The Price of Fairness

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The COVID-19 pandemic led to acute supply shortages across the country as well as concerns over price increases amid surging demand. In the process, it reawakened a debate about whether and how to regulate "price gouging"—a controversy that continues as inflation has accelerated even as the pandemic abates. Animating this debate is a longstanding conflict between laissez-faire economics, which champions price fluctuations as a means to allocate scarce goods, and perceived norms of consumer fairness, which are thought to cut strongly against sharp price hikes amid shortages.

This Article provides a new, empirically grounded perspective on the price gouging debate that challenges several aspects of conventional wisdom. We report results from a survey experiment administered to a large, nationally representative sample during the height of the pandemic's initial wave. We presented participants with a variety of vignettes involving price increases, eliciting their reactions along two dimensions: the degree of unfairness they perceived, and the legal response they favored. Overall, we find that participants are more tolerant of price increases than either the existing behavioral economics literature predicts or most state price gouging statutes countenance. But we also find that price fairness perceptions can be highly sensitive to context. For example, participants are much more tolerant of moderate price increases if they previously are asked to contemplate large price increases. Moreover, participants are substantially more willing to accept a price increase when it is accompanied by an apology or a public-minded rationale, such as supporting furloughed employees, or both. We explore the implications of our findings for behavioral economics, pricing practices, and legal reform.

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I. INTRODUCTION

When does ordinary profit-seeking behavior cross the line to become "price gouging"? Sages have wrestled with this conundrum for millennia.[1] The age-old question attracted renewed attention in early 2020 as the outbreak of COVID-19 set off a wave of shortages across the United States and around the world. Sellers frequently responded by raising prices, thereby triggering complaints from consumers. Law enforcement officials intervened by bringing hundreds of actions for alleged violations of state and local price gouging statutes.[2]

Even as the COVID-19 crisis recedes, or at least settles into a new normal, concerns over price fairness have persisted as inflationary pressures mount. Throughout 2022, prominent progressive politicians such as Senators Elizabeth Warren of Massachusetts and Bernie Sanders of Vermont accused oil producers, supermarkets, fast-food chains, and other large corporations of fueling inflation by gouging consumers to pad their own profits.[3] In May 2022, Senator Warren

[1] *See* Hershey H. Friedman, *Biblical Foundations of Business Ethics*, 3 J. MKTS. & MORALITY 43, 49 (2000) (recounting the debate in the Babylonian Talmud over the appropriateness of Rabbi Judah's profit margin on wine sales).

[2] *See, e.g.*, Lauren Sujeeth & Joshua M. Deitz, *Price Gouging Concerns Rise During the COVID-19 Pandemic*, ROGERS JOSEPH O'DONNELL, https://www.rjo.com/publications/price-gouging-concerns-rise-during-covid-19-pandemic/ [https://perma.cc/XUU7-PXPW]. At present, federal law plays a minimal role in regulating price gouging practices. *See, e.g.*, Annie Palmer, *Top Amazon Exec Calls for Federal Price Gouging Law Amid Coronavirus Scams*, CNBC (May 13, 2020), https://www.cnbc.com/2020/05/13/top-amazon-exec-calls-for-federal-price-gouging-law-amid-coronavirus-scams.html [https://perma.cc/V4BJ-LRB3].

[3] A.D. Quig, *Bernie Sanders, in Chicago, Blasts Oil Companies over High Gas Prices: Pass a 'Windfall Profits Tax on Those Crooks*,*'* CHI. TRIB. (June 17, 2022), https://www.chicagotribune.com/news/breaking/ct-bernie-sanders-union-rally-chicago-20220617-xkj43jmokjbflgpovemodztnu4-story.html [https://perma.cc/2DX9-GKWK]; Press Release, Elizabeth Warren, Sen., U.S. Senate, As Gas Prices Rise, Warren, Whitehouse, Khanna, Colleagues Introduce Bill to Stop Big Oil Profiteering and Provide Consumers Relief (Mar. 10, 2022), https://www.warren.senate.gov/newsroom/press-releases/as-gas-prices-rise-warren-whitehouse-khanna-colleagues-introduce-bill-to-stop-big-oil-profiteering-and-provide-consumers-relief [https://perma.cc/W77N-8F99].

of Massachusetts introduced legislation—cosponsored by Sanders and eight other colleagues—that would make it illegal for a seller to offer a good or service at an "unconscionably excessive price during an exceptional market shock."[4] The next month, the Consumer Price Index logged a 9.1% year-over-year gain—the largest jump in more than four decades[5]—all but assuring that price gouging controversies would remain front and center for the foreseeable future.

The debate over price gouging and inflation has involved, in part, a disagreement about the causes of the current rise in price levels. Sanders, Warren, and others have argued that "corporate greed," manifested through price gouging, is contributing significantly to inflation.[6] Economists and economically minded pundits have emphasized other inflationary factors such as loose monetary and fiscal policy and have argued that corporate cupidity, which presumably existed in pre-pandemic times too, cannot explain the change in inflation rates.[7] Causality aside, charges of corporate greed and price gouging

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[4] Price Gouging Prevention Act of 2022, S. 4214, 117th Cong. § (3)(a) (2022). Representative Jan Schakowsky of Illinois introduced a parallel bill with twenty-two cosponsors the same month. Price Gouging Prevention Act of 2022, H.R. 7736, 117th Cong. § (3)(a) (2022).

[5] *See* Gabriel T. Rubin, *U.S. Inflation Hits New Four-Decade High of 9.1%*, WALL ST. J. (July 13, 2022), https://www.wsj.com/articles/us-inflation-june-2022-consumer-price-index-11657664129 [https://perma.cc/NQJ8-HV2S].

[6] *See* Scott Horsley, *Inflation Is Still Surging and Some Democrats See One Culprit: Greedy Companies*, NAT'L PUB. RADIO (Jan. 12, 2022), https://www.npr.org/2022/01/12/1072295047/inflation-is-still-surging-and-some-democrats-see-one-culprit-greedy-companies [https://perma.cc/S2PE-H42D]. As Senator Warren put it in a recent Senate Finance Committee hearing:

> [M]arket concentration has allowed giant corporations to hide behind claims of increased costs to fatten their profit margins. So the consumer pays more both because the corporation faces higher costs and because . . . the corporation can increase prices. . . . [H]igher prices have many causes, and we can't overlook the role that concentrated corporate power has played in creating the conditions for price gouging.

Press Release, Elizabeth Warren, Sen., U.S. Senate, At Hearing, Warren Presses Chair Powell on the Role of Corporate Concentration in Driving Inflation (Jan. 11, 2022), https://www.warren.senate.gov/newsroom/press-releases/at-hearing-warren-presses-chair-powell-on-the-role-of-corporate-concentration-in-driving-inflation [https://perma.cc/FBR6-ZFKD] (quoting Senator Warren's questioning of Chairman of the Federal Reserve, Jerome Powell).

[7] *See, e.g.*, Karl W. Smith, Opinion, *Elizabeth Warren Is Wrong About Corporate Greed*, BLOOMBERG (Jan. 12, 2022), https://www.bloomberg.com/opinion/articles/2022-01-12/what-elizabeth-warren-gets-wrong-about-competition#xj4y7vzkg [https://perma.cc/X47K-AHUH]; Horsley, *supra* note 6 ("[As an Obama Administration economist has observed,] '[C]ompanies always want to maximize their profits' . . . . 'I don't think they're doing it any more this year than any other year.'"); WSJ Opinion: Potomac Watch, *Biden's Inflation Blame Game*, WALL ST. J., at 05:57 (Jan. 11, 2022), https://www.wsj.com/podcasts/opinion-potomac-watch/biden-inflation-blame-game/21cb0d8e-b69e-49c1-8762-a95d9db53d61 [https://perma.cc/JV3U-XV2Z] ("And the idea that the reason for that is that these energy companies

highlight the significant normative dimensions of consumer pricing. In the minds of many—senators and ordinary Americans alike—rapid price hikes that take advantage of strong consumer demand are ethically objectionable regardless of their impact on topline inflation numbers.[8] Social perceptions of price fairness are worthy of investigation regardless of whether one harbors ethical qualms about price gouging, since such perceptions can dramatically affect market dynamics and political outcomes.

A growing empirical literature seeks to understand when and why price increases activate societal norms related to fairness. By far the most influential work in the price gouging canon is a 1986 article by Daniel Kahneman, Jack Knetsch, and Richard Thaler (KK&T),[9] two of whom (Kahneman and Thaler) went on to win Nobel Prizes for that and related research.[10] In their study, KK&T report results from telephone surveys of residents of two Canadian metropolitan areas, Toronto and Vancouver, who were interviewed regarding their perceptions of various pricing practices during hypothetical shortages.[11] The authors found that respondents in their sample generally considered it unfair for stores to raise prices due to a surge in demand or a sudden shortage, though consumers looked more favorably upon price hikes that were linked to increases in supplier costs.[12] Based on their findings, KK&T conjectured that fairness norms may subvert standard supply-and-demand intuitions, with sellers refraining from marking up prices during shortages for fear of inviting consumer backlash.[13]

The onset of COVID-19 presented a unique opportunity to revisit the price gouging literature amid a real and palpable crisis. Our project is partly one of replication: we seek to test whether U.S. consumers confronted with salient and immediate shortages caused by COVID-19 display the same fairness intuitions as Canadian consumers surveyed by KK&T under very different circumstances over three-and-a-half decades ago. Replication analysis is critically important to the collective research enterprise,[14] and one of our contributions is to evaluate the robustness of existing results.

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just suddenly became extra greedy in the last three or six months. I mean, who do they expect to believe that?").

[8] *See* Horsley, *supra* note 6.

[9] *See generally* Daniel Kahneman, Jack L. Knetsch & Richard Thaler, *Fairness as a Constraint on Profit Seeking: Entitlements in the Market*, 76 AM. ECON. REV. 728 (1986).

[10] *See* Deborah Smith, *Psychologist Wins Nobel Prize*, AM. PSYCH. ASS'N (Dec. 2002), https://www.apa.org/monitor/dec02/nobel.html [https://perma.cc/TJS4-7SZH]; John Cassidy, *The Making of Richard Thaler's Economics Nobel*, NEW YORKER (Oct. 10, 2017), https://www.newyorker.com/news/john-cassidy/the-making-of-richard-thalers-economics-nobel [https:/ perma.cc/YVR7-2JWB].

[11] *See* Kahneman, Knetsch & Thaler, *supra* note 9, at 729 & n.1.

[12] *See id.* at 738–40.

[13] *Id.* at 738. Or, in the authors' words, "the market will fail to clear in the short run." *Id.*

[14] *See generally* Gary King, *Replication, Replication*, 28 PS: POL. SCI. & POL. 444, 444–45 (1995) (emphasizing the importance of replication studies); Jason M. Chin & Kathryn

But our ambition goes beyond replication in several ways. First, we situate the empirical literature on consumer fairness perceptions within several overlapping policy frameworks for understanding price gouging laws. More specifically, we explore when, why, and how fairness perceptions may justify and inform the design of price gouging statutes. Second, we attempt to benchmark our respondents' views against existing laws on the books related to price gouging across the United States, asking whether the contours of such laws comport with the public's fairness intuitions. Our results are thus directly relevant to the study of consumer protection laws at the federal, state, and local levels. Third, we extend the existing empirical literature by evaluating an expanded range of factors that potentially shape price fairness perceptions. We seek to determine whether consumers are more sensitive to the relative or absolute magnitude of price increases, whether increases in prices for necessities generate different reactions than increases in prices for luxury goods, whether merchants can reframe price increases in ways that make consumers more accepting of those changes, and whether consumers may be amenable to alternative allocation mechanisms such as rationing or auctions during an emergency.

To gain purchase on the questions above, we conducted two survey experiments using a large, nationally representative sample of U.S. adults. Our surveys were administered during the late spring of 2020, just as COVID-19 related shortages were rippling across the country, but well before inflation reached decades-high levels. We report the results of those surveys and supplement their results with an analysis of the price gouging laws of all fifty states and the District of Columbia, highlighting areas in which consumer fairness perceptions conform to and diverge from legal prescriptions. We then consider the implications of our findings for social and behavioral scientists, market participants, and legal policymakers.

Overall, our participants demonstrated substantially *greater* willingness to accept price increases in a shortage than conventional wisdom predicts. For example, KK&T presented Canadian consumers with a scenario in which a hardware store raised the price of snow shovels from $15 to $20 after a large snowstorm; they report that more than four-fifths of respondents (82%) characterized the price increase as unfair.[15] When we presented our U.S. survey participants with a scenario in which a supermarket raised the price of a bottle of hand sanitizer after the onset of COVID-19 by the same relative magnitude as the price increase in the KK&T study, fewer than half deemed the price increase to be unfair.[16] Notably, our results remained broadly the same when we changed the item in question from hand sanitizer (a necessity in the context of

Zeiler, *Replicability in Empirical Legal Research*, 17 ANN. REV. L. & SOC. SCI. 239, 240–41 (2021).

[15] *See* Kahneman, Knetsch & Thaler, *supra* note 9, at 729.

[16] *See infra* Part IV.B.2.a.

a droplet-borne infection) to potato chips (an item much harder to characterize as necessary[17]), and when we manipulated price and quantity for bulk purchases of hand sanitizer at higher sticker prices.[18] Perhaps even more strikingly, roughly the same fraction (less than half of all respondents) considered a $15 to $20 price increase to be unfair when we presented them with the identical question regarding snow shovels used in KK&T.[19]

Based on their findings, KK&T conjectured that fairness norms can powerfully affect—and even upend—standard economic intuitions of supply and demand, causing sellers to think twice about markups even during shortages, for fear of violating strong fairness norms and stoking customer backlash.[20] Dozens of scholars have since replicated KK&T's finding in a variety of differing laboratory studies.[21] Others have gone further, articulating the policy implications of strong fair-pricing norms in several settings ranging from corporate reputations[22] to wage rigidity[23] to New-Keynesian monetary policy.[24] In each application, researchers have concluded that even the most mercenary of profit-maximizing corporations would be inclined to moderate price increases in the face of strong and salient fairness norms.[25] While our study does not speak to corporate motivations, it suggests that—at least within our broadly representative sample at the historical moment in which our study took place—those fairness norms were far more nuanced than many scholars previously believed.

We then go on to explore a wider range of conditions affecting consumer perceptions of price fairness in an emergency. Of particular note, we find that when consumers are informed that extra revenues from a price increase will be used to provide paid leave for workers, the share who consider the price increase

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17 By way of example, at least two out of the three coauthors on this Article do not view potato chips as a necessity.

18 *See infra* Part IV.B.1.

19 *See infra* Part IV.B.1. As explained below, a portion of the divergence between our results and KK&T's may be attributable to "order effects," whereby subjects in our study became more permissive of certain moderate price increases after having first been exposed to an extreme price hike. This interaction further underscores the apparent contingency of manifest consumer fairness perceptions, and the challenges that attend legal policy making in the face of such contingencies. *See infra* Parts III.A.4, IV.

20 Kahneman, Knetsch & Thaler, *supra* note 9, at 738. Or, in the authors' words, "the market will fail to clear in the short run." *Id.*

21 *See, e.g.*, sources cited *infra* notes 123–151 and accompanying text.

22 *See* Michael Luca & Oren Reshef, *The Effect of Price on Firm Reputation*, 67 MGMT. SCI. 4408, 4408 (2021).

23 *See* Truman F. Bewley, *Fairness, Reciprocity, and Wage Rigidity*, *in* BEHAVIORAL ECONOMICS AND ITS APPLICATIONS 157, 157 (Peter Diamond & Hannu Vartiainen eds., 2007).

24 *See* Erik Eyster, Kristóf Madarász & Pascal Michaillat, *Pricing Under Fairness Concerns*, 19 J. EUR. ECON. ASS'N 1853, 1854 (2021); Julio J. Rotemberg, *Fair Pricing*, 9 J. EUR. ECON. ASS'N 952, 952–53 (2011).

25 *See, e.g.*, Eyster, Madarász & Michaillat, *supra* note 24, at 1861.

to be unfair falls dramatically, to less than one-fifth.[26] This finding is especially important because it suggests conditions under which price increases can play a role in allocating scarce resources during a shortage without triggering a strong backlash from purchasers. It also underscores the influence of factors beyond dollar amounts and percentages on consumer perceptions of price fairness.

We also investigate consumer reactions to two alternative allocative mechanisms: quantity rationing and auctioning. The existing empirical literature on consumer attitudes toward rationing and auctioning is inconclusive, though some studies suggest resistance to rationing[27] and acceptance of auctioning.[28] Our results on both scores are unambiguous: consumers are broadly willing to accept voluntary rationing, but they bristle at auctioning. Indeed, nearly all respondents (97%) considered rationing (e.g., a rule of one bottle of hand sanitizer per customer) to be fair, while less than one-fifth thought it was fair for a store to allocate scarce items through an auction.[29] This finding may help explain the widespread voluntary use of quantity limits amid shortages notwithstanding what economists understand to be the undesirable and potentially perverse allocative consequences of such limits.

Finally, and perhaps most surprisingly, we find that consumers do *not*, on the whole, think that price increases of the magnitudes contemplated by the prior empirical literature ought to trigger punishment. When asked how they believe authorities ought to respond to a supermarket that raises the price of hand sanitizer by 33% after the onset of the COVID-19 crisis, approximately three-fifths of respondents said the government should do "nothing."[30] When told that profits from hand sanitizer sales would be used to provide paid leave to workers, support for the do-nothing response to the same magnitude price change increased to nearly four out of five.[31] This finding is particularly striking given that, in many states, a price increase of that magnitude in an emergency (whether justified or not by a plan to enhance worker benefits) would be prima facie illegal and in many cases punishable as a misdemeanor.[32]

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[26] *See infra* Part IV.B.2.c.

[27] *See* Robert J. Shiller, Maxim Boycko & Vladimir Korobov, *Popular Attitudes Toward Free Markets: The Soviet Union and the United States Compared*, 81 AM. ECON. REV. 385, 390 (1991); John G. Marcis, Alan B. Deck, Daniel L. Bauer & Vicki King-Skinner, *A Study of Students' Views of Market Fairness*, 15 J. ECON. & ECON. EDUC. RSCH. 25, 31 tbl.1, 32 tbl.2 (2014). We discuss both studies in further detail in Part III.C.

[28] *See* Howard Kunreuther, *Comments on Plott and on Kahneman, Knetsch, and Thaler*, 59 J. BUS. S329, S331 (1986); Yue Gao, *A Study of Fairness Judgments in China, Switzerland and Canada: Do Culture, Being a Student, and Gender Matter?*, 4 JUDGMENT & DECISION MAKING 214, 222 tbl.8 (2009).

[29] *See infra* Part IV.B.2.b.

[30] *See infra* Part IV.B.2.a.

[31] *See infra* Part IV.B.2.c.

[32] *See* Appendix A and accompanying notes.

Our findings have important implications for both behavioral economics and consumer law. As to the former, our results highlight the fluidity and contingency of fairness perceptions. Canadian consumers circa 1985 and U.S. consumers circa 2020 appear to differ meaningfully in their reactions to price increases. This finding underscores the importance of updating and replicating canonical results in the consumer fairness literature specifically, and the behavioral economics literature more generally, before drawing strong generalizations (or at least periodically revisiting those results).

As for consumer law, our findings suggest that price gouging statutes in many U.S. states tend to diverge from shared fairness intuitions among U.S. adults, sometimes appreciably.[33] This disconnect is not only interesting in its own right, but it bears on the question of whether prevailing laws actually serve their intended purposes—which arguably include, among others, bolstering shared community norms of consumer fairness.[34] To be sure, proponents of a federal price gouging statute such as Senators Sanders and Warren may interpret the same results as evidence that legal interventions are necessary to restore fairness norms that decades of neoliberal policy and corporate capitalism have eroded.[35] Without wading too deeply into that debate, we point out here that insofar as fairness norms are relevant to consumer protection law, it surely matters what those norms are. And the evidence presented here suggests that norms against price increases in response to surges in demand are highly contingent upon the particular context in which those increases occur.

