.chinadaily.com.cn/m/chinalic/2018-10/16/content\\_37080413.htm](http://www.chinadaily.com.cn/m/chinalic/2018-10/16/content_37080413.htm) (last updated Oct. 16, 2018).

176. Mark Barley, *Chinese Court Launches Blockchain Evidence Platform*, LEDGER INSIGHTS, <https://www.ledgerinsights.com/chinese-court-blockchain-evidence-platform/> (last visited Jan. 13, 2020).

177. *Id.*

178. *Id.*

179. *Id.*

180. Ana Alexandre, *Chinese Internet Court Employs AI and Blockchain to Render Judgement*, COINTELEGRAPH (Apr. 25, 2019), <https://cointelegraph.com/news/chinese-internet-court-employs-ai-and-blockchain-to-render-judgement>.

181. *See id.*



financial sectors “have not yet developed the corresponding data transmission platform[s]” and do not have capacity for data transmission.<sup>182</sup> As a result, these regulators do not have the capability to electronically submit financial data to the Court’s blockchain platforms.<sup>183</sup> Therefore, it is clear that the success of blockchain-based RegTech requires the cooperation of all stakeholders. If only one stakeholder has the capacity to use blockchain/DLT, the effectiveness of blockchain-RegTech will be significantly limited.

## 2. Openness of regulator & Feasibility in taxation sectors

The cooperation between all stakeholders is also important when applying blockchain-based RegTech to taxation, including T.P. activities. For example, although China’s Internet Courts have developed their capacities to use blockchain platforms to facilitate dispute resolution, if the taxation authority SAT does not develop a similar technological capacity for DLT applications, the chance of successfully applying blockchain-based RegTech to regulate T.P. activities would decrease.

However, the Chinese taxation authority has demonstrated a sound openness in relation to the adoption of blockchain technology. For example, China’s taxation authority in Shenzhen has partnered with China’s internet giant Tencent since 2018 to use blockchain to combat tax evasion.<sup>184</sup> They have jointly established an “Intelligent Tax” innovation lab in order to enhance technological innovation used in the taxation process.<sup>185</sup> As its first product, the lab has developed a blockchain-based invoice solution for transport systems in Shenzhen.<sup>186</sup> With this technology, subway ride invoices will be recorded to the blockchain platform.<sup>187</sup>

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182. *The Report Pointed Out that Although the Hangzhou Internet Court Has Launched the Judicial Blockchain Platform, It Is Still Unable to Submit Electronic Financial Data*, BLOCKING, <https://blocking.net/13622/the-report-pointed-out-that-although-the-hangzhou-internet-court-has-launched-the-judicial-blockchain-platform-it-is-still-unable-to-submit-electronic-financial-data/> (last visited Jan. 13, 2020).

183. *Id.*

184. Sujha Sundararajan, *Chinese City to Use Blockchain in Fight Against Tax Evasion*, COINDESK, <https://www.coindesk.com/tencent-partners-with-city-authority-to-combat-tax-evasion-with-blockchain> (last updated May 25, 2018, 12:04 PM).

185. *Id.*

186. *Tencent Enables Blockchain Invoicing for Transport in Shenzhen, China*, LEDGER INSIGHTS, <https://www.ledgerinsights.com/tencent-blockchain-invoicing-china> (last visited Jan. 13, 2020).

187. See Miles Goscha, *Briefing: China’s First Blockchain-Based Subway Invoices Issued in Shenzhen*, TECHNODÉ (Mar. 20, 2019) <https://technode.com/2019/03/20/briefing-chinas-first-blockchain-based-subway-invoices-issued-in-shenzhen/>.

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Once the transaction is complete, the blockchain platform will automatically generate a digital invoice which can be accessed through the WeChat or Shenzhen Metro mobile apps.<sup>188</sup> On March 18, 2018, the “first blockchain-based invoice was issued for the metro [which departed] from Shenzhen Futian station.”<sup>189</sup> According to the data provided by the lab and metro, using the blockchain-based digital invoice as an alternative for paper-based invoices will help to reduce the printing cost by 400,000 CNY per year.<sup>190</sup> Additionally, as some commentators noted, blockchain-based invoices are “harder to tamper with” which makes it easier for taxation authorities to trace their “source and authenticity.”<sup>191</sup>

At this time, there is no evidence that the Chinese taxation authority has developed its own blockchain-based RegTech for T.P. rule enforcement. Nevertheless, it may have obtained the capacity to collaborate with the Chinese Internet courts in this area since both of them have started to use blockchain-based RegTech to facilitate their duties. Although “blockchain technologies are still in their relative infancy and still suffer their own frictions,”<sup>192</sup> the attempts of the Chinese judiciaries and taxation authorities to adopt blockchain technology may provide useful insights for counterparts in other jurisdictions to conduct similar attempts.

## PART VI. CONCLUSION

This article examined the recent development of T.P. activities by MNE groups and explored both risks and feasibilities of using blockchain-based RegTech to regulate these activities. It first provided an overview of the main forms of cloud-related T.P. activities and key challenges for implementing T.P. rules. It then

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188. See *Tencent Enables Blockchain Invoicing for Transport in Shenzhen, China*, *supra* note 186.

189. *Id.*; see also Guanyu Shidian Yingyong Shuilian Qukuai Lian Dianzi Fapiao Pingtai Kaiju Tongyong Lei Fapiao De Gonggao Guojia Shuiwu Zongju Guangdong Sheng Shuiwu Ju Gonggao Erling Yiba Nian Di Ershi Sihao (关于试点应用“税链”区块链电子发票平台开具通用类发票的公告 国家税务总局广东省税务局公告2018年第24号) [Announcement of the State Administration of Taxation, Guangdong Provincial Taxation Bureau on the Pilot Application of the “Tax Chain” Blockchain Electronic Invoice Platform for Issuing General Invoices, Announcement No. 24, 2018 of the Guangdong Provincial Taxation Bureau of the State Administration of Taxation] (promulgated by the St. Admin. of Tax'n Guangdong Provincial Tax'n Bureau, Dec. 24, 2018, effective Dec. 24, 2018), [http://www.gd-n-tax.gov.cn/gdsw/ssfggds/2018-12/05/content\\_b9645c6d25d54cb99517968bb4aa0b1d.shtml](http://www.gd-n-tax.gov.cn/gdsw/ssfggds/2018-12/05/content_b9645c6d25d54cb99517968bb4aa0b1d.shtml) (China).

190. *Tencent Enables Blockchain Invoicing for Transport in Shenzhen*, *supra* note 186 (“Previously travelers had to visit Shenzhen Metro customer services to get an invoice, with roughly 160,000 paper invoices issued daily.”).

191. *Id.*

192. Webber et al., *supra* note 174, at 16.

introduced key features and potential limits of DLT, blockchain, and smart contracts. Next, it discussed how blockchain smart contracts can be used as RegTech for implementing T.P. rules. In order to provide a more balanced analysis, it not only examined feasibilities but also potential obstacles for using blockchain-based RegTech to regulate T.P. activities, including potential technological, judicial and policy risks and obstacles. On this basis, it explored possible solutions for these risks/obstacles by drawing on insights from the recent attempts by enterprises, judiciaries, and taxation authorities in China.

Blockchain-based RegTech may serve as an important supplement for T.P. rule enforcement in many ways, such as serving as a self-check tool, information collector, analyst, reporting tool for taxpayers, and compliance and auditing tool for taxation authorities. However, the advantages of blockchain smart contracts should not be overstated because “blockchain technologies are still in their relative infancy and still suffer their own frictions.”<sup>193</sup>

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193. *Id.*