The remainder of this Article proceeds in five parts. Part II describes the motivation for the study. Part III details the design and data collection approach. Part IV presents and analyzes results. Part V considers implications for legal reform, behavioral economics, and private ordering. Two appendices provide greater detail about (a) existing price gouging laws across the United States; and (b) the statistical robustness of our core results.

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[33] For example, our participants tend not to distinguish between merchants and opportunistic residents who gouge, or between gouging as necessities or non-necessities (while most price gouging statutes do). To the extent price gouging laws should reflect folk norms of fairness in market settings, the divergence between such statutes and our results would be cause for concern. For a more detailed exploration of these implications, see *infra* Parts IV, V.

[34] As we show below, the disconnect between consumer perceptions and prevailing laws is noteworthy under several different alternative normative justifications for price gouging laws. *See infra* Part II.

[35] *See* Henry A. Giroux, *The Terror of Neoliberalism: Rethinking the Significance of Cultural Politics*, COLL. LITERATURE, Winter 2005, at 1, 2 (discussing the erosion of fairness norms under neoliberal and corporate capitalism ideologies).

II. UNDERSTANDING PRICE GOUGING

A core challenge in studying price gouging is its Rorschach-test-like nature[36]: it lends itself to multiple, often unarticulated, normative accounts of what it is, why it's wrong, and what the core "goals" of price gouging laws are (or should be). Accordingly, we consider several such accounts in Part II.A below; but in doing so, we aspire neither to canvass all plausible normative theories nor to endorse a favorite. Rather, our aim is to demonstrate that several of the most focal accounts turn—sometimes centrally—on the content and contours of societal fairness perceptions. Consequently, whichever of these policy rationales ultimately undergirds price gouging laws, our empirical inquiry and results are directly pertinent. In Part II.B, we discuss the specific role that consumer fairness perceptions play in understanding and interpreting existing price gouging laws. In Part II.C, we provide an overview of the extant empirical literature on consumer perceptions of price fairness, and we explain how this study contributes to that body of research.

A. *Normative Accounts of Price Gouging Laws*

Standard neoclassical economics provides a helpful starting point for thinking about normative justifications for price gouging laws. According to this view, any constraints on price movements are presumptively undesirable, since sellers who raise prices in a shortage (or reduce them amid surplus) advance three desirable social ends. First, market price plays a welfare-maximizing role, ensuring that goods in short supply go to those most willing to pay for them.[37] Second, price changes can send effective public signals about scarcity to economic agents and policymakers, relieving them of having to conduct costly reconnaissance on consumer tastes, supply chain disruptions, or input availability.[38] Finally, the profit-making opportunities that rising prices enable can induce suppliers to ramp up production and/or enter the market, ultimately

[36] *See, e.g.*, Constantine von Hoffman, *After Sandy, Allegations of Price Gouging*, CBS NEWS (Nov. 2, 2012), https://www.cbsnews.com/news/after-sandy-allegations-of-price-gouging [https://perma.cc/SR5D-CH22] ("[P]rice gouging, like beauty, is in the eye of the beholder.").

[37] Ramsi A. Woodcock, *The Economics of Shortages*, L. & POL. ECON. PROJECT (June 2, 2020), https://lpeproject.org/blog/the-economics-of-shortages/ [https://perma.cc/WBH4-549T].

[38] *See, e.g.*, Friedrich Hayek, *The Use of Knowledge in Society*, 35 AM. ECON. REV. 519, 526 (1945); R.H. Coase, *The Nature of the Firm*, 4 ECONOMICA 386, 405 (1937); Kenneth J. Arrow, *An Extension of the Basic Theorems of Classical Welfare Economics*, 2 PROC. SECOND BERKELEY SYMP. ON MATHEMATICAL STAT. & PROBABILITY 507, 529 (1951). *See generally also* Leonid Hurwicz, *The Design of Mechanisms for Resource Allocation*, 63 AM. ECON. REV. (PAPERS & PROC.) 1 (1973) (reviewing literature).

dampening the shortages that began the process.[39] According to the neoclassical account, price gouging prohibitions interfere with these equilibrating market forces, and by so doing leave us collectively worse off.[40]

Skeptics of this unalloyed neoclassical account (ourselves included) would likely rejoin that notwithstanding the usually beneficial role of the price mechanism, several factors can call into question whether equilibrium market prices give rise to desirable social allocations, particularly at moments of economic uncertainty, market power, and crisis.[41] We consider several such arguments below, relating to distributional concerns, civic virtue and social cohesion, negative externalities, and bounded rationality and information.

1. *Distributional Concerns*

One potential defense of laws prohibiting price gouging is that such behavior visits intolerable harms on vulnerable groups—and in particular, poor and low-income consumers.[42] The neoclassical account, this argument goes, hinges critically on the assumption that someone's "willingness to pay" for a good or service roughly aligns with the social value created when the item is allocated to them.[43] However, people who are poor and/or facing liquidity constraints may simply be unable to pay their true hedonic valuations.[44] And while the disconnect between willingness and ability to pay is a general phenomenon, it can become most stark, perhaps even fatal, during moments of public emergency, when prices for life-saving necessities may escalate to a level that only the well-heeled can afford. Constraining price run-ups, then, may be one way to ensure that all consumers have a chance to acquire needed provisions, even if some demand remains unfulfilled.

It is important to note that the distributional argument articulated above is largely a negative argument *against* markets, rather than a positive argument *for* any particular alternative. It does not reveal which, if any, other approach to allocation fares better. And here, the "compared to what?" question can loom large: As the philosopher Matt Zwolinski notes, "[a]ll our distributive options

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[39] *See* Michael Brewer, *Planning Disaster: Price Gouging Statutes and the Shortages They Create*, 72 BROOK. L. REV. 1101, 1102, 1124, 1137 (2007) (arguing that price gouging laws worsen shortages by undercutting market efforts to increase supply).

[40] For one recent statement of the neoclassical view, see generally David Schmidtz, *Are Price Controls Fair?*, 23 SUP. CT. ECON. REV. 221 (2016).

[41] *See generally* Woodcock, *supra* note 37.

[42] Caitlin E. Ball, Note, *Sticker Shock at the Pump: An Evaluation of the Massachusetts Petroleum Price-Gouging Regulation*, 44 SUFFOLK U. L. REV. 907, 915 (2011).

[43] John Bronsteen, Christopher Buccafusco & Jonathan S. Masur, *Well-Being Analysis vs. Cost-Benefit Analysis*, 62 DUKE L.J. 1603, 1646 (2013) (discussing divergences between willingness-to-pay and welfare).

[44] *See* Woodcock, *supra* note 37.

are imperfect" in a shortage.[45] For example, allocation on a first-come, first-served basis—with prices remaining low—may disadvantage older and disabled individuals who cannot make it to the store immediately, as well as lower-wage workers who do not have the luxury of taking off time to purchase necessities.[46] Similarly, quantity rationing rules (e.g., "one package of toilet paper per customer") may fail to account for the differential needs of larger families, irritable-bowel-syndrome sufferers, and so on.[47] Lower-income individuals are likely losers from price gouging, but they could also be losers under various alternatives to price gouging as well.

Policy concerns over distributional outcomes also prove to be an awkward fit for many existing price gouging statutes, which limit price increases in an emergency but do not prohibit high prices per se. Under California's price gouging statute, for example, if Walmart initially sold hand sanitizer for $3 before a declared state emergency, it could not legally raise the price to $4 in the thirty days after the emergency declaration.[48] However, if 7-Eleven sold the same bottle of hand sanitizer for $5 pre-emergency, it could continue to sell the product for $5 after the declaration. If one's normative goal is to ensure that low-income individuals have access to essential goods and services at affordable prices, California's statute appears underinclusive. It is also (at least arguably) over-inclusive, since it penalizes sellers who previously offered goods and services at heavily discounted prices during times of surplus, thereby expanding access, and then ended those discounts in an emergency.[49]

None of this is to suggest that distributional concerns are irrelevant to the price gouging debate. Far from it: they are (in our view) central to it. What it *does* suggest, however, is that a robust defense of existing price gouging statutes may have to look beyond distributional concerns alone. The remainder of this Part considers alternative approaches to price gouging and explains why empirical evidence on price fairness perceptions is particularly significant to those normative accounts.

2. *Communitarianism*

A second potential normative framework for evaluating price gouging approaches the issue from the standpoint of communitarian theories of justice. Consider, for example, the following view articulated by the philosopher Michael Sandel:

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[45] Matt Zwolinski, *The Ethics of Price Gouging*, 18 BUS. ETHICS Q. 347, 362 (2008).

[46] *See id.* at 360.

[47] *See id.* at 361.

[48] *See* CAL. PENAL CODE § 396(b) (West 2023). Any price increases greater than 10% would be a prima facie violation of the California statute. *Id.*

[49] *See id.*

> In times of trouble, a good society pulls together. Rather than press for maximum advantage, people look out for one another. A society in which people exploit their neighbors for financial gain in times of crisis is not a good society. Excessive greed is therefore a vice that a good society should discourage if it can. Price-gouging laws cannot banish greed, but they can at least restrain its most brazen expression, and signal society's disapproval of it. By punishing greedy behavior rather than rewarding it, society affirms the civic virtue of shared sacrifice for the common good.[50]

At the core, Sandel appears to be making two separate points about price gouging: first, that taking financial advantage of one's neighbors is wrong because it violates shared conceptions of the common good; and second, that the law ought to punish such behavior to signal societal condemnation.[51]

The first idea—that we are better off when society holds together, and that society holds together best when its members adhere to a shared conception of the common good—runs throughout communitarian thought and is reflected in communitarian approaches to law.[52] Law can (and should) assist this effort, the argument goes, by reflecting, supporting, and reinforcing these shared community norms.[53] Empirical evidence thus bears on our assessment of which pricing practices violate shared norms, potentially justifying regulation.[54]

Sandel's second point—that law does and should serve a disapproval-signaling function—will be even more familiar to many lawyers and legal academics. Expressive theories of law have gained considerable traction in recent decades, and the idea that law not only reflects but shapes norms is now widely accepted.[55] Whether any *particular* law shapes norms, though, is an

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[50] MICHAEL J. SANDEL, JUSTICE: WHAT'S THE RIGHT THING TO DO? 7–8 (2009).

[51] *Id.*

[52] For an introduction to communitarianism and the law, see generally Philip Selznick, *The Idea of a Communitarian Morality*, 75 CALIF. L. REV. 445 (1987).

[53] *See id.* at 452.

[54] This is not to say that evidence of shared norms supplies the *only* factor that bears on the communitarian case for regulation, though there is a long-running debate—which we cabin for current purposes—on the extent to which communitarianism devolves into cultural relativism. Derek Phillips, for example, writes that for Sandel and other communitarian theorists, "shared collective values are uncovered from the traditions and practices of the group." DEREK L. PHILLIPS, LOOKING BACKWARD: A CRITICAL APPRAISAL OF COMMUNITARIAN THOUGHT 13 (1993). For an argument that Sandel's communitarianism allows for a conception of the common good that diverges from the traditions and practices of any particular community, see generally Wanpat Youngmevittaya, *A Critical Reflection on Michael J. Sandel: Rethinking Communitarianism*, 15 J. SOC. SCIS. NARESUAN U. 83 (2019). All would agree, though, that shared norms are relative to communitarianism, whether or not determinative.

[55] *See, e.g.*, Elizabeth S. Anderson & Richard H. Pildes, *Expressive Theories of Law: A General Restatement*, 148 U. PA. L. REV. 1503, 1531–64 (2000); Matthew D. Adler, *Expressive Theories of Law: A Skeptical Overview*, 148 U. PA. L. REV. 1363, 1364 (2000); Robert Cooter, *Expressive Law and Economics*, 27 J. LEGAL STUD. 585, 585–86 (1998).

empirical question. Thus, even if one agrees with Sandel's argument that the law should be used to signal society's disapproval of price gouging, the question remains: Have laws against price gouging succeeded in this regard? Our analysis below provides a helpful perspective on that score as well.

3. *Externalities*

A third argument for price gouging laws conjures more directly the language of utilitarianism and economics. Under this account, price gouging is undesirable because it imposes a negative "aesthetic externality" on third parties who are not directly affected by the price increase.[56] That is, individuals may dislike the social existence of price gouging in the same way some people dislike the sight of neon green houses. Regardless of whether there is anything intrinsically "wrong" with such sensory experiences, the fact remains that some community members dislike them and experience disutility when exposed to them.[57] And their disutility is neglected by the principal decision makers—producing a negative externality that potentially justifies regulation.[58] A suburban zoning board, consequently, might enact an ordinance against neon green houses in the interests of improving residents' welfare regardless of whether the board members themselves do or don't have a taste for neon green.[59] In the same vein, a legislature might enact a price gouging law simply because a critical fraction of the population shares a distaste for the incidence of price gouging as a practice, irrespective of whether they themselves fall prey to it.[60] And, market power can introduce a different type of negative externality, with monopoly pricing behavior rationing out consumers for whom transactions would be value enhancing but who are priced out of the market.[61]

The negative externalities argument for price gouging laws also depends directly on empirical evidence regarding fairness norms. For example, if consumers do not experience disutility from the fact that other consumers are being "gouged," then there is no negative externality to remedy. In contrast, if

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[56] *See, e.g.*, Joseph P. Kalt, *The Costs and Benefits of Federal Regulation of Coal Strip Mining*, 23 NAT. RES. J. 893, 903 (1983).

[57] Lee Anne Fennell, *Interdependence and Choice in Distributive Justice: The Welfare Conundrum*, 1994 WIS. L. REV. 235, 269–70.

[58] *See* Kalt, *supra* note 56, at 895.

[59] *See id.*; George C. Galster & Garry W. Hesser, *Evaluating and Redesigning Subsidy Policies for Home Rehabilitation*, 21 POL'Y SCIS. 67, 68 (1988); Fennell, *supra* note 57, at 269–70.

[60] *See generally* Sheila Abood, *Influencing Health Care in the Legislative Arena*, ONLINE J. ISSUES IN NURSING (Jan. 31, 2007), https://ojin.nursingworld.org/MainMenuCategories/ANAMarketplace/ANAPeriodicals/OJIN/TableofContents/Volume122007/No1Jan07/tpc32_216091.html [https://perma.cc/5VT2-EQ2P] (describing how legislators make decisions).

[61] *See* Woodcock, *supra* note 37.

market-power-driven gouging leads to significant negative sentiment among consumers, then the profitability of such tactics shrinks. Either way, for those who seek to justify price gouging laws on negative-externalities grounds, empirical evidence remains a necessary—though not sufficient—ingredient.

4. *Consumer Information/Rationality*

A final possible argument in favor of price gouging prohibitions posits that such laws address problems that occur when uninformed or boundedly rational consumers participate in markets.[62] In anticipation of or during crises, some consumers will tend to purchase unfathomably large quantities of certain items (e.g., bottled water, canned soup, and—at least during the COVID-19 pandemic—hand sanitizer and toilet paper).[63] This impulse-hoarding phenomenon is well documented in several areas,[64] though its implications for price-gouging laws have not been thoroughly explored.

From a neoclassical economic perspective, impulse hoarding could provide an argument in favor of allowing market forces to run their course.[65] If prices of scarce commodities were allowed to fluctuate freely, the argument goes, rising prices might deter impulse buyers from filling their basements with bottled water or their bathrooms with surplus toilet paper. And, from a psychological perspective, impulse hoarding is not obviously a negative either.[66] For example, by allowing consumers to exercise control over uncertain future circumstances, such behavior may serve as a useful coping mechanism.[67]

That said, impulse hoarding can also reveal undesirable dysfunctions in broader market dynamics. The danger here may be especially compelling where

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[62] The concept of bounded rationality was introduced by Herbert Simon: "Broadly stated, the task is to replace the global rationality of economic man with the kind of rational behavior that is compatible with the access to information and the computational capacities that are actually possessed by organisms, including man, in the kinds of environments in which such organisms exist." Herbert A. Simon, *A Behavioral Model of Rational Choice*, 69 Q.J. ECON. 99, 99 (1955).

[63] On impulsive and compulsive buying around natural disasters, see generally Julie Z. Sneath, Russell Lacey & Pamela A. Kennett-Hensel, *Coping with a Natural Disaster: Losses, Emotions, and Impulsive and Compulsive Buying*, 20 MKTG. LETTERS 45 (2009).

[64] *See generally* Michal Barzuza & Eric Talley, *Long-Term Bias*, 2020 COLUM. BUS. L. REV. 104; Mark J. Roe, *Corporate Short-Termism—In the Boardroom and in the Courtroom*, 68 BUS. LAW. 977 (2013); Daniel M. Gallagher, Comm'r, Sec. & Exch. Comm'n, Activism, Short-Termism, and the SEC: Remarks at the 21st Annual Stanford Directors' College (June 23, 2015), https://www.sec.gov/news/speech/activism-short-termism-and-the-sec.html [https://perma.cc/4929-VC77]; David Laibson, *Golden Eggs and Hyperbolic Discounting*, 112 Q.J. ECON. 443 (1997).

[65] Keith Sharfman, *The Law and Economics of Hoarding*, 19 LOY. CONSUMER L. REV. 179, 190 (2007).

[66] *Id.*

[67] *See* Sneath, Lacey & Kennett-Hensel, *supra* note 63, at 57.

consumers are relatively uninformed about shortages or confront highly unfamiliar situations. In the absence of such prohibitions, the argument goes, suppliers could take advantage of buyers' anticipated impulsivity by inventorying critical commodities and keeping them off the shelves, only to unload their stocks at elevated prices during a crisis.[68] Poorly informed consumers, in turn, may view an initial price increase as a signal of looming extended privations, causing them to amplify their hoarding activities (ironically enough) *because of* the initial price increase.[69] Moreover, for novel and unfamiliar moments of dislocation, consumers may fall prey to well-documented pathologies of decision making under uncertainty, causing them to "over-purchase" items under an assumed worst-case scenario.[70] Finally, the simple act of hoarding imposes additional costs (such as supply-chain and inventory-management pressures) that are undesirable in the absence of delivering real benefits.[71] Viewed from this perspective, then, price gouging prohibitions prevent suppliers from manipulating pricing, and thus help save impulse buyers "from themselves." Excess demand and supply shortages thus become a *feature* of price-gouging prohibitions, not a bug.

We remain agnostic (for present purposes) about whether asymmetric information and bounded rationality are sufficiently severe to overshadow the benefits of market pricing. Rather, we merely note (once again) that sophisticated advocates on both sides of the debate may care about the social reception of significant price run-ups during shortages. For example, one reason why KK&T predicted that prices would *not* rise sharply in a shortage is that sellers would fear the reputational consequences of pricing practices that are widely perceived to be unfair.[72] If fairness norms operate as an extra-legal deterrent to price gouging, then the need for additional legal prohibitions weakens. By contrast, if consumers generally tolerate price increases during shortages, then the behavioral-economics case for legal restrictions grows stronger. Once again, this is not the only inference that one might draw. As we emphasized above, widespread perceptions that price increases are unfair may bolster the case for price gouging laws for several other reasons. What the discussion here highlights is our study—and its empirical results—hold relevance for the debate about price gouging across several distinct normative theories, even if those theories offer different perspectives about how fairness perceptions play into a defense of price gouging prohibitions.

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[68] *Id.* at 56.

[69] *Id.* at 57.

[70] *See, e.g.*, Eric L. Talley, *On Uncertainty, Ambiguity, and Contractual Conditions*, 34 DEL. J. CORP. L. 755, 767 (2009).

[71] *See* Sharfman, *supra* note 65, at 190.

[72] *See* Kahneman, Knetsch & Thaler, *supra* note 9, at 738.

B. *Fairness Perceptions and the Content of Price Gouging Laws*

Price gouging controversies do not occur in an institutional vacuum: as noted above, a sizable majority of states already have in place statutory proscriptions on price gouging.[73] Consequently, even as fairness norms are relevant to the prudent design of price gouging laws, they also shed evaluative light on those institutions. Once a state has chosen to restrict various types of price increases during moments of crisis, it immediately becomes relevant whether such legal regimes "fit" societal mores of fairness. Real-world price gouging laws must make a variety of institutional choices that implicate who and what is regulated and how regulations are structured. Those contours, moreover, may bear on assessments of societal fairness and legitimacy. For example, all jurisdictions with a price gouging law must decide what magnitude of a price increase constitutes "gouging." They also must decide whether all goods will be regulated or only those that are necessary for health and safety. They must further choose whether to impose sanctions only on merchants (i.e., businesses and individuals who regularly sell the relevant goods for a living) or also on occasional sellers (e.g., individuals and opportunists selling items on eBay as a side venture). And, they must decide how to punish price-gouging conduct once identified.[74] Because several normative theories of lawmaking implicate societal beliefs about legitimate market behavior (as illustrated above), our experiments bear on each of these questions.

In this part, we describe several dimensions along which price gouging laws can (and do) vary. To facilitate our discussion, we refer readers to Appendix A of this paper, which provides a cross-sectional survey of the price gouging laws of all fifty states and the District of Columbia.[75] It reveals a patchwork with appreciable heterogeneity, as different jurisdictions can vary considerably in their approach to price gouging.

As noted above, at least three dozen states and the District of Columbia have statutes that explicitly make price gouging during any declared state or district emergency unlawful at least for certain products and actors.[76] By contrast, four states do not explicitly regulate price gouging at all, whether by statute,

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[73] *See infra* Appendix A and accompanying notes.

[74] *See, e.g.*, CAL. PENAL CODE § 396(b) (West 2023) (answering most of the foregoing policy questions in its text).

[75] *See infra* Appendix A and accompanying notes.

[76] Alabama, Arkansas, California, Colorado, Connecticut, District of Columbia, Florida, Georgia, Hawaii, Idaho, Illinois, Indiana, Iowa, Kansas, Kentucky, Louisiana, Maine, Maryland, Massachusetts, Michigan, Mississippi, Missouri, New Jersey, New York, North Carolina, Ohio, Oklahoma, Oregon, Pennsylvania, Rhode Island, South Carolina, Tennessee, Texas, Utah, Vermont, Virginia, West Virginia, and Wisconsin. *See infra* Appendix A and accompanying notes.

executive order, or some alternative provision.[77] Five states have statutes that regulate price gouging indirectly, typically through general consumer protection laws that prohibit unconscionable, unfair, and/or deceptive business acts (with enforcement discretion normally vested in the state's Attorney General).[78] Two states, Maryland and Minnesota, have no price gouging statute, but have nevertheless employed executive orders to declare price gouging illegal during their COVID-19 emergency declarations.[79] Two more states, Nevada and Alaska, have no price gouging statute, but permit private parties to file consumer complaints with the Attorney General's office.[80] Delaware's price gouging prohibition applies only to the COVID-19 emergency and a sixty-day recovery period afterwards.[81]

Of those jurisdictions that have an explicit price gouging statute, there is still substantial variation in: (a) the magnitude of price increase that triggers the statute; (b) the constellation of goods and services prescribed; (c) the types of sellers subject to regulation; and (d) the magnitude of civil and criminal penalties.[82] Although these are not the sole dimensions on which statutes vary, they are the most pertinent ones for which people's fairness intuitions seem most relevant.[83] We discuss each in turn.

Consider first liability triggers in states that have explicit price gouging statutes. Here, there is a significant amount of inter-state variation between precise rule-like criteria and squishier standards. Some states (like California) impose hard quantitative thresholds that create prima facie liability when a seller increases the price of goods by more than the prescribed percentage relative to

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77 Arizona, North Dakota, South Dakota, and Wyoming. *See infra* Appendix A and accompanying notes. It bears observing price gouging could also be proscribed under even more general statutory authority. For example, Washington state has no specific statute regarding price gouging, but does have a consumer protection act that prohibits "unfair" trade practices. WASH. REV. CODE § 19.86.020 (2022). In turn, determining what practices are "unfair" is resolved by courts through a process of common law adjudication. Panag v. Farmers Ins. Co. of Wash., 204 P.3d 885, 894 (Wash. 2009). And here, evidence can assist legal observers in predicting case outcomes and, moreover, can help inform judges' conceptualization of fairness. *See generally* Daniel J. Hemel & Lisa Larrimore Ouellette, *Public Perceptions of Government Speech*, 2017 SUP. CT. REV. 33 (highlighting the use of survey evidence in judicial decision making).

78 These states include Montana, Nebraska, New Hampshire, New Mexico, and Washington. *See infra* Appendix A and accompanying notes. Senate Bill 6699, recently introduced into the Washington state legislature but not enacted, which would prohibit price gouging at the time of disaster. An increase in price of more than 10% for certain goods and services would become unlawful and subject to a civil fine of no more than $10,000 per violation, cumulative to other remedies. S. 6699, 66th Leg., Reg. Sess. (Wash. 2020).

79 *See infra* Appendix A and accompanying notes.

80 *See infra* Appendix A and accompanying notes.

81 DEL. CODE ANN. tit. 6, § 2528(a)(3)–(b) (2023).

82 *See infra* Appendix A and accompanying notes.

83 *See generally* Hemel & Ouellette, *supra* note 77 (highlighting the use of survey evidence in judicial decision making).

pre-emergency prices.[84] By contrast, other states (like New York) embrace a more flexible legal standard: price increases trigger liability if they are (something akin to) "unconscionably excessive."[85] These two contrasting approaches illustrate well-known tradeoffs normally associated with navigating the rules-standards spectrum. While rules provide certainty and reduce detection and enforcement costs, standards promote flexibility, learning, and ex post adjustment.[86] Societal fairness norms, however, appear relevant for both approaches (as well as hybrids). New York's "unconscionably excessive" standard invokes shared norms about the level at which price increases become

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[84] These states include Alabama, Arkansas, California, Delaware, District of Columbia, Georgia, Hawaii, Kansas, Mississippi, New Jersey, Oklahoma, Oregon, Pennsylvania, Utah, West Virginia, and Wisconsin. *See infra* Appendix A and accompanying notes. In California, the cutoff is 10%. *See infra* Appendix A and accompanying notes. Several other states (and the District of Columbia) similarly use a 10% price increase cutoff as prima facie evidence of price gouging, including Arkansas, District of Columbia, New Jersey, Oklahoma, Utah, and West Virginia. *See infra* Appendix A and accompanying notes. These cutoffs only create prima facie liability, because virtually all states allow defendants to justify price increases if, for example, their own costs went up. *See, e.g.*, CAL. PENAL CODE § 396(b) (West 2023). Similarly, Delaware's Executive Department's coronavirus emergency declaration explicitly lists price gouging as a violation of state law, DEL. CODE ANN. tit. 6, § 2513 (2023), which can be triggered by strict percentage increases of 10% or more for any good or service. *See* Declaration of a State of Emergency for the State of Delaware Due to a Public Health Threat (Mar. 12, 2020). Also, an executive order expanding on Maryland's Executive initial declaration of a coronavirus emergency declaration explicitly lists price gouging as a violation of state law, Chapters 13 and 14 of the Laws of Maryland, which can be triggered by strict percentage increases of 10% or more for listed goods or services. *See* Md. Exec. Order No. 20-03-23-03 (Mar. 23, 2020). Yet still, Minnesota's Emergency Executive Order 20-10 issued by Governor Tim Walz on March 20, 2020 declares certain price gouging during this emergency "unconscionable," which can automatically be triggered by a 20% increase for any good or service. *See* Minn. Exec. Order No. 20-10 (Mar. 20, 2020). New Mexico's Attorney General has released a consumer advisory warning following the state's coronavirus emergency declaration promulgating that *any* increases on the prices of necessities will be prosecuted under N.M. STAT. ANN. § 57-12-2 (West 2019). *See* Press Release, Raúl Torrez, N.M. Att'y Gen., AG Balderas Warns Against Coronavirus-Related Price Gouging (Mar. 12, 2020), https://www.nmag.gov/ag-balderas-warns-against-coronavirus-related-price-gouging/ [https://perma.cc/F42G-FL6Q].

[85] These states include Colorado, Connecticut, Florida, Idaho, Illinois, Indiana, Iowa, Kentucky, Louisiana, Maine, Massachusetts, Michigan, Missouri, New York, North Carolina, Rhode Island, South Carolina, Tennessee, Texas, Vermont, and Virginia. *See, e.g.*, N.Y. GEN. BUS. LAW § 396-r (McKinney 2023); *see also* Minn. Exec. Order No. 20-10 (Mar. 20, 2020) (though liability can be automatically triggered by a greater than 20% increase in the pricing of essential goods and services, "unconscionably excessive" pricing may also be proven with flexible standards, such as a "gross disparity" between the amount charged and the price the good or service was available for thirty days preceding the emergency or the price charged exceeds the price at which the same or similar goods/services can be obtained in the area); *see infra* Appendix A accompanying notes.

[86] *See, e.g.*, Louis Kaplow, *Rules Versus Standards: An Economic Analysis*, 42 DUKE L.J. 557, 572, 590 n.87, 609 n.142 (1992).

intolerable.[87] And since criminal prosecutions of price gouging will go before juries, lay views about price fairness will have important implications for enforcement. Even more quantitative triggers like California's require policymakers to settle in advance on a hard, quantitative trigger (be it in percentage or absolute terms).[88] Depending on the normative justification for having the statute in the first place, empirical knowledge regarding social norms may be relevant to that threshold-setting exercise as well.

Price gouging statutes also vary as to whether their proscriptions apply to all goods, or only those in specified categories. Nine states and the District of Columbia explicitly apply their price gouging laws to all goods, without limitation.[89] Others, however, limit their prohibitions to goods that are "vital and necessary for the health, safety, and welfare of consumers," or similar language connoting necessity.[90] During the COVID-19 pandemic, consumers have experienced price increases or shortages for essential health and safety items like masks and hand sanitizer as well as less obviously essential goods like Louis Vuitton handbags.[91] One contribution of our study is to test whether consumers have the same reactions to price gouging for necessities and non-necessities.

Third, some states apply their price gouging prohibitions only to "merchants" or analogous actors in the commercial distribution chain,[92] while others regulate anyone who sells (or resells) goods.[93] The Uniform Commercial Code (UCC)—adopted in all fifty states and the District of Columbia—defines "merchant," in the main, as "a person who deals in goods of the kind or otherwise by his occupation holds himself out as having knowledge or skill peculiar to the practices or goods involved in the transaction"[94]—a definition

[87] *See* N.Y. GEN. BUS. LAW § 396-r (McKinney 2023).

[88] *See, e.g.*, CAL. PENAL CODE § 396(b) (West 2023).

[89] Alabama, Arkansas, Delaware, District of Columbia, Hawaii, Louisiana, Michigan, Mississippi, Ohio, and Oklahoma. *See infra* Appendix A and accompanying notes.

[90] California, Colorado, Iowa, Kentucky, Maine, Massachusetts, Missouri, New Jersey, New York, North Carolina, Oregon, Rhode Island, South Carolina, Tennessee, Texas, Virginia, and West Virginia. *See infra* Appendix A and accompanying notes. Note that some states only regulate gas or petroleum prices, including Illinois, Indiana, and Vermont. *See infra* Appendix A and accompanying notes.

[91] *See* Annachiara Biondi, *Increasing Prices in Covid-19? Chanel, Louis Vuitton Show It Works*, VOGUE BUS. (Sept. 2, 2020), https://www.voguebusiness.com/companies/price-increase-china-louis-vuitton-chanel-gucci-covid-19 [https://perma.cc/VT48-GLE7].

[92] States limiting application of their price gouging statute to merchant sellers (or the functional equivalent in the supply chain) include: Florida, Illinois, Kansas, Massachusetts, Ohio, Oregon, Virginia, and Wisconsin. *See infra* Appendix A and accompanying notes.

[93] *See infra* Appendix A and accompanying notes.

[94] U.C.C. § 2-104(1) (AM. L. INST. & UNIF. L. COMM'N 2001); BRUCE W. FRIER & JAMES J. WHITE, THE MODERN LAW OF CONTRACTS 22 (3d ed. 2012) (noting that the UCC has been adopted in "virtually all American jurisdictions," with the exception that Louisiana has not adopted Title 2 of the UCC).

likely to inform the interpretation of state price gouging statutes that invoke the term.[95] Although some price gouging enforcement actions amid the COVID-19 pandemic have aimed at traditional merchants, one of the most salient price gouging enforcement actions was against a non-merchant seller who had stockpiled medical gear.[96]

A final pertinent point of statutory variation concerns the types and magnitudes of the legal sanctions imposed on those found liable for price gouging violations. Again, states vary markedly on this score, and we detail their various choices in Appendix A. Most sanctions can be found by cross-reference to states' consumer protection statutes.[97] Some allow for injunctive relief,[98] some enable private rights of action,[99] and most allow for civil fines over a substantial monetary range (from a low of $99 to a high of $50,000).[100] Finally, ten states allow for the possibility of criminal penalties, ranging from misdemeanors to felonies with jail time.[101]

C. *Price Gouging in the Social and Behavioral Sciences*

While a key aspect of our enterprise is to study fairness norms and their implications for legal and regulatory policy, our study also engages broader literatures in the social and behavioral sciences related to price gouging and consumer fairness perceptions.

First, our study adds to the scholarly understanding of fairness constraints on dynamic pricing behavior. This subject was the focus of KK&T's landmark survey of Canadian consumers, and it has been the topic of several follow-on studies.[102] KK&T set out to resolve a puzzle within neoclassical economics: Why do we so often observe "sticky" prices and persistent shortages of high-demand goods? In the presence of excess demand for a good or service, conventional wisdom suggests that prices should rise until the market equilibrates (and vice versa for excess supply). Raising the price seems like the

[95] *See, e.g.*, People by Vacco v. Chazy Hardware, 675 N.Y.S.2d 770, 772–73 (N.Y. Sup. Ct. 1998) (applying UCC definition of "merchant" under previous version of New York price gouging statute).

[96] *See* Neil Vigdor, *A Hoarder's Huge Stockpile of Masks and Gloves Will Now Go to Doctors and Nurses, F.B.I. Says*, N.Y. TIMES (Apr. 2, 2020), https://www.nytimes.com/2020/04/02/nyregion/brooklyn-coronavirus-price-gouging.html [https://perma.cc/2Q8X-VSGA].

[97] *See infra* Appendix A and accompanying notes.

[98] *See infra* Appendix A and accompanying notes.

[99] *See infra* Appendix A and accompanying notes.

[100] *See infra* Appendix A and accompanying notes.

[101] *See infra* Appendix A and accompanying notes.

[102] *See* Kahneman, Knetsch & Thaler, *supra* note 9, at 728–29, 729 n.1; *infra* notes 123–151 and accompanying text.

simplest and most efficient way to ration, yet that does not always happen. Why not?[103]

KK&T posited that consumer fairness perceptions may play an important extra-legal role in preventing rapid price increases.[104] To be sure, KK&T were not the first to propose that "fairness" and related concepts may play a role in answering these questions. Before their contribution, for example, economist Arthur Okun hypothesized that "implicit contracts or conventions" between suppliers and customers might prevent suppliers from raising prices due to demand surges, and these implicit contracts or conventions might be rooted in shared (but inchoate) "fairness" norms.[105] These conventions, Okun suggested, are most likely to arise in markets characterized by repeated interactions and information asymmetries.[106]

KK&T pushed this point further, arguing that "[i]f considerations of fairness do restrict the actions of profit-seeking firms, economic models might be enriched by a more detailed analysis of this constraint."[107] This detailed analysis, they further suggested, should include empirical work on what practices consumers actually perceive to be "unfair" and "fair."[108] To that end, KK&T presented their sample of Canadian consumers with a variety of hypothetical scenarios and asked their respondents to rate a firm's behavior as "completely fair," "acceptable," "unfair," or "very unfair."[109]

KK&T's headline result, noted in our Introduction, is that an overwhelming majority of their subjects considered it unfair for a firm to raise prices in response to a short-run increase in demand.[110] As we note at the outset, roughly four-fifths of their respondents (82%) thought it was "unfair" or "very unfair" for a hardware store to raise the price of snow shovels from $15 to $20 the morning after a blizzard.[111] By contrast, KK&T found that their participants generally did judge it fair for a seller to raise prices as a result of input cost increases. For example, 79% of respondents said it was "completely fair" or "acceptable" for a grocer to raise the price of a head of lettuce by 30 cents when a local shortage caused the wholesale price that the grocer paid for the lettuce to rise by 30 cents.[112] KK&T observed a broadly similar pattern across their scenarios: consumers generally thought it was unfair for sellers to raise prices in response to shortages with no increase in costs.[113] But if the sellers

[103] Kahneman, Knetsch & Thaler, *supra* note 9, at 735.
[104] *Id.* at 735, 737–38.
[105] ARTHUR M. OKUN, PRICES AND QUANTITIES: A MACROECONOMIC ANALYSIS 170 (1981).
[106] Kahneman, Knetsch & Thaler, *supra* note 9, at 728 (explaining Okun's argument).
[107] *Id.* at 729.
[108] *Id.*
[109] *Id.*
[110] *Id.* at 729–30.
[111] *Id.* at 729.
[112] Kahneman, Knetsch & Thaler, *supra* note 9, at 732–33.
[113] *See id.* at 733–35.

experienced increases in their own input costs, then consumers generally tolerated commensurate price hikes.[114]

KK&T proposed the following explanation for their findings: "[C]ommunity standards of fairness," they hypothesized, are governed "by a principle of *dual entitlement*."[115] According to this principle, consumers "have an entitlement to the terms of . . . reference transaction[s]," while "firms are entitled to their reference profit."[116] A "reference transaction" is generally some transaction that has occurred in the recent past.[117] For example, the pre-snowstorm sale of a snow shovel would be the relevant reference transaction the morning after a snowstorm. The pre-shortage sale of heads of lettuce would be the relevant reference transaction for sales after the local shortage strikes. However, as KK&T note, "[t]he relevant reference transaction is not always unique," and "[d]isagreements about fairness are most likely to arise when alternative reference transactions can be invoked."[118]

KK&T posited that where price increases run afoul of the dual entitlement principle, sellers are likely to eschew price hikes, resulting in excess demand and shortages.[119] According to KK&T, sellers—and especially sellers engaged in repeated interactions with their customers—will be reluctant to seize opportunities for short-term profits when price increases would erode their long-term reputations for fair dealing.[120] Invoking a maxim from the ski-resort industry, KK&T noted: "If you gouge them at Christmas, they won't be back in March."[121] A similar maxim may well apply to the coronavirus context (though with a less catchy refrain): *If you gouge them at the peak of the pandemic, they won't be back after the curve flattens.* KK&T specifically cited "consistent evidence . . . from studies of disasters, where prices are often maintained at their reference levels although supplies are short."[122]

KK&T's "dual entitlement" theory has inspired follow-on work examining perceptions of consumer fairness in a variety of settings.[123] Subsequent studies indicate—among other findings—that consumers generally are more tolerant of price increases in the context of services than goods,[124] and that they react

[114] *See id.* at 733.
[115] *Id.* at 729–30
[116] *Id.*
[117] *See id.* at 729.
[118] Kahneman, Knetsch & Thaler, *supra* note 9, at 730.
[119] *See id.* at 735, 738.
[120] *See id.* at 736–38.
[121] *Id.* at 738.
[122] *Id.*
[123] For a literature review and overview of findings, see generally Farid Tarrahi, Martin Eisend & Florian Dost, *A Meta-Analysis of Price Change Fairness Perceptions*, 33 INT'L J. RSCH. MKTG. 199 (2016).
[124] *Id.* at 200 tbl.1; *see also* Lisa E. Bolton & Joseph W. Alba, *Price Fairness: Good and Service Differences and the Role of Vendor Costs*, 33 J. CONSUMER RSCH. 258, 264–65(2006)

particularly negatively to individual-level price discrimination (i.e., circumstances in which different consumers are charged different prices).[125] The inquiry most similar to our own is Margaret C. Campbell's study of price fairness perceptions in the wake of a major earthquake in Southern California—the only other study we know of that was conducted during or immediately after a disaster.[126]

Campbell conducted her study among first-year MBA students at UCLA's business school one-and-a-half weeks after the January 1994 Northridge earthquake. The earthquake led to tap water disruptions, though—as Campbell notes—"no actual shortage of bottled water in the affected area."[127] Campbell told some of the students that a local store had raised the price of a gallon of bottled water from $3.60 to $4 after the earthquake and told other students that the local store was charging the same $4-per-gallon price that it had charged pre-earthquake. She found that 65% of the students thought that the $4 price was unfair when told that it had been raised after the earthquake, whereas only 7% believed it was unfair when they believed the store had been charging $4 all along.[128] Campbell also found that 35% of students thought the price was unfair when they were told that the price increase from $3.60 to $4 had been planned since the beginning of the year but only took effect afterwards.[129]

Campbell's study highlights the potentially important role of seller motive in mediating consumer perceptions of fairness—a subject that we explore at greater length in the next section. It also suggests that KK&T's snow-shovel result may not be specific to the Canadian-consumer context. Still, the potentially idiosyncratic sample—first-year MBAs at an elite business school—make inferences to the broader population difficult. We do not fault the study's author: nationwide surveys were considerably more difficult to conduct before Internet access and usage became widespread. Because anticipated bottled-water shortages did not materialize, moreover, Campbell could not examine reactions of consumers actually facing shortages in their own lives. Finally, more than a quarter-century has passed since Campbell's study. As a result, we know little about present-day consumers' reactions to price increases in response to disaster-induced shortages.[130]

(finding circumstances in which consumers are more accepting of price increases in the service context than the goods context).

[125] *See* Kelly L. Haws & William O. Bearden, *Dynamic Pricing and Consumer Fairness Perceptions*, 33 J. CONSUMER RSCH. 304, 309 (2006).

[126] *See generally* Margaret C. Campbell, *"Why Did You Do That?" The Important Role of Inferred Motive in Perceptions of Price Fairness*, 8 J. PROD. & BRAND MGMT. 145 (1999).

[127] *Id.* at 147.

[128] *Id.* at 148–49.

[129] *See id.*

[130] Our inquiry also bears on questions relating to alternative rationing devices to sticker price—such as quantity limits and auctions—and whether consumers perceive these alternative allocation mechanisms to be fair. *See, e.g.*, Shiller, Boycko & Korobov, *supra*

Another way that sellers sometimes allocate scarce items—rather than raising prices or rationing quantities—is to utilize auctions. Again, a small empirical literature offers insights regarding consumer fairness perceptions of auctions. When KK&T asked survey participants to choose among three methods of rationing tickets to a sporting event—by auction, by lottery, or by queue (first-come first-served)—only 4% deemed the auction to be the "most fair" and 75% said it was the "least fair."[131] When the authors asked participants whether it would be fair for a store with a single Cabbage Patch doll to auction it to the highest bidder the week before Christmas, 74% said it would be unfair.[132] Interestingly, when KK&T gave subjects the same question but added that "the proceeds will go to UNICEF," only 21% said that the use of the auction would be unfair.[133] This finding indicates that consumer fairness perceptions may be sensitive not only to the choice of allocation mechanism, but also to the destination of profits.[134]

Finally, our investigation contributes to broader debates in the social and behavioral sciences literature regarding replicability and cross-cultural applicability. A key concern in the social and behavioral sciences over the past several years has been the reproducibility of landmark study results.[135] Some phenomena, including many of the major findings related to risk perception, have been documented across survey conditions.[136] Others, such as the endowment effect, appear to be more sensitive to experimental procedures.[137] Related to the issue of replicability is the question of whether consumer fairness perceptions are stable across countries and cultures.

note 27, at 388–90 (assessing attitudes about quantity limitations or taxes for inducing reductions in gasoline reduction); Marcis, Deck, Bauer & King-Skinner *supra* note 27, at 31–32 tbls.1–2 (subjects viewed as unfair limitations on gas stations from selling more than 5 gallons to any one person).

[131] Daniel Kahneman, Jack L. Knetsch & Richard H. Thaler, *Fairness and the Assumptions of Economics*, 59 J. BUS. S285, S287, S288 tbl.1 (1986).

[132] Kahneman, Knetsch & Thaler, *supra* note 9, at 735. That KK&T's utilized a Cabbage Patch doll vignette may be the single most probative factor as to the study's quondam currency.

[133] *Id.* at 735–36.

[134] Other studies have also found much greater receptivity toward auctions in specific contexts. *See* Kunreuther, *supra* note 28, at S331, S332–33; Gao, *supra* note 28, at 222 tbl.8.

[135] *See generally* Sean Laraway, Susan Snycerski, Sean Pradhan & Bradley E. Huitema, *An Overview of Scientific Reproducibility: Consideration of Relevant Issues for Behavioral Science/Analysis*, 42 PERSPS. ON BEHAV. SCI. 33 (2019).

[136] A recent large-scale effort to reproduce key findings related to risk perception found a remarkably high degree of replicability across nineteen countries and thirteen languages. *See* Kai Ruggeri et al., *Replicating Patterns of Prospect Theory for Decision Under Risk*, 4 NATURE HUM. BEHAV. 622, 629 (2020). For a list of studies replicating the anchoring effect, see Amitai Etzioni, *Behavioral Economics: Toward a New Paradigm*, 55 AM. BEHAV. SCI. 1099, 1100–01 (2011).

[137] For an overview of the endowment-effect debate, see generally Keith M. Marzilli Ericson & Andreas Fuster, *The Endowment Effect*, 6 ANN. REV. ECON. 555 (2014).

Several subsequent academic contributions suggest that the dual entitlement principle may be robust to experimental conditions and cultural contexts, though evidence on this front is mixed. Bruno Frey and Werner Pommerehne managed to replicate KK&T's result almost exactly in Switzerland and West Germany in 1987: whereas 82% of KK&T's Canadian respondents considered a price increase for shovels from $15 to $20 after a snowstorm to be "unfair," 83% of Frey and Pommerehne's Swiss and West German respondents said the same.[138] "This result can hardly be dismissed as coincidence," the authors wrote.[139] Shiller and his coauthors—in their 1990 survey of Muscovites and New Yorkers—asked whether it was fair for florists to raise prices on a holiday when there is high demand for flowers.[140] They found that nearly identical percentages of respondents—66% in Moscow, 68% in New York—considered such price increases to be unfair.[141] Shiller and his coauthors considered this to be evidence of "*fundamental* parameters of human behavior related to the success of free markets."[142] Sheryl Kimes and Jochen Wirtz also find no significant differences across consumers in Singapore, Sweden, and the United States in their reactions to demand-based pricing in the restaurant industry.[143]

Other studies, by contrast, find more substantial cross-cultural variation in consumer fairness perceptions. For example, Lisa Bolton, Hean Tat Keh, and Joseph Alba find that consumers in China—when evaluating the fairness of individual-level price discrimination—are more affected by what a friend paid than what a stranger paid, a finding that was not replicated among U.S. consumers.[144] Haipeng (Allan) Chen and coauthors find that consumers in Singapore react more negatively than consumers in the United States to "asymmetric pricing"—i.e., raising prices in response to an input-cost increase but not cutting prices in response to an input-cost reduction.[145] Nader Habibi finds that Shiller et al.'s result regarding preferences for taxes over rationing

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[138] Bruno S. Frey & Werner W. Pommerehne, *On the Fairness of Pricing—An Empirical Survey Among the General Population*, 20 J. ECON. BEHAV. & ORG. 295, 298 (1993).

[139] *Id.* John Marcis found that approximately 65% of first-year economics students in their survey considered it, on average, unfair for a store to raise the price of an unspecified product from $15 to $30 on the morning after a hypothetical natural disaster. Marcis, Deck, Bauer & King-Skinner, *supra* note 27, at 25, at 30–32 tbls.1–2.

[140] Shiller, Boycko & Korobov, *supra* note 27, at 388–89.

[141] *Id.* at 388–89.

[142] *Id.* at 386.

[143] *See* Sheryl E. Kimes & Jochen Wirtz, *Has Revenue Management Become Acceptable?: Findings from an International Study on the Perceived Fairness of Rate Fences*, 6 J. SERV. RSCH. 125, 133 (2003).

[144] Lisa E. Bolton, Hean Tat Keh & Joseph W. Alba, *How Do Price Fairness Perceptions Differ Across Culture?*, 47 J. MKTG. RSCH. 564, 567 (2010).

[145] Haipeng (Allan) Chen, Lisa E. Bolton, Sharon Ng, Dongwon Lee & Dian Wang, *Culture, Relationship Norms, and Dual Entitlement*, 45 J. CONSUMER RSCH. 1, 8 (2018).

does not replicate for consumers in Iran.[146] And as noted, efforts to reproduce KK&T's auction-related findings in other settings have largely failed.[147]

The literature documenting the contingency of fairness norms suggests a measure of caution in extrapolating from long-ago studies—even famous ones—to predict fairness perceptions among current consumers. "The past," in the words of novelist L.P. Hartley, "is a foreign country: they do things differently there."[148] Canada is *literally* a foreign country, of course, and while they don't do things *so* differently there, much has changed on both sides of the border since KK&T's landmark study. In the ensuing decades, surge pricing has become routine in sports stadium ticketing,[149] airline travel,[150] and ride sharing,[151] among other sectors. These developments in pricing practices may have made consumers more accustomed to demand-responsive price increases or, to the contrary, may have made them even more suspicious of price hikes. Such considerations underscore the periodic need to revisit received wisdoms, a task to which we now turn.

III. STUDY DESIGN

The onset of the COVID-19 pandemic presented a unique opportunity to explore the host of issues and quandaries described above. Accordingly, at the height of the crisis (at least its initial spring 2020 wave), we developed and administered two experimental protocols (Experiment 1 and Experiment 2) in which participants read a series of different vignettes related to possible price markups of various goods during the crisis. Participants were asked to judge the fairness of the sellers' behavior and the appropriate legal response to it. In both studies, participants were recruited by Cloud Research (formerly TurkPrime), a firm that uses Amazon's Mechanical Turk (MTurk) platform, to improve data quality and demographic representativeness above typical MTurk samples.[152]

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[146] Nader Habibi, *Popular Attitudes Towards Free Markets in Iran, the Former Soviet Union and the United States (A Survey Analysis)* 13–14 (Inst. for Rsch. in Plan. & Dev., Working Paper No. 9515, 1995).

[147] *See supra* notes 131–34 and accompanying text.

[148] L.P. HARTLEY, THE GO-BETWEEN 1 (1953).

[149] *See* Jacob Young, *Dynamic Ticket Pricing Use Takes Off, and Teams Hope It'll Lure Fans Back Into Sports Stadiums*, CNBC (Dec. 3, 2017), https://www.cnbc.com/2017/12/01/dynamic-ticket-pricing-use-takes-off-and-teams-hope-itll-lure-fans-back-into-sports-stadiums.html [https://perma.cc/8E8J-VQW8].

[150] *See* R. PRESTON MCAFEE & VERA TE VELDE, DYNAMIC PRICING IN THE AIRLINE INDUSTRY 1 (2006), https://vita.mc4f.ee/PDF/DynamicPriceDiscrimination.pdf [https://perma.cc/V9CG-9GXV].

[151] *See, e.g.*, *How Surge Pricing Works*, UBER, https://www.uber.com/us/en/drive/driver-app/how-surge-works/ [https://perma.cc/975M-MN65].

[152] *See generally* Leib Litman, Jonathan Robinson & Tzvi Abberbock, *TurkPrime.com: A Versatile Crowdsourcing Data Acquisition Platform for the Behavioral Sciences*, 49 BEHAV. RSCH. METHODS 433 (2017); Jesse Chandler, Cheskie Rosenzweig, Aaron J. Moss,

This particular tool is now commonly used in articles published in top journals across disciplines, including in consumer research,[153] social psychology,[154] political science,[155] and law.[156] Subjects were compensated $2.00 for completing all of the vignettes presented to them.[157] From these experimental data, we tested several hypotheses that are of theoretical and legal significance related to price gouging. This Part explains our experimental design. Our core results can be found immediately following, in Part IV.

A. *Experiment 1*

In our first experiment, we sought to replicate the findings of KK&T's landmark study and to expand upon them in a number of directions relevant to the current context. As explained above, KK&T reported that the overwhelming majority (82%) of their subjects considered it unfair for a hardware store to increase the price of snow shovels from $15 to $20 the day after a hypothetical snowstorm.[158] An initial goal of our enterprise is to examine whether people in the throes of an *actual* crisis would react similarly. But in addition, we were interested in whether subjects would react differently to price increases for products more directly related to the pandemic. Accordingly, we tested participants' beliefs about a price increase for Purell hand sanitizer.[159] Further,

Jonathan Robinson & Leib Litman, *Online Panels in Social Science Research: Expanding Sampling Methods Beyond Mechanical Turk*, 51 BEHAV. RSCH. METHODS 2022 (2019).

[153] *See, e.g.*, Nailya Ordabayeva & Daniel Fernandes, *Better or Different? How Political Ideology Shapes Preferences for Differentiation in the Social Hierarchy*, 45 J. CONSUMER RSCH. 227, 237–40 (2018); Adam Farmer, Blair Kidwell & David M. Hardesty, *Helping a Few a Lot or Many a Little: Political Ideology and Charitable Giving*, 30 J. CONSUMER PSYCH. 614, 620–24 (2020).

[154] *See, e.g.*, Jeremy A. Frimer & Linda J. Skitka, *Americans Hold Their Political Leaders to a Higher Discursive Standard Than Rank-and-File Co-Partisans*, 86 J. EXPERIMENTAL SOC. PSYCH. 1, 4 (2020), https://doi.org/10.1016/j.jesp.2019.103907 (on file with the *Ohio State Law Journal*).

[155] *See, e.g.*, Thomas C. O'Brien, Tracey L. Meares & Tom R. Tyler, *Reconciling Police and Communities with Apologies, Acknowledgments, or Both: A Controlled Experiment*, 687 ANNALS OF AM. ACAD. OF POL. & SOC. SCI. 202, 207 (2020); Jane Lawrence Sumner, Emily M. Farris & Mirya R. Holman, *Crowdsourcing Reliable Local Data*, 28 POL. ANALYSIS 244, 248–49 (2020); Jared McDonald, *Who Cares? Explaining Perceptions of Compassion in Candidates for Office*, 43 POL. BEHAV. 1371, 1381–82 (2020).

[156] *See, e.g.*, Thomas C. O'Brien & Tom R. Tyler, *Authorities and Communities: Can Authorities Shape Cooperation With Communities on a Group Level?*, 26 PSYCH. PUB. POL'Y & L. 69, 72 (2020).

[157] This research was approved by Yeshiva University's Institutional Review Board.

[158] Kahneman, Knetsch & Thaler, *supra* note 9, at 729.

[159] We chose hand sanitizer rather than facemasks for two reasons. First, we developed our study protocol before the World Health Organization and Centers for Disease Control and Prevention began recommending widespread mask use. *See* Abby Goodnough & Knvul Sheikh, *C.D.C. Weighs Advising Everyone to Wear a Mask*, N.Y. TIMES, https://www.ny

KK&T's findings cannot differentiate between unfairness associated with the absolute price increase ($5) or the relative price increase (33%).[160] This is significant in the instant context because many price gouging statutes condition liability on a *relative* price increase over some baseline.[161] Relative increases may be less salient than absolute differences, however, especially when the percentage increase is high but the dollar value magnitude is low. For example, if a roll of toilet paper normally sells for $2, consumers might not notice or care about a $1 increase, despite its high relative magnitude.[162] Thus, we ran conditions in which we could alternate the relative and absolute magnitudes of the price increases.

Our design for Experiment 1 involved a between-subject analysis. Participants were randomly assigned to one of four mutually exclusive "arms" based on the type of goods that were being sold. In addition, each subject read three separate versions (or "conditions") of the vignette in which the magnitude of the price increase varied. The order of presentation of each condition was random. Participants only saw the conditions pertaining to the specific arm to which they had been assigned. We explain each of the arms (and associated conditions) below.

1. *Hand Sanitizer Individual Bottles*

The first arm (Arm A) presents a vignette that will serve as a key reference point across both experiments: COVID-19 related price changes associated with

times.com/2020/03/31/health/cdc-masks-coronavirus.html [https://perma.cc/Y898-DSKH] (May 7, 2020) (noting that neither organization recommended widespread mask use at the end of March 2020). Second, vignettes using masks rather than hand sanitizer may have tread on particularly politically charged views regarding face masks that could have contaminated our results regarding price gouging. *See, e.g.*, Maya King, *Georgia Mask Feud Exposes America's Fault Lines*, POLITICO (July 17, 2020), https://www.politico.com/news/2020/07/17/georgia-face-masks-coronavirus-368540 [https://perma.cc/6K4F-97AG].

[160] *See* Kahneman, Knetsch & Thaler, *supra* note 9, at 729.

[161] States and districts with statutes that utilize relative price increase triggers following an emergency declaration when compared with pre-declaration prices (whether with strict percentages or flexible standards) include Arkansas, California, District of Columbia, Florida, Georgia, Hawaii, Idaho, Illinois, Indiana, Kansas, Kentucky, Louisiana, Michigan, Mississippi, New Jersey, Oklahoma, Oregon, Pennsylvania, Utah, West Virginia, and Wisconsin. *See infra* Appendix A and accompanying notes; *see also* Declaration of a State of Emergency for the State of Delaware Due to a Public Health Threat (Mar. 12, 2020); Md. Exec. Order No. 20-03-23-03 (Mar. 23, 2020); Minn. Exec. Order No. 20-10 (Mar. 20, 2020); Press Release, Raúl Torrez, *supra* note 84.

[162] *See generally* Ofer H. Azar, *Relative Thinking in Consumer Choice Between Differentiated Goods and Services and Its Implications for Business Strategy*, 6 JUDGMENT & DECISION MAKING 176 (2011) (reviewing literature and arguing that relative price differences appear to matter more than absolute differences).

single bottles of hand sanitizer. The text for one condition of the vignette is as follows:

> *A supermarket had been selling 8-ounce bottles of Purell hand sanitizer for $3. Several days after the first Covid-19 case was reported in the area, the supermarket increases the price of hand sanitizer to $4.*

After reading the short vignette, participants were asked to rate the fairness of the seller's behavior using the same scale that KK&T used.

> *Please rate the supermarket's behavior.*
> *(1) Completely fair*
> *(2) Acceptable*
> *(3) Unfair*
> *(4) Very unfair*

In addition, we also asked participants what they believed the appropriate legal response to the seller's behavior should be. We chose a range of responses that are consistent with the available legal sanctions in various states.[163]

> *If the authorities learn about the supermarket's behavior, what do you think they should do about it?*
> *(1) Nothing*
> *(2) Take the hand sanitizer and pay the seller $3 per bottle*
> *(3) Take the hand sanitizer and pay the seller nothing*
> *(4) Take the hand sanitizer, pay nothing, and fine the supermarket $2500*
> *(5) Take the hand sanitizer, pay nothing, fine the supermarket $2500, and put the owner in jail for one year*

Participants in Arm A also read two other variations on this vignette (presented in random order). In one of the conditions, the magnitude of the price was relatively large. Instead of raising the price to $4 (a 33% increase as illustrated above), the supermarket raised the price to $10 (a 333% increase). And in yet another condition, instead of raising the price, the supermarket did not change the price at all. Accordingly, participants saw the following three conditions in Arm A:

- No Change in price from $3
- An increase in price from $3 to $4 (33%)
- An increase in price from $3 to $10 (333%)

[163] *See supra* Part II.B. Price gouging statutes (where they exist) vary significantly from state to state. *See infra* Appendix A and accompanying notes.

2. *Hand Sanitizer 5-Packs*

The second arm (Arm B) was similar to Arm A, but instead of the grocery store selling single bottles of Purell hand sanitizer initially priced at $3, it was now selling 5-packs of Purell hand sanitizer initially priced at $15. Once again, participants in this arm were asked to evaluate hypothetical price changes to the 5-pack also corresponding to 0%, 33% and 333% of the initial price. The text of the vignette read as follows:

> *A supermarket had been selling 5-packs of 8-ounce bottles of Purell hand sanitizer for $15. Several days after the first Covid-19 case was reported in the area, the supermarket [increases the price of 5-packs to ($20/$50)/continues to sell 5-packs for $15].*

Participants then answered the analogous questions about the fairness of the seller's behavior and the appropriate response by the authorities (see above).[164] Thus, participants in Arm B saw the following three conditions, randomly presented:

- No Change in price from $15
- An increase in price from $15 to $20 (33%)
- An increase in price from $15 to $50 (333%)

3. *Ice Scrapers*

Our third arm (Arm C) moved incrementally towards the original KK&T setup, changing the unanticipated event to a sudden snowstorm (rather than a pandemic), the identity of the merchant to a hardware store (rather than a grocery store), and the product to a necessity in a snowstorm (rather than a public health crisis): an ice scraper initially priced at $3. We selected an ice scraper because it would plausibly carry an initial price similar to the single bottle of hand sanitizer in Arm A. The vignette read as follows:

> *A hardware store had been selling ice scrapers for $3. The morning after a snowstorm in the area, the hardware store [continues to sell ice scrapers for $3; increases the price of ice scrapers to ($4/$10)].*

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[164] The only variation in the wording of questions in Arm B related to the tailoring of the benchmark price of the pre-crisis status quo for choice number (2) in the legal response prompt. In Arm B, that choice read as follows:

> *(2) Take the hand sanitizer and pay the seller $15 per 5-pack*

A type of consistency-preserving edit recurs in this prompt for the other Arms as well.

After reading each vignette, participants once again answered questions about fairness and legal response. The randomly presented conditions in Arm C were:

- No Change in price from $3
- An increase in price from $3 to $4 (33%)
- An increase in price from $3 to $10 (333%)

4. *Shovels (Replicating KK&T)*

In our final set of vignettes (Arm D), we presented participants with a set of vignettes that included an exact copy of the language that KK&T studied, including the circumstances, the actor, the product, and the prices they analyzed. The vignette read as follows:

> *A hardware store had been selling snow shovels for $15. The morning after a large snowstorm, the hardware store [raises the price of snow shovels to ($20/$50)/continues to sell shovels for $15].*

Participants then answered the same questions about the fairness of the seller's behavior and the appropriate response by the authorities. Note that the three price increases in Arm D have the same relative percentage magnitudes (0%, 33%, and 333%) as those in Arms A–C, but the absolute magnitude of the price increase is once again large (as in Arm B). Thus, participants in Arm D saw the following three conditions, randomly presented:

- No Change in price from $15
- An increase in price from $15 to $20 (33%)
- An increase in price from $15 to $50 (333%)

Of these three conditions, the 33% price increase scenario is an exact replica of the vignette posed by KK&T, providing us a basis for comparison not only to their study, but also to other variations in our other study arms.

For future reference, the respective arms of Experiment 1 are summarized in Table 1. For all arms of the experiment (as well as Experiment 2, discussed below), participants answered a series of demographic questions after providing fairness and legal response assessments. Specifically, we collected data on participants' age, gender identification, city, state, nature of community (urban, suburban, rural), household income, and political orientation (5-point "very conservative" to "very liberal"). We also asked whether any members of their household had been laid off, furloughed, or had their hours reduced because of the coronavirus outbreak. Finally, we asked whether they thought that the coronavirus outbreak was a major threat to their local community and to their country (5-point "Definitely yes" to "Definitely not").

Table 1: *Arms for Experiment 1*

	Arm A	Arm B	Arm C	Arm D
Sanitizer: NC/$4/$10	✓			
Sanitizer 5-pack: NC/$20/$50		✓		
Ice Scraper: NC/$4/$10			✓	
Snow Shovel: NC/$20/$50				✓

B. *Experiment 2*

Experiment 2 resembles Experiment 1, but it was designed to delve further into the nuances of consumer reactions to price gouging in a pandemic-specific context. Specifically, in Experiment 2 we built on the conditions from Arm A of Experiment 1 with additional factual scenarios. While these additional scenarios vary, all subjects were commonly exposed to a baseline set of conditions identical to "Arm A" in Experiment 1. Consequently, Experiment 2 permits us to conduct within-subject analysis *as well as* between-subject comparisons.

1. *Common Conditions*

In all research arms of Experiment 2, participants once again read short vignettes about a seller's behavior that they might consider unfair or worthy of legal sanction. All subjects confronted a baseline condition identical to Arm A from Experiment 1, involving a supermarket that sold Purell hand sanitizer before the coronavirus outbreak for $3 per bottle, with various altered pricing policies after the outbreak in the local community. To facilitate comparison, the vignette had the same language as did Arm A from Experiment 1:

> *A supermarket had been selling 8-ounce bottles of Purell hand sanitizer for $3. Several days after the first Covid-19 case was reported in the area, the supermarket [increases the price of bottles of Purell hand sanitizer to ($4/$10)/continues to sell bottles of Purell hand sanitizer for $3].*

For each price-change condition (No change, $3 to $4, and $3 to $10), participants also answered the same questions about unfairness and appropriate legal response, as laid out in Arm A of Experiment 1 (see above). Beyond these common prompts, the various arms of Experiment 2 diverged to explore a series of alternative contexts, described in greater detail below.

2. *Quantity Restrictions and Auctions*

The first variation we introduced in Experiment 2 considered the use of two alternative allocation mechanisms—quantity restrictions and auctions—instead of seller price markups. Many products have become especially scarce during the coronavirus outbreak, and some sellers have opted for alternatives to the standard first-come-first-served, sticker-price approach for market interactions. An alternative to first-come-first-serve rule that retains the sticker price approach intact is to impose quantity limitations on consumers.[165] Here, a merchant might engage in self-imposed rationing that restricts consumers' ability to purchase as many goods as they would otherwise prefer. Two alternative hypotheses presented themselves. On the one hand, people might find quantity limits to be unfair. Many people may object to rationing on one level, because they believe that it may result in them not being able to purchase as much of a good as they desire. Certainly, ongoing debates about healthcare rationing in the United States can and have raised these concerns.[166] The findings of Shiller et al. and Marcis et al. also suggest that consumers share this view of rationing, though as noted above, the implications of those studies are not crystal-clear.[167] On the other hand, we conjectured that some people might find quantity limits appealing. They might think that rationing will increase their ability to at least buy *some quantity* of a good, because it will prevent others from hoarding it. Relatedly, people might view the broader distribution of goods as fair, because more people will be able to consume an otherwise scarce good. To explore these hypotheses, we offered the following scenario:

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[165] *See, e.g.*, Hayley Peterson, *Walmart May Cut Hours at Stores Open Overnight and Limit Sales of High-Demand Items Amid the Coronavirus Outbreak*, BUS. INSIDER (Mar. 11, 2020), https://www.businessinsider.com/coronavirus-walmart-may-cut-store-hours-and-limit-sales-2020-3 [https://perma.cc/BGE4-7PZL]; *Coronavirus Hoarding: Stores Limit Quantity on Some Items*, NBC (Mar. 13, 2020), https://www.nbcbayarea.com/news/local/ coronavirus-hoarding-stores-limit-quantities-on-some-items/2253821/ [https://perma.cc/LZ86-Q8LF]; Nicolette Accardi, *Supermarkets, Pharmacies Placing Limits on What You Can Buy. Here's What You Need to Know.*, NJ.COM (Mar. 16, 2020), https://www.nj.com/business/2020/03/supermarkets-pharmacies-placing-limits-on-what-you-can-buy-heres-what-you-need-to-know.html [https://perma.cc/5R8P-UFL5].

[166] *See, e.g.*, Paul Hsieh, *Get Ready for Obamacare's Medical Rationing*, FORBES (Oct. 3, 2012), https://www.forbes.com/sites/paulhsieh/2012/10/03/get-ready-for-obamacares-medical-rationing/#5055c3304ea3 [https://perma.cc/C2T2-MNP9]; Opinion, *Killing ObamaCare's Rationing Board*, WALL ST. J. (July 1, 2015), https://www.wsj.com/articles/killing-obamacares-rationing-board-1435790411 [https://perma.cc/G47W-66GY].

[167] *See* Shiller, Boycko & Korobov, *supra* note 27, at 390; Marcis, Deck, Bauer & King-Skinner, *supra* note 27, at 26.

> *A supermarket had been selling 8-ounce bottles of Purell hand sanitizer for $3. Several days after the first Covid-19 case was reported in the area, the supermarket continues to sell bottles of Purell hand sanitizer for $3, but it imposes a quantity limit of one bottle per customer.*

When supplies run particularly low, some sellers may consider simply abandoning sticker prices altogether and instead auctioning the items to the highest bidder. Conventional economic reasoning, in fact, considers an auction to be the most efficient means to distribute goods to those who value them the most.[168] In contrast, and as noted above, there is mixed evidence regarding consumer receptivity toward auctions.[169] We sought to understand whether evidence drawn from the coronavirus outbreak could clarify this ambiguity. Thus, in another condition of the experiment, participants read the following vignette:

> *A supermarket had been selling 8-ounce bottles of Purell hand sanitizer for $3. Several days after the first Covid-19 case was reported in the area, the supermarket removes the bottles of hand sanitizer from its shelves, and it announces that it will sell its remaining bottles of Purell hand sanitizer to the highest bidder in an online auction.*

3. *Apologies and Rationales*

A second set of variations we introduced concerned the effect of offering apologies and/or rationales in conjunction with a price change. Here we are motivated in part by the literature in behavioral economics,[170] psychology,[171]

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[168] Melissa De Witte, *The Bid Picture: Stanford Economists Explain the Ideas Behind Their 2020 Nobel Memorial Prize in Economic Sciences*, STAN. NEWS (Nov. 19, 2020), https://news.stanford.edu/2020/11/19/bid-picture-nobel-prize-winners-explain-auction-theory-collaboration/ [https://perma.cc/8TA5-GEFN].

[169] *See, e.g.*, Kahneman, Knetsch & Thaler, *supra* note 9, at 735; Kunreuther, *supra* note 28, at S331; Gao, *supra* note 28, at 222 tbl.8.

[170] *See generally, e.g.*, Basil Halperin, Benjamin Ho, John A. List & Ian Muir, *Toward an Understanding of the Economics of Apologies: Evidence from a Large-Scale Natural Field Experiment* (Nat'l Bureau of Econ. Rsch., Working Paper No. 25676, 2019) (developing behavioral economics insights based in responses to apologies used for late Uber rides).

[171] *See generally, e.g.*, Ken-ichi Ohbuchi, Masuyo Kameda & Nariyuki Agarie, *Apology as Aggression Control: Its Role in Mediating Appraisal of and Response to Harm*, 56 J. PERSONALITY & SOC. PSYCH. 219 (1989) (developing insights into psychological reactions to apologies).

medicine,[172] and law[173] suggesting that expressions of contrition may help to dampen conflict, neutralize aggression, and even reduce settlement amounts in tort cases.[174] Within our context, when merchants offer an apology or an explanation that they are raising prices in order to justify other goals that consumers value, consumers may be less likely to object to the increase. For example, people might be willing to pay higher prices when merchants are using the profits to pay salaries to workers affected by the crisis, or for other laudable goals.[175]

We attempted to study the independent and conjoined effects of apologies and rationales with three distinct variations: one with just a rationale, one with just an apology, and one with a rationale combined with an apology. The vignette is below. The rationale text is underlined, and the apology text is in bold (both only for purposes of this exposition).

> *A supermarket had been selling 8-ounce bottles of Purell hand sanitizer for $3. Several days after the first Covid-19 case was reported in the area, the supermarket raises the price to $4. A sign at the front of the supermarket reads: "We have increased prices for some products in this store. <u>All profits from these price increases will be used to provide paid leave to workers affected by COVID-19</u>. **We apologize for the inconvenience**."*

Depending on the condition to which they were (randomly) assigned, participants saw the underlined rationale text, the bolded apology text, or both. We ran each of these three permutations with an increase to $4 as well as an increase to $10, producing a total of six apology/rationale conditions.

4. *Merchants versus Non-Merchants*

A third variation in Experiment 2 hinged on the identity of the seller. As noted in the last Part, several state statutes proscribe price gouging only when perpetrated by merchants, retailers, wholesalers, suppliers, and other parties within a formal distribution chain, without explicitly restricting private individuals from increasing prices on goods that they sell.[176] Others, in contrast,

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[172] *See, e.g.*, Nicole Saitta & Samuel D. Hodge, Jr., *Efficacy of a Physician's Words of Empathy: An Overview of State Apology Laws*, 112 J. AM. OSTEOPATHIC ASS'N 302, 303 (2012) (discussing the impact of apologies in the medical context).

[173] *See, e.g.*, Jennifer K. Robbennolt, *Apologies and Settlement*, 45 COURT REV. 90, 91–93 (2009) (providing insights on the impact of apologies on legal settlements and within the legal context generally).

[174] *Id.*; Halperin, Ho, List & Muir, *supra* note 170; Ohbuchi, Kameda & Agarie, *supra* note 171; Saitta & Hodge, *supra* note 172.

[175] *See* Jodie L. Ferguson, Pam Scholder Ellen & Gabriela Herrera Piscopo, *Suspicion and Perceptions of Price Fairness in Times of Crisis*, 98 J. BUS. ETHICS 331, 335–36, 346–47 (2011).

[176] *See supra* Part II.B; *see also infra* Appendix A and accompanying notes.

have proscribed gouging by all parties. Although there might be a number of reasons for this limitation, it did not seem obvious to us that people would be more offended by the behavior of business entities within a distribution chain than by that of private individuals. In fact, perhaps the most salient example of price gouging during the coronavirus outbreak involved an individual reselling masks, gloves, and other medical equipment to medical professionals.[177] Accordingly, we ran two conditions of the experiment with the following vignette:

> *A supermarket had been selling 8-ounce bottles of Purell hand sanitizer for $3. Several days after the first Covid-19 case was reported in the area, a local resident who purchased many bottles of Purell hand sanitizer at the supermarket begins to sell them out of a truck for [$4/$10].*

These conditions on price, product necessity, and seller identity allowed us to canvas most of the legally significant variations across states.

5. *Necessities versus Luxuries*

A final set of variations we introduced in Experiment 2 concerned whether the marked-up product was a necessity. Many jurisdictions impose liability for price gouging *only* on goods and services that are *explicitly* deemed necessary to people's health and/or safety, such as household essentials, fuel, medicine, and shelter.[178] Others proscribe price gouging even as to non-necessities (or "luxury" items).[179] We were interested in whether this legal differentiation was consistent with people's intuitions about the fairness of price increases during the coronavirus outbreak. As a proxy for a luxury item, we prompted subjects with additional questions related to bag of Lay's potato chips[180] originally priced at $3 per bag, with a supermarket increasing the price to $4 per bag, and then $10 per bag. The exact prompt we utilized was as follows:

> *A supermarket had been selling 8-ounce bags of Lay's classic potato chips for $3. Several days after the first Covid-19 case was reported in the area, the supermarket raises the price to [$4/$10].*

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177 *See, e.g.*, Vigdor, *supra* note 96.

178 *See infra* Appendix A and accompanying notes. States limiting application of their price gouging statute to necessities include: Georgia, Idaho, Illinois, Indiana, Kentucky, Maine, Massachusetts, Missouri, New Jersey, New York, North Carolina, Oregon, Rhode Island, South Carolina, Tennessee, Texas, Vermont, Virginia, and West Virginia. *See infra* Appendix A and accompanying notes.

179 *See infra* Appendix A and accompanying notes.

180 In an unreported pretest, we asked participants to rate various products according to their importance to people's health and safety during the coronavirus outbreak. Hand sanitizer was rated 4.1 out of 5 ("absolutely necessary"), while potato chips were rated 2.0.

All told, Experiment 2 contains fifteen separate vignette conditions, including the baseline condition of hand sanitizer with no price change. We utilized a series of six distinct arms for this experiment out of concerns that reading numerous conditions would tax our participants unduly. Each resulting arm contains five conditions in all, as illustrated by Table 2. Participants were randomly assigned to one of the arms, and then the conditions within the arm were presented in random order. As noted above, each arm contained three common conditions that were the same as Arm A of Experiment 1, a feature we introduced to reaffirm our initial results as well as to allow for "within-subject" controls as a double-check on our analysis.[181]

Table 2: *Arms for Experiment 2*

	Arm E	**Arm F**	**Arm G**	**Arm H**	**Arm I**	**Arm J**
Sanitizer: NC/$4/$10 (common baseline)	✓	✓	✓	✓	✓	✓
Sanitizer: Quantity Limit /Auction	✓					
Sanitizer: $4/$10; Apology & Rationale		✓				
Sanitizer: $4/$10; Apology Only			✓			
Sanitizer: $4/$10; Rationale Only				✓		
Sanitizer: $4/$10; Seller is Local Resident					✓	
Luxury Good (Potato Chips): $4/$10						✓

[181] As discussed below, within-subject analysis is unnecessary if (a) one is careful about randomizing and (b) sample size is sufficiently large. These conditions are both satisfied in our study; and perhaps consequently, the introduction of within-subject controls does little to alter our results. For a discussion of these considerations, see generally Byron Wm. Brown, Jr., *The Crossover Experiment for Clinical Trials*, 36 BIOMETRICS 69 (1980).

As is increasingly common in studies such as ours, our data collection efforts made use of online solicitations over MTurk. Given that we conducted our study at the height of a pandemic, in-person solicitations would have been infeasible, and telephone surveys increasingly run up against low response rates that cast doubt on external validity.[182] Although we undertook measures to ensure that our respondents had observable traits matching the overall demographic profile of the U.S. population, it is possible that our baseline results—including our failure to replicate KK&T—are an artifact of the sample population and protocol we were compelled to employ. Of course, the same could be said of previous studies (e.g., that KK&T's results may have been an artifact of the sample population of Toronto and Vancouver area residents answering their telephones during evening hours).[183] Moreover, we note that online and electronic platforms (like MTurk) have increasingly become modal channels for human interaction (as compared to telephone conversations/surveys employed by KK&T). At a minimum, then, our baseline results bear on the question of whether well-accepted behavioral economics findings carry over to twenty-first century modes of interaction. And many of our more interesting findings emerge from manipulations that we introduce *on top of* our baseline results. Here, we make note of an emerging literature demonstrating that interaction and treatment effects can be accurately measured with MTurk participants even when their baseline behavior differs from other available subject pools.[184]

IV. RESULTS AND ANALYSIS

Following the protocol described above, we collected data from 656 respondents in the first two weeks of May 2020.[185] We sought a sample that was representative of the U.S. population, especially with respect to age, gender, and geography. The survey took on average just under four minutes to complete. For each arm of each experiment, we sampled between 60 and 70 respondents, as depicted in Table 3.

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182 *See, e.g.*, Courtney Kennedy & Hannah Hartig, *Response Rates in Telephone Surveys Have Resumed Their Decline*, PEW RSCH. CTR. (Feb. 27, 2019), https://www.pewresearch.org/fact-tank/2019/02/27/response-rates-in-telephone-surveys-have-resumed-their-decline [https://perma.cc/YYD8-N5TD] (noting 6% response rate for telephone surveys conducted by nonprofit public opinion research organization).

183 *See* Kahneman, Knetsch & Thaler, *supra* note 9, at 729 n.1.

184 *See, e.g.*, Elizabeth Hoffman, David L. Schwartz, Matthew L. Spitzer & Eric L. Talley, *Patently Risky: Framing, Innovation, and Entrepreneurial Preferences*, 34 HARV. J.L. & TECH. 191, 232–33 (2020) (demonstrating nearly identical marginal treatment effects between MTurkers and university participants after controlling for differential baseline proclivities).

185 In a pilot experiment executed approximately one week prior to this data collection effort, we also collected data from an additional 198 MTurk convenience sample; the results are not reported below but are qualitatively similar.

Table 3: *Distribution of Participants Across Arms of Experiments 1 and 2*

Experiment 1		**N**	**Percent**
Arm A	Hand Sanitizer ($3 Base Price)	65	9.91%
Arm B	Hand Sanitizer ($15 Base Price)	61	9.3%
Arm C	Ice Scraper ($3 Base Price)	63	9.6%
Arm D	Shovel ($15 Base Price)	65	9.91%
Experiment 2		**N**	**Percent**
Arm E	Hand Sanitizer (Common) + Quantity / Auction	67	10.21%
Arm F	Hand Sanitizer (Common) + Apology + Paid Leave	69	10.52%
Arm G	Hand Sanitizer (Common) + Apology	67	10.21%
Arm H	Hand Sanitizer (Common) + Paid Leave	68	10.37%
Arm I	Hand Sanitizer (Common) + Resident Conditions	64	9.76%
Arm J	Hand Sanitizer (Common) + Potato Chips Condition	67	10.21%
	Total	**656**	**100%**

A. *Descriptive Statistics and Respondent Demographics*

Table 4 presents summary statistics of our respondents' demographic characteristics. Overall, our participants display reasonably strong covariate balance, with little to no statistically significant distributional differences across the respective arms. Our subject pool is split roughly evenly between male and non-male participants (we have only one participant who identified as non-binary in gender, and we classified them as non-male). The mean respondent is approximately 37.4 years of age (within one year of the national median),[186] with a substantial variation in both directions. Approximately half of our subjects (48.2%) report household incomes above $60,000, which again is consistent with Census data (the national median household income in 2018 was $61,937).[187] Approximately two-thirds of participants live in either rural or suburban areas, and they are geographically distributed throughout the U.S. in a fairly representative manner.[188]

Table 4: *Summary Statistics*
(Means; Standard Deviations in italics)

	Arm (A)	Arm (B)	Arm (C)	Arm (D)	Arm (E)	Arm (F)	Arm (G)	Arm (H)	Arm (I)	Arm (J)	Total
Duration in Seconds	214.723	180.443	195.587	193.815	242.388	258.623	223.746	232.691	236.719	209.537	219.470
	169.071	*111.147*	*150.760*	*123.855*	*168.637*	*194.907*	*151.428*	*175.004*	*158.836*	*102.224*	*154.421*
Age	38.800	40.049	35.190	37.692	35.299	38.783	37.015	35.765	38.656	36.493	37.354
	13.748	*14.258*	*12.251*	*14.502*	*11.040*	*13.968*	*14.177*	*12.520*	*11.865*	*11.923*	*13.078*
Male	0.462	0.525	0.524	0.523	0.478	0.522	0.537	0.353	0.563	0.567	0.505
	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Household Income Bin (1 to 7)	3.462	3.492	4.048	3.431	3.463	3.391	3.672	3.559	3.750	3.716	3.596
	1.650	*1.785*	*1.641*	*1.610*	*1.599*	*1.717*	*1.691*	*1.661*	*1.623*	*1.622*	*1.660*
IncomeOver60K	0.415	0.426	0.587	0.446	0.448	0.391	0.522	0.500	0.547	0.537	0.482
	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Household Effects of COVID19	0.415	0.393	0.460	0.446	0.388	0.507	0.507	0.338	0.406	0.522	0.439
	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Local COVID19 Effects (-2 to 2)	0.738	0.951	0.889	1.015	0.940	1.014	0.597	0.779	0.797	0.970	0.869
	1.020	*1.189*	*1.094*	*0.992*	*0.936*	*1.105*	*1.268*	*1.220*	*1.057*	*1.044*	*1.097*
National COVID19 Effects (-2 to 2)	1.277	1.393	1.429	1.385	1.433	1.652	1.030	1.368	1.406	1.433	1.381
	1.023	*1.084*	*0.946*	*0.963*	*0.874*	*0.682*	*1.128*	*1.064*	*0.849*	*0.908*	*0.964*
Politics (-2 to 2)	-0.154	-0.230	-0.079	0.123	-0.030	-0.203	0.045	-0.118	-0.203	-0.164	-0.101
	1.395	*1.499*	*1.462*	*1.420*	*1.477*	*1.410*	*1.451*	*1.471*	*1.427*	*1.504*	*1.446*
Conservative (Politics > 0)	0.369	0.410	0.460	0.477	0.463	0.420	0.478	0.456	0.391	0.433	0.436
	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Urban	0.277	0.377	0.302	0.354	0.313	0.362	0.388	0.353	0.359	0.358	0.345
	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Unfair (1 to 4)	2.446	2.437	2.323	2.395	2.322	2.252	2.478	2.441	2.513	2.570	2.420
	1.154	*1.193*	*1.142*	*1.132*	*1.200*	*1.044*	*1.142*	*1.086*	*1.134*	*1.143*	*1.136*
Legal Response (1 to 5)	2.118	2.295	1.799	2.000	2.221	1.887	2.251	1.976	2.175	2.352	2.117
	1.297	*1.430*	*1.226*	*1.131*	*1.399*	*1.197*	*1.346*	*1.324*	*1.374*	*1.376*	*1.328*

As detailed in the previous subsection, for each vignette, our participants choose one of four responses on an unfairness scale and one of five choices on

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186 *Population Estimates Show Aging Across Race Groups Differs*, U.S. CENSUS BUREAU (June 20, 2019), https://www.census.gov/newsroom/press-releases/2019/estimates-characteristics.html [https://perma.cc/4CGP-546L].

187 Gloria Guzman, *U.S. Median Household Income Up in 2018 from 2017: New Data Show Income Increased in 14 States and 10 of the Largest Metros*, U.S. CENSUS BUREAU (Sept. 26, 2019), https://www.census.gov/library/stories/2019/09/us-median-household-income-up-in-2018-from-2017.html [https://perma.cc/XK7Y-JJHJ].

188 Jed Kolko & Shawn Bucholtz, *America Really Is a Nation of Suburbs*, BLOOMBERG (Nov. 14, 2018), https://www.bloomberg.com/news/articles/2018-11-14/u-s-is-majority-suburban-but-doesn-t-define-suburb [https://perma.cc/LAQ9-H3LR] ("According to the newly released 2017 American Housing Survey (of nearly 76,000 households nationwide), about 52 percent of people in the United States describe their neighborhood as suburban, while about 27 percent describe their neighborhood as urban, and 21 percent as rural.").

a legal-response scale. The cross-tabulated breakdown of these responses—with integer "scores" representing each ordered response—are depicted in Table 5, which pools data across both experiments, all participants, and all conditions. As illustrated by the table, *Unfair* assessments (columns) are roughly evenly split overall across the four ordered categories. *Legal Response* answers (rows), in contrast, are discernibly skewed towards mild responses, with fully half of our respondents overall opining that "Nothing" is the appropriate response. (This response is overwhelmingly from participants who evaluate the behavior in question as being either "Completely Fair" or "Acceptable.") It bears noting that a second local mode in *Legal Response* assessments corresponds with a much more severe form of punishment entailing not only taking the item without compensation, but also fining the store/resident $2,500. (This response is overwhelmingly from participants who evaluate the seller's behavior as either "Unfair" or "Very Unfair.")

Table 5: *Dependent Variable Cross-Tabulation*
(All Participants/Rounds)

Legal Response \ *Unfair*	1: Completely Fair	2: Acceptable	3: Unfair	4: Very Unfair	Row Total
1: Nothing	24.6%	16.2%	7.4%	1.8%	50.1%
2: Take the product & pay seller initial price	2.0%	4.2%	7.1%	4.0%	17.3%
3: Take product & pay seller nothing	1.0%	3.0%	2.1%	1.3%	7.4%
4: Take product, pay nothing, & fine seller $2,500	0.6%	1.1%	6.0%	13.7%	21.4%
5: Take product, pay nothing, fine & imprison seller	0.3%	0.3%	0.3%	3.0%	3.9%
Column Total	**0.2846**	**0.2489**	**0.228**	**0.2385**	**100%**

We hasten to note that—beyond the natural orderings they connote—integer scores assigned to both of dependent variables are relatively arbitrary. In particular, one must take care not to interpret the numerical scores in Table 5 as embodying the *intensity* of respondents' views. One cannot be sure, for example, that the subjective "distance" between a "Completely Fair" assessment of Unfairness (scored as 1) and an "Acceptable" assessment (scored as 2) is the same as the distance between "Acceptable" and "Unfair" (scored as 3). Thus, while we find it convenient for expositional purposes to use this integer scoring rubric in summarizing our results, we also circle back in a subsequent part to verify that our qualitative results carry over to methods that steer clear of arbitrary cardinal ranking scales.[189]

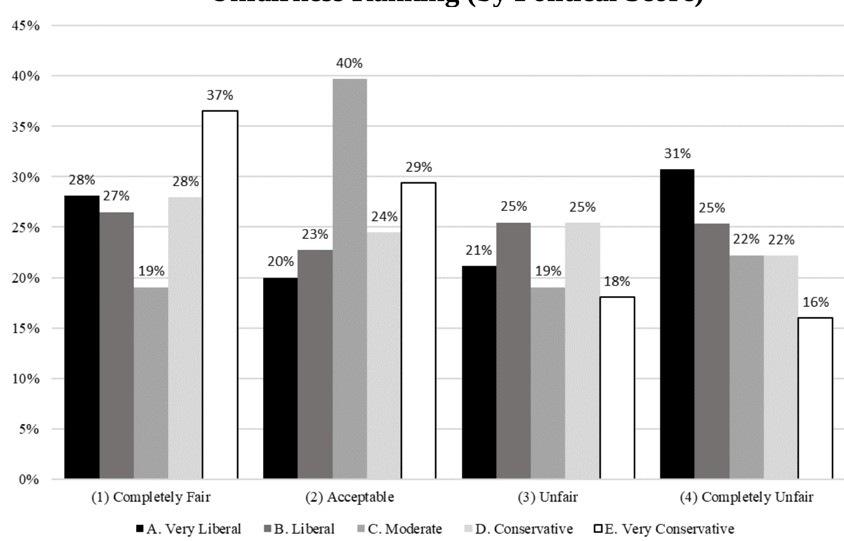
It is further worth noting that our dependent variable responses vary somewhat along certain demographic dimensions. Perhaps the most notable such covariation concerns the distributions of respondents' answers subdivided

[189] *Spoiler alert:* It does not. *See infra* Appendix B and accompanying notes.

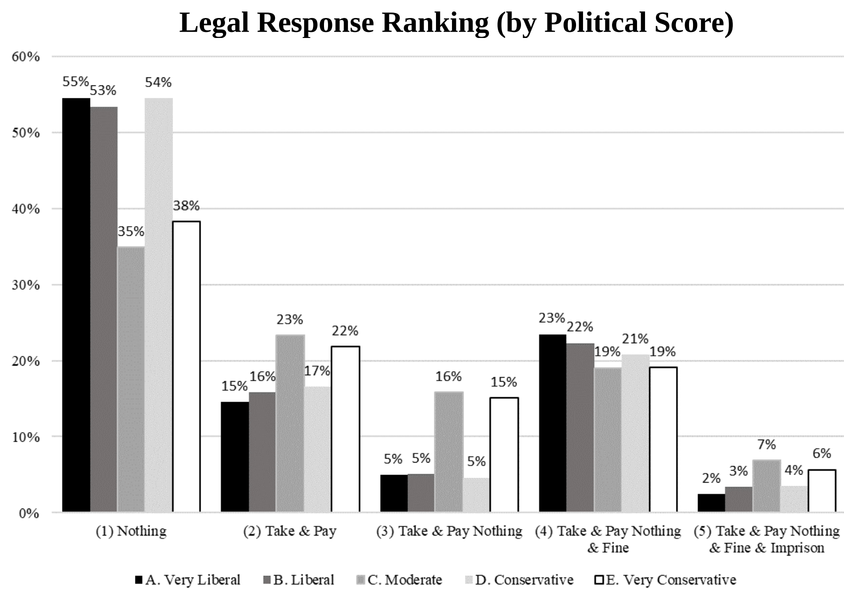
by political ideology, as reflected in Figure A below. On the whole, as respondents grow more conservative, they are increasingly *disinclined* to describe behavior as "Unfair." The pattern is somewhat more heterogeneous with respect to Legal Response. Very conservative respondents appear to be relatively *more* likely to recommend a legal sanction than other groups (particularly Very Liberal respondents), notwithstanding their lower overall proclivity to label conduct as unfair. This pattern may well be consistent with some theory of ideology, such as tradeoffs between when liability is triggered and the magnitude of sanctions.[190] On the other hand, conditional on recommending some type of punishment, very liberal respondents tend to be mildly more likely to prefer a severe punishment with "teeth," such as a significant fine. Regardless of interpretation, it appears clear that if our experimental manipulations have an effect, they do so on top of a heterogeneous baseline as to some underlying demographic covariates, such as politics (a complication that randomized assignment helps to resolve).

Figure A: *Dependent Variables as a Function of Politics*

Unfairness Ranking (by Political Score)



190 *See, e.g.*, Gary S. Becker, *Crime and Punishment: An Economic Approach*, 76 J. POL. ECON. 169, 170, 192 (1968).



B. *Analysis of Vignette Responses*

We now proceed to analyze some of the key results from our survey. For ease of exposition and accessibility, we present our results using a series of visual representations and simple statistical means/distributional tests. For the more technically minded reader, in Part IV.B.3 and Appendix B we present our results using a variety of regression and qualitative-choice models (all of which are consistent with the visual representations below).

1. *Experiment 1 General Results*

We start with Experiment 1 (N = 254), which endeavors (inter alia) to replicate the findings of KK&T. In each study Arm, participants are asked to evaluate the Unfairness of No-Change, a 33% price increase, and a 333% price increase. First consider the Unfairness assessment for each one of these conditions (comparing vignettes), as depicted in Figure B below. Note that unfairness assessments become more pronounced as the magnitude of the price increase grows. This is of course quite intuitive, and it was an intended result of our study design. Also, it appears that the range of price increases presented to participants does, in fact, "move the needle" in influencing participants' unfairness responses.

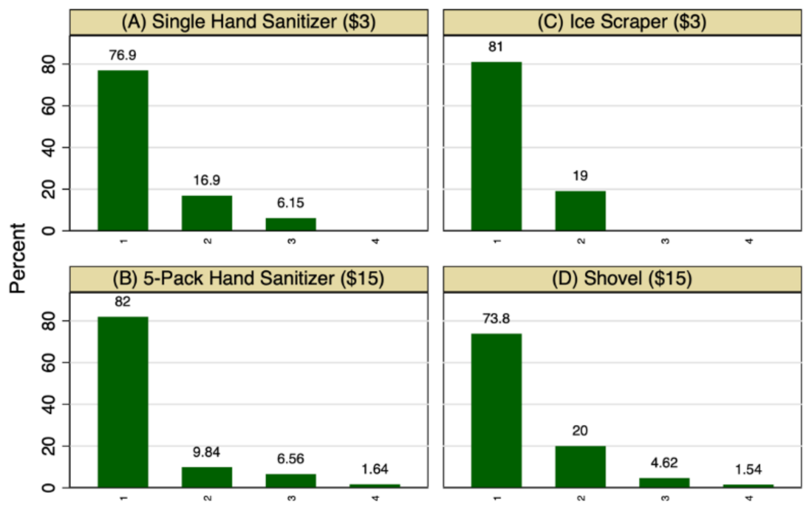
In addition, note that unfairness responses look relatively similar across all four vignettes, regardless of whether the item is a low value ($3) item or a higher cost purchase ($15), as well as regardless of whether it is a pandemic-related good (hand sanitizer) or a hypothetical snowstorm-related purchase (ice scraper; shovel). Although not enormously surprising, it is worth noting that participants do not appear to tailor their unfairness evaluation to the moment. Nonparametric Kolmogorov-Smirnov tests categorically fail to reject the null hypothesis that the distributions across the four arms are identical for each price increase condition.

Figure B: *Unfairness Assessment (by Percentage Increase)*

Unfairness (No Change Condition; By Arm): Panel (i)

(1) Completely Fair; (2) Acceptable; (3) Unfair; (4) Very Unfair

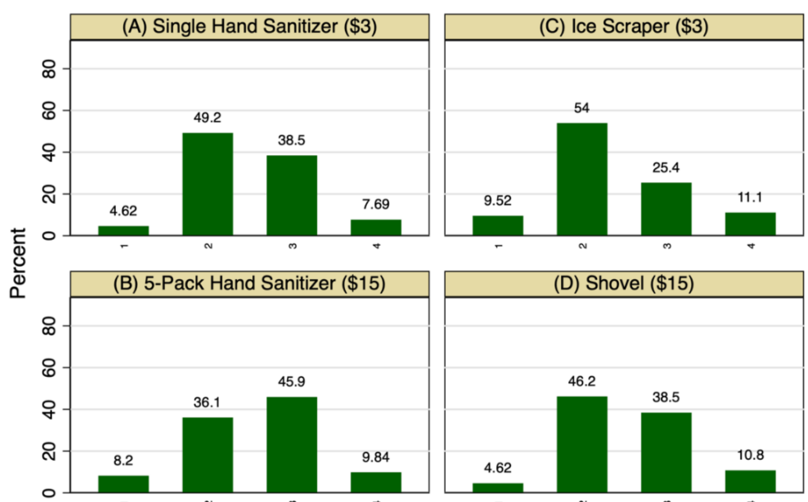
Graphs by Arm Label



Unfairness (33% Change Condition; By Arm): Panel (ii)

(1) Completely Fair; (2) Acceptable; (3) Unfair; (4) Very Unfair

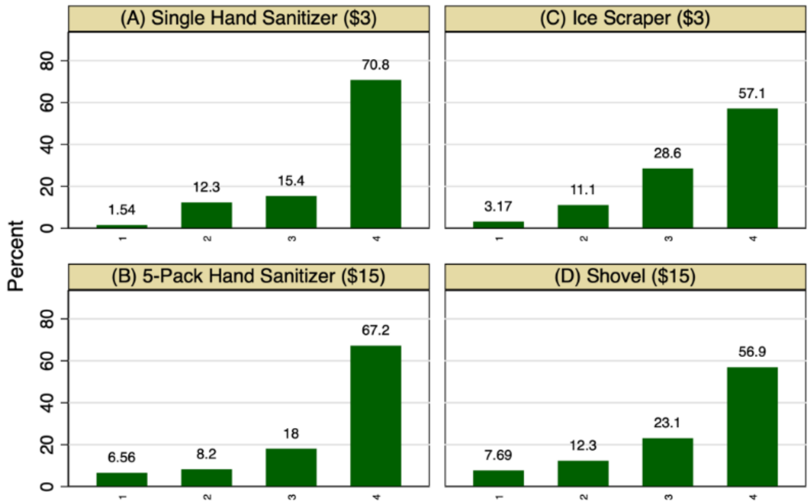
Graphs by Arm Label



Unfairness (333% Change Condition; By Arm): Panel (iii)

(1) Completely Fair; (2) Acceptable; (3) Unfair; (4) Very Unfair

Graphs by Arm Label



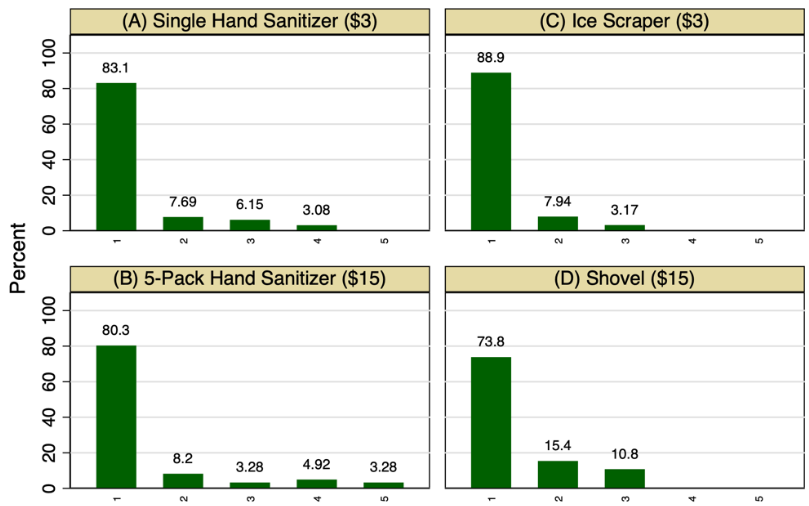
Finally, and perhaps most significantly, notice that for moderate (33%) price increases in Panel (ii), our participants tend, on the whole, to assess the price change as relatively fair (or at least not unfair). In all four study arms, in fact, a majority of participants find the 33% price increase to be either "Completely Fair" or "Acceptable." This assessment, notably, is also manifest in Arm D, which is an exact replication of the scenario that KK&T presented to their Canadian participants. There, they report that a 33% increase in the price of a snow shovel during a blizzard is deemed "Unfair" or "Very Unfair" by 82% of their participants (N = 107).[191] We are not able to replicate the significant magnitude of that result; indeed, our results suggest that unfairness assessments are consistently and significantly milder than what KK&T measured for the same magnitude of price increase. Although we are able to generate unfairness assessments on the order of KK&T's result, for our participants it entails an extreme (333%) price increase.

[191] Kahneman, Knetsch & Thaler, *supra* note 9, at 729.

Figure C: *Legal Response Assessment (by Percentage Increase)*

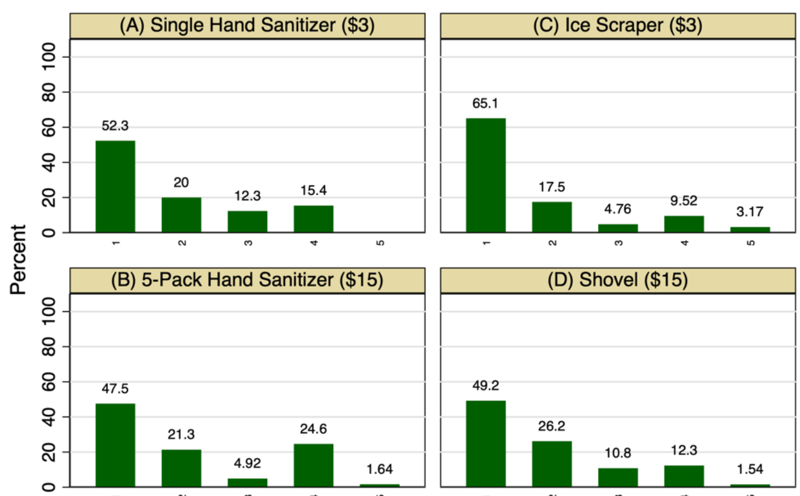
Legal Response (No Change Condition; By Arm): Panel (i)

(1) Nothing; (2) Take & Pay; (3) Take & Pay Nothing;
(4) Take, Pay Nothing, Fine; (5) Take, Pay Nothing, Fine, Imprison
Graphs by Arm Label



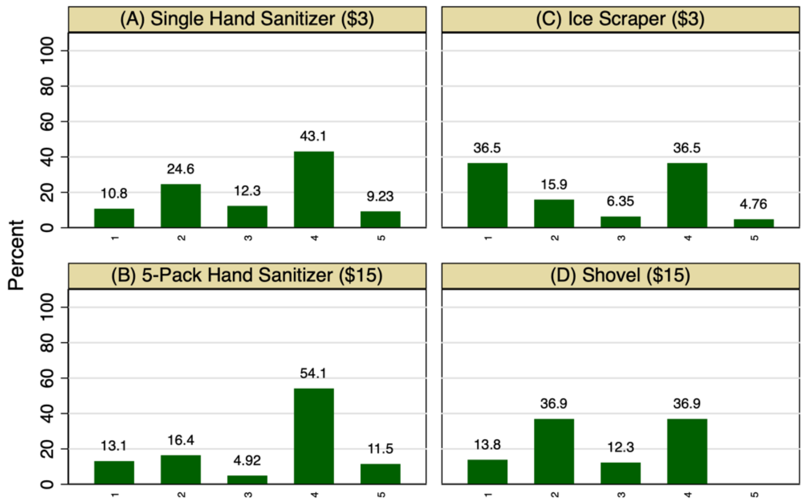
Legal Response (33% Change Condition; By Arm): Panel (ii)

(1) Nothing; (2) Take & Pay; (3) Take & Pay Nothing;
(4) Take, Pay Nothing, Fine; (5) Take, Pay Nothing, Fine, Imprison
Graphs by Arm Label



Legal Response (333% Change Condition; By Arm): Panel (iii)

(1) Nothing; (2) Take & Pay; (3) Take & Pay Nothing;
(4) Take, Pay Nothing, Fine; (5) Take, Pay Nothing, Fine, Imprison



The panels in Figure C present the analogous findings as in Figure B, but as applied to participants' assessment of the appropriate legal response to each hypothesized action. In contrast to our participants' unfairness assessments, subjects do exhibit some heterogeneity across the study arms in assessing legal response. Two aspects of participants' legal response preferences bear emphasizing. First, the plurality (and in many cases the majority) of participants tend to prefer no action ("Nothing") in the face of no price change or even moderate (33%) price changes. Moreover, in those two conditions, participants' responses are statistically indistinguishable across the four vignette arms of Experiment 1. Second, when price increases become extreme (333%), participants are far more willing to countenance significant legal implications, in particular seizing the product and fining the seller. But here, in contrast, we *do* find statistically significant differences among the different vignette conditions. Participants presented with the two hand sanitizer vignettes are significantly more likely to advocate severe punishment for extreme price gouging than participants presented with either the analogous ice scraper or snow shovel vignettes.[192] Thus, it appears that while participants do not appear to respond to salient market panics in assessing the *fairness* of a price increase, they do (on average) support steeper penalties for perceived unfair behavior when the product is closely tied to an ongoing and salient event, such as COVID-19.

Analysis of our data reveals that there appear to be discernible and consistent differences in our participants' responses as their political ideologies

[192] Under a nonparametric Kolmogorov-Smirnov test, we reject the hypothesis of identical distribution in both cases (p = 0.029 and p = 0.011, respectively).

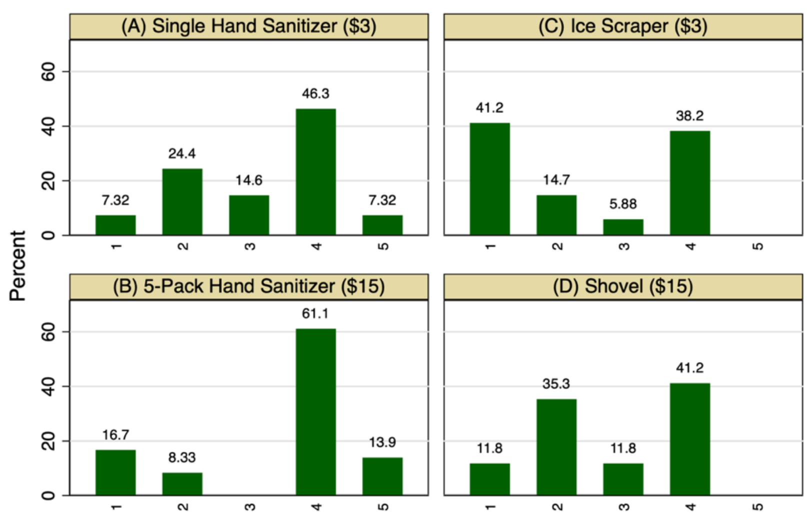
vary from liberal to conservative on a 5-point scale (-2 to 2, respectively). To tease out this tendency further, we delve into whether the effects noted above were related to political differences among participants. Figure D reproduces Panel (iii) from Figure C, but it separates between "Conservative" participants (with politics scores of 1 or 2 in the scale summarized above) and "Non-Conservative" participants (with politics scores between -2 and 0). As one can see from Figure D, non-conservatives appear (on the whole) to skew more heavily towards severe sanctions than do conservatives, and they do so particularly in the hand sanitizer vignettes. This effect is especially pronounced in Arm B, which relates to a 5-pack of hand sanitizers and a price increase from \$15 to \$50. In contrast, conservatives appear to respond more mildly on the whole than non-conservatives when it comes to legal sanction, and their response is largely consistent across all different vignettes.

Figure D: *Legal Response for Extreme Price Increase (by Politics)*

Legal Response (333% Change Condition; Conservatives; By Arm)

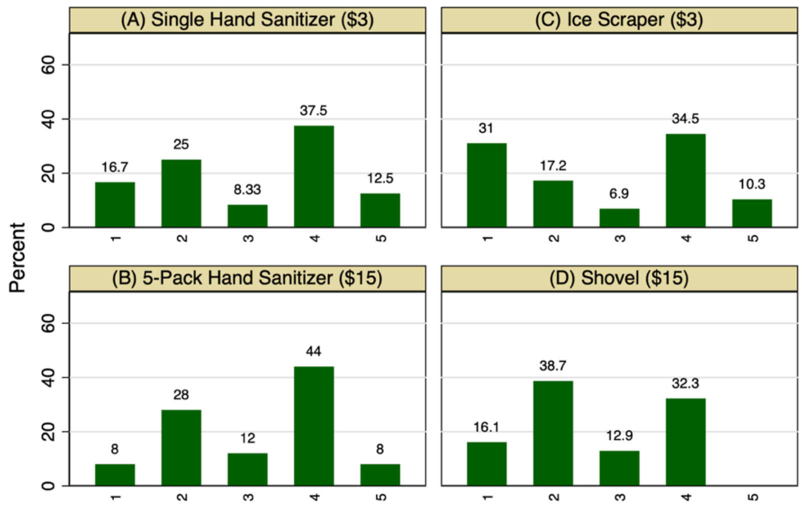
Panel (i)

(1) Nothing; (2) Take & Pay; (3) Take & Pay Nothing;
(4) Take, Pay Nothing, Fine; (5) Take, Pay Nothing, Fine, Imprison
Graphs by Arm Label



Legal Response (333% Change Condition; Conservatives; By Arm)
Panel (ii)

(1) Nothing; (2) Take & Pay; (3) Take & Pay Nothing;
(4) Take, Pay Nothing, Fine; (5) Take, Pay Nothing, Fine, Imprison
Graphs by Arm Label



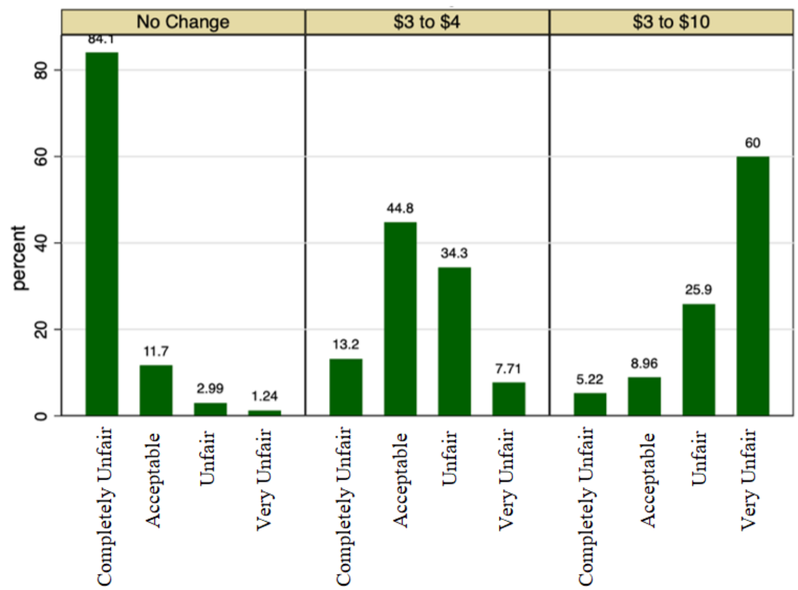
2. *Experiment 2 General Results*

With the results of Experiment 1 providing a baseline, we now move on to consider Experiment 2 (N = 402), which expands outward from the $3 Hand Sanitizer vignette in Arm A from Experiment 1. In this experiment, all participants commonly receive that same vignette, but then are channeled into a set of variations, exploring alternative rationing devices, apologies/rationales, different products, and the identity of the seller.

a. *Common Vignettes*

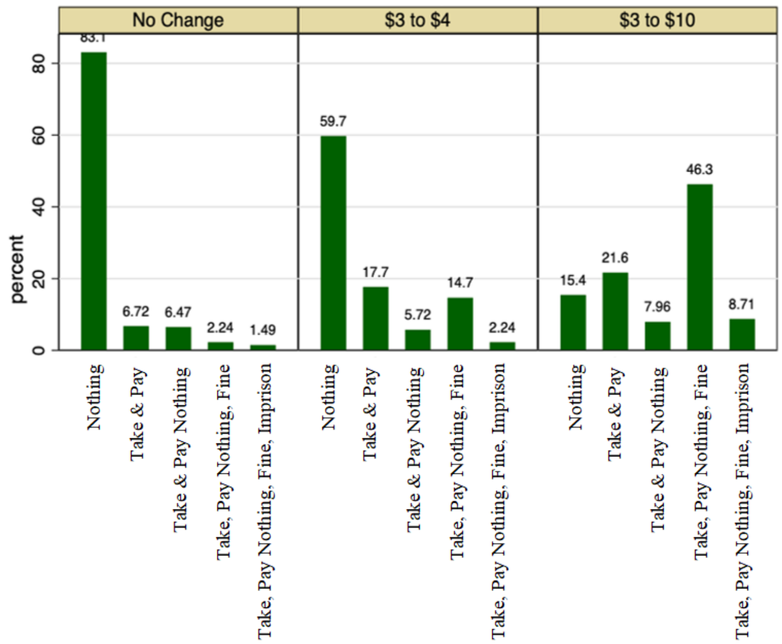
We begin with the three “common vignettes” presented to all participants regardless of study arm: (1) No Change; (2) Merchant increases price for hand sanitizer from $3 to $4; and (3) Merchant increases price for hand sanitizer from $3 to $10. Figure E illustrates participants’ aggregated unfairness rankings and legal response rankings for each of these vignettes. These results are substantially similar to our single-pack hand-sanitizer results from Experiment 1 (see Figure B). We report these results again for Experiment 2 to confirm that the sample population for Experiment 2—recruited through the same mechanism as Experiment 1—shares similar fairness intuitions. Moreover, these distributions are statistically indistinguishable[193] from those reported in Arm A of Experiment 1 above, which (recall) presented participants with identical vignettes as did the common conditions.

Figure E: *Common-Vignette Responses (All Arms)*
Unfairness Ranking: Common Baseline Vignettes



[193] For example, using a nonparametric Kolmogorov-Smirnov test, we resoundingly fail to reject the hypothesis of identical distributions for both Unfairness and Legal Response rankings.

Legal Response Ranking: Common Baseline Vignettes



To underscore and summarize an important difference between our results and those of KK&T, it is helpful to pool results across Arm A from Experiment 1 and the identical common conditions throughout Experiment 2, reporting them collectively in Table 6:

Table 6: *Breakdown of Responses by Condition*
(Experiment 1, Arm A combined with Experiment 2 Common Qs, Arms E-J)

	No Change Hand Sanitizer	**$3 to $4 Hand Sanitizer**	**$3 to $10 Hand Sanitizer**
Completely fair	83.08%	11.99%	4.71%
Acceptable	12.42%	45.40%	9.42%
Unfair	3.43%	34.90%	24.41%
Very unfair	1.07%	7.71%	61.46%
Fair Total (Completely Fair + Acceptable)	**95.50%**	**57.39%**	**14.13%**
Unfair Total (Unfair + Very Unfair)	**4.50%**	**42.61%**	**85.87%**
Total Responses	467	467	467

As the pooled data results from Table 6 illustrate, a 33% price increase elicit a negative response (i.e., "Unfair" or "Very Unfair") from just under 43% of participants (in contrast to the 82% reported by KK&T).[194] Within our subject pool, it is possible to generate negative assessments comparable to those reported by KK&T (in our case 86%), but doing so entails presenting subjects with an extreme price increase (333%) that was an order of magnitude higher than that reported by KK&T (33%).

b. *Quantity Restrictions and Auctions (Arm E)*

Now consider the participants in Arm E (N = 67), who are presented with two additional mechanisms for allocation other than changing prices as in the common conditions: Quantity Restrictions and Auctions. The figures below illustrate respondents' answers for both Unfairness and Legal Response. For the purposes of comparison, we have reproduced the two common conditions involving an actual price change on the right two frames of each panel.

As depicted by Figure F, participants display drastically different attitudes towards these two alternative allocation devices. While participants view Auctions with particular distaste, Quantity Restrictions are considered significantly fairer than any attempt to ration by price. The mean Unfairness score is 1.343 for Quantity Restrictions and 3.403 for Auctions, as compared for 2.366 for the Merchant \$3 to \$4 ("M3to4") condition and 3.405 for Merchant \$3 to \$10 ("M3to10"). Quantity restrictions appear to be viewed as fairer than even moderate price increases from \$3 to \$4.[195] Strikingly, only 3% of the subjects in our sample view rationing of necessary health supplies during a pandemic to be unfair or very unfair. Auctions, by contrast, are viewed as significantly more *unfair* than the moderate price increase,[196] and approximately on par with an extreme price increase from \$3 to \$10.[197] With the exception of the M3to10 and Auction distributions, we reject all other hypotheses of equivalence for the remaining distributions at every conventional significance level. The resoundingly negative reaction to auction protocols is intriguing, since auction protocols are widely considered by economists to be among the most efficient allocation mechanisms.[198]

Participants' attitudes about Legal Response follow a similar pattern. The mean score for Quantity Restrictions (1.328) is on par with the No Change condition (1.323), and substantially lower than for the M3to4 condition

194 Kahneman, Knetsch & Thaler, *supra* note 9, at 729.

195 A means test rejects the null hypothesis of equivalence between Quantity Restrictions and the M3to4 condition ($t = 7.640$; $p = 0.000$).

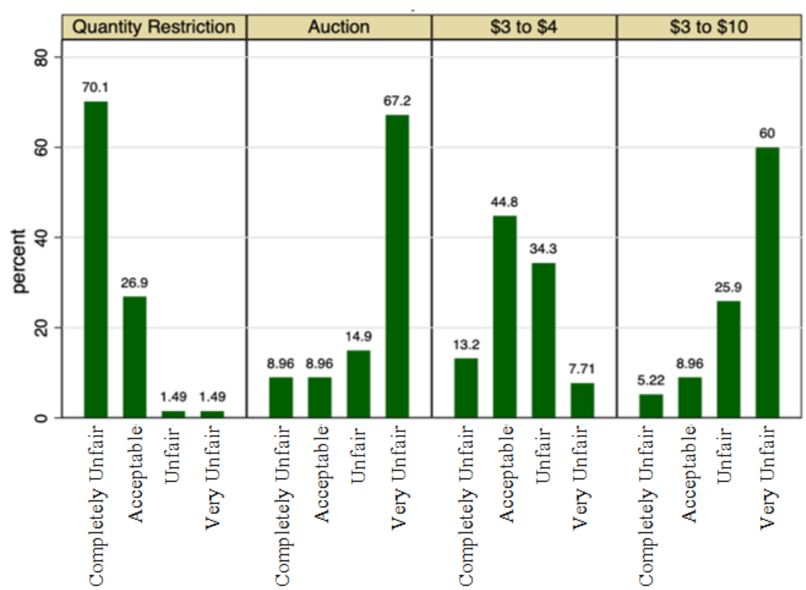
196 $t = 6.998$; $p = 0.000$.

197 $t = 1.276$; $p = 0.2042$.

198 *See supra* Part III.B.2.

(1.821).[199] The mean score for Auctions (3.239) is roughly on par with the M3to10 condition (3.405), and they are not statistically different from one another.[200] Distributional tests cannot reject the hypothesis that the Auction responses are equivalent to the M3to10 condition,[201] while the Quantity Restrictions condition is mildly more left skewed than the M3to4 condition.[202]

Figure F: *Quantity Restrictions and Auctions (compared to common conditions)*
Unfairness Ranking
Auction & Quantity Restrictions (Arm 1)



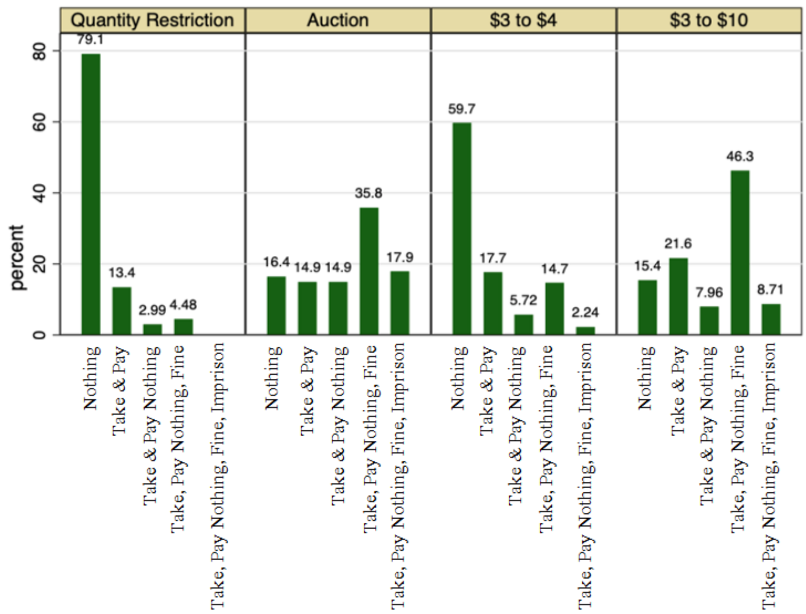
[199] We reject the hypothesis of equivalence between Quantity Restrictions and M3to4 ($t = 3.3625$; $p = 0.001$).

[200] $t = 0.7959$; $p = 0.4275$.

[201] $p = 0.730$, two-tailed test.

[202] $p = 0.069$, two-tailed test.

Legal Response Ranking
Auction & Quantity Restrictions (Arm 1)



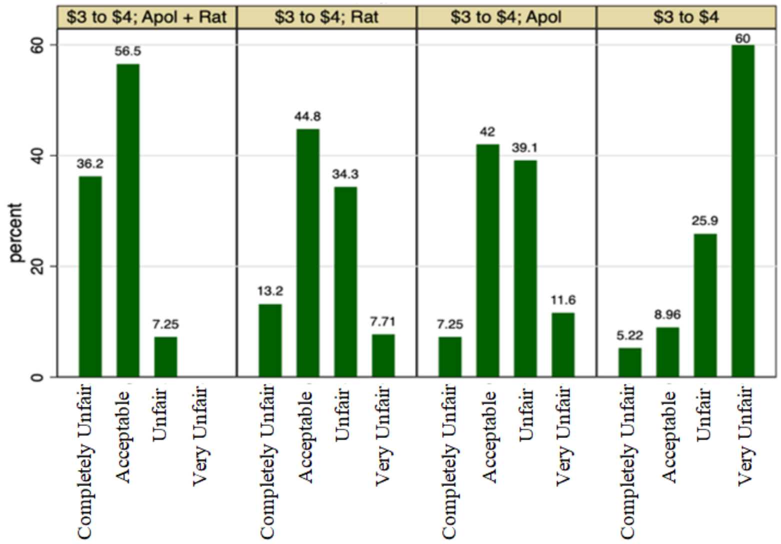
c. *Apologies and Rationales (Arms F, G, H)*

We now turn to the use of apologies and/or rationales as a way to "soften the blow" of price changes. We designed several arms of our study to analyze whether adverse reactions to a price increase can be mollified by accompanying it with an apology and/or a rationale for it that directs the added funds to a socially valuable use (in this case subsidizing furloughed workers). Participants in Arm F of our study (n = 69) consider price increases that are accompanied by *both* an apology and a rationale.

Figure G: *Apologies plus Rationales*

Unfairness Ranking

Merchant: Apology & Rationale (Arm 2)



Legal Response Ranking

Merchant: Apology & Rationale (Arm 2)

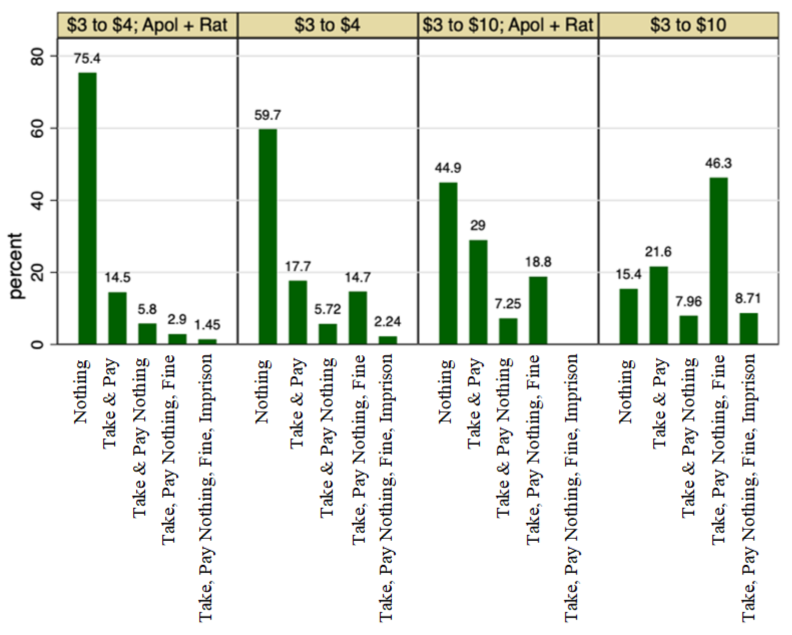


Figure G summarizes the results (with the baseline results for the analogous "naked" price change included for reference). As is clear from the Figure, providing an apology/rationale alongside a price change has a striking effect, mollifying participants' adverse reactions considerably. Its inclusion is associated with a behaviorally and statistically significant reduction in both Unfairness and Legal Response scores. As to the former, the effect is manifest across both moderate price increases (mean declines from 2.366 to 1.710)[203] and extreme price increases (mean declines from 3.405 to 2.551).[204] Indeed, the effects of an apology/rationale are so strong for extreme ($3 to $10) price increases as to move unfairness scores to be statistically on par with moderate price increases absent an apology or rationale.[205]

The effects for Legal Response are analogous. We find statistically significant reductions in mean score for moderate price increases (mean declines from 1.821 to 1.406)[206] and extreme price increases (mean declines from 3.112 to 2.000).[207] And the use of an apology/rationale with an extreme price increase similarly moves Legal Response reactions to be on par with those typifying a moderate ordinary price increase.[208]

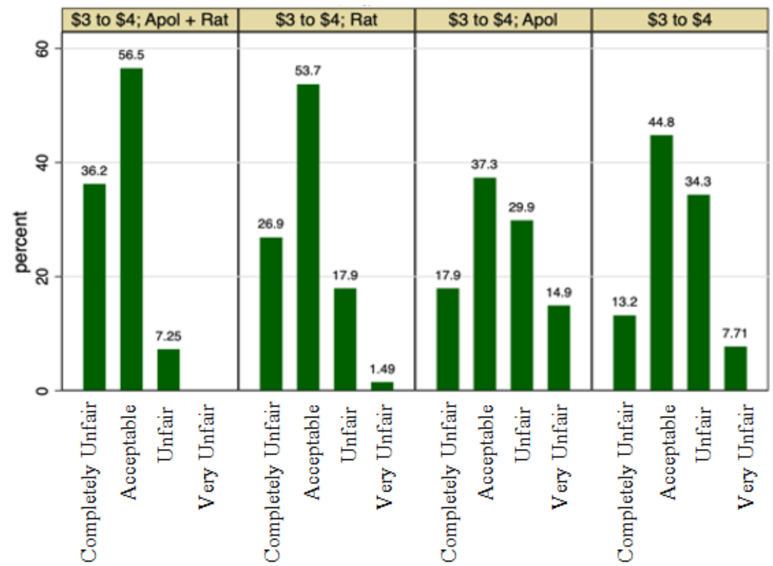
Although these interaction results are relatively striking, they also raise the question of whether the *apology* or the *rationale* is carrying the most water. To address this question, we replicated Arm 2's approach in Arms G and H of the study. In Arm G, participants (N = 67) were given only an apology for the price change with no rationale, while in Arm H, participants (N = 69) were provided with a rationale with no apology. Figure H presents the results, including the combined apology/rationale outcomes from Arm F and the analogous "naked" price increase outcomes from the command conditions for reference. The left column summarizes the moderate price increase case (from $3 to $4), while the bottom panel depicts the extreme price increase (from $3 to $10). As can be seen from the diagrams, it appears that apologies and rationales can each play some role in mollifying subject responses to a price increase. However, in at least this case, the effect of the rationale appears to be the largest. This particular strength of rationales (in comparison with Apologies) is confirmed in the more detailed regression-analysis analysis presented in Appendix B. We caution the reader not to over-interpret the relative strength of rationales versus apologies as seen in *this study* to carry over generally. It warrants noting that our vignettes' rationale (subsidizing furloughed workers) was particularly public-minded, while the apology (a general apology for inconvenience) may come off as relatively unsentimental. Rather, our results are sufficient to demonstrate that both devices can serve to soften the blow of a price increase, and that their combination can be particularly potent.

203 $t = 6.4482$; $p = 0.000$.
204 $t = 7.7269$; $p = 0.000$.
205 $p = 0.729$, Kolmogorov-Smirnov test.
206 $t = 2.7801$; $p = 0.006$.
207 $t = 6.7752$; $p = 0.000$.
208 $p = 0.137$, Kolmogorov-Smirnov test.

Figure H: *Decomposing Apologies and Rationales*

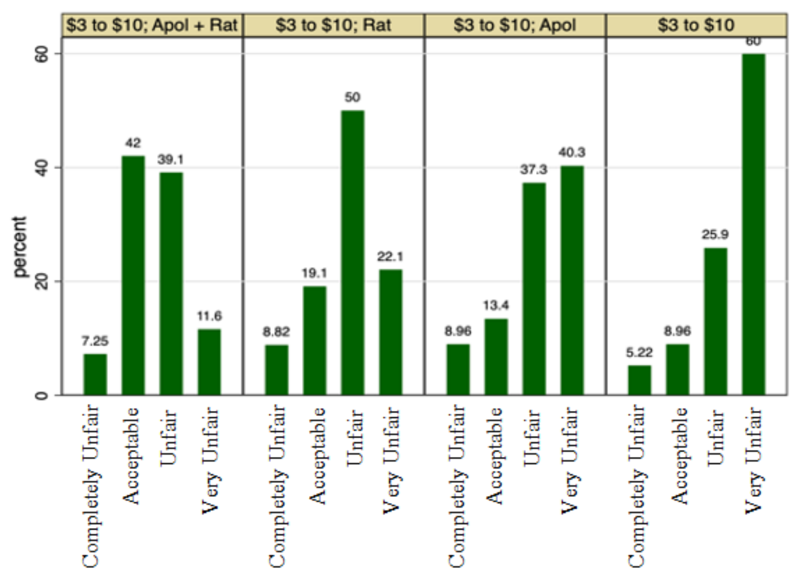
Unfairness Ranking: $3 to $4

Merchant: Apology vs. Rationale (Arms 2–4)

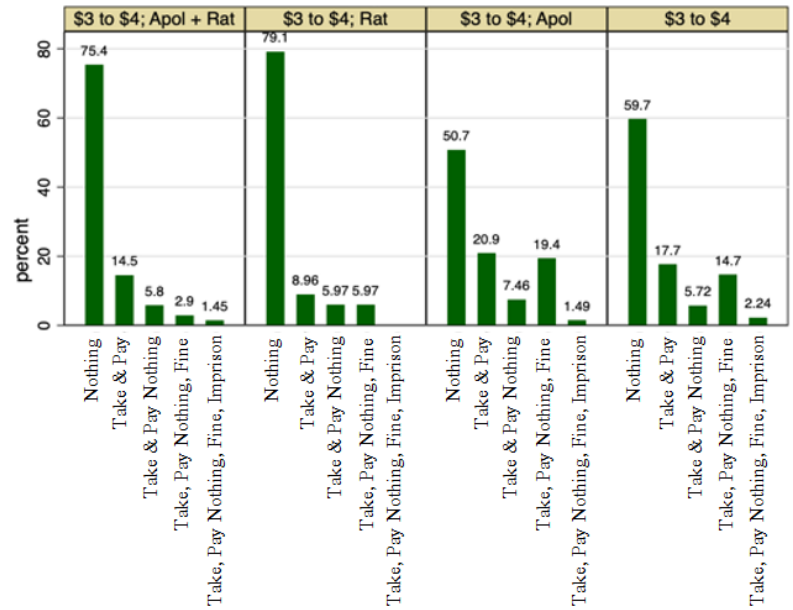


Unfairness Ranking: $3 to $10

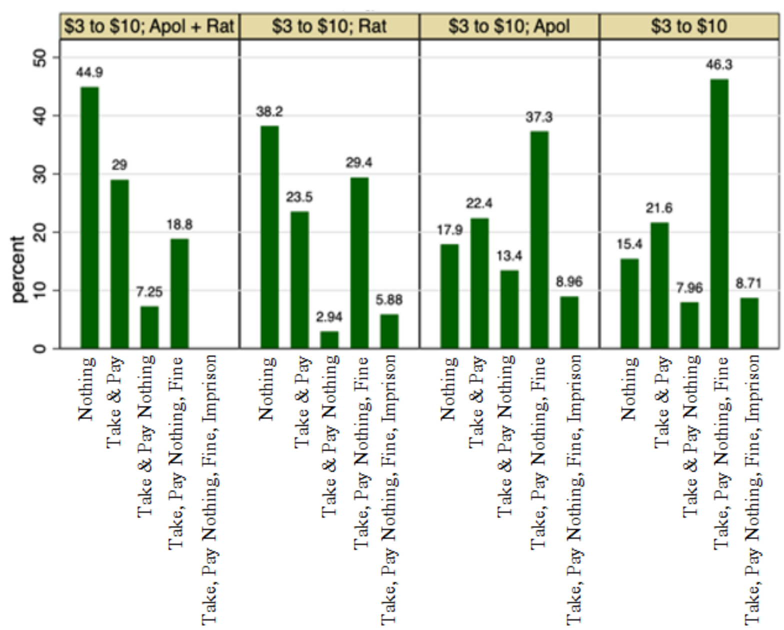
Merchant: Apology vs. Rationale (Arms 2–4)



Legal Response Ranking: $3 to $4
Merchant: Apology vs. Rationale (Arms 2–4)



Legal Response Ranking: $3 to $10
Merchant: Apology vs. Rationale (Arms 2–4)

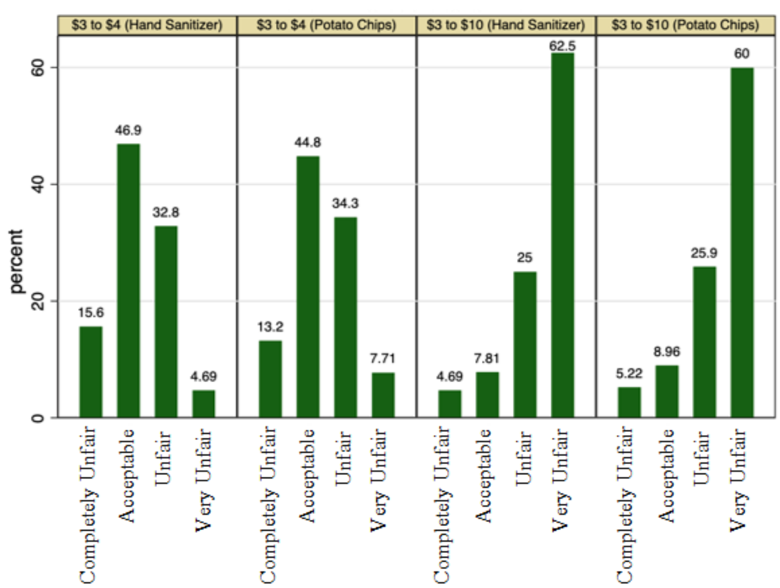


d. *Luxuries versus Necessities (Arm I)*

We now move on to consider the extent to which price increases elicit distinct responses for *luxury* items rather than *necessities*. We conjectured that, particularly during the time period for our data collection when COVID-19 spread was rampant in the U.S., respondents would be particularly repulsed by the sudden price increase for a health necessity (hand sanitizer) in comparison to a relative "luxury" item (potato chips). Arm I of our study (N = 64) therefore asked respondents to consider additional vignettes that replicated the hand-sanitizer vignettes but with potato chips substituted instead.

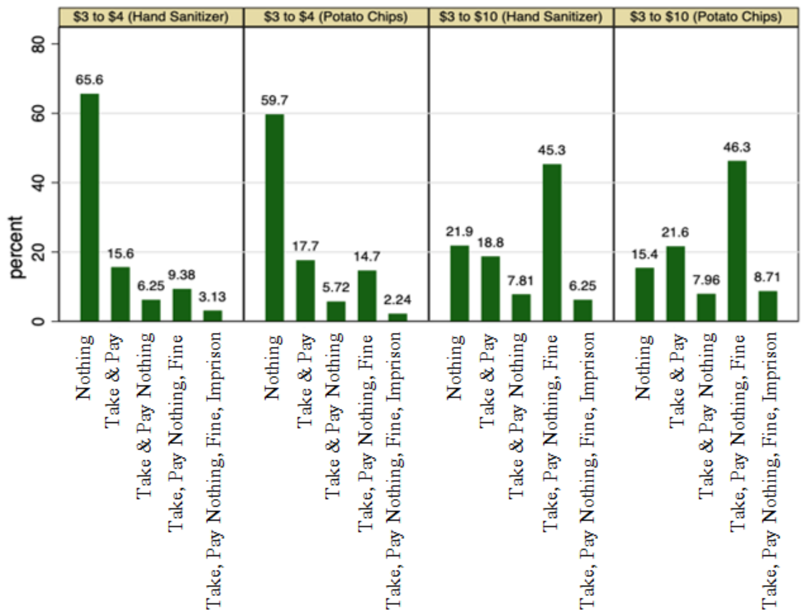
Interestingly, we did not detect a significant attitudinal difference in our respondents when the vignette switched from a necessity to a luxury. As illustrated in Figure I, the overall distributions of opinions as to both Unfairness and Legal Response vignettes for potato chips remain virtually identical to those involving hand sanitizer. Indeed, we are unable to detect any significant difference between means for any condition, and the respective distributions for hand sanitizer and potato chips are statistically indistinguishable.

Figure I: *Price Gouging on Luxuries versus Necessities*
Unfairness Ranking
Merchant: Luxuries vs. Necessities (Arm 5)



Legal Response Ranking

Merchant: Luxuries vs. Necessities (Arm 5)



We find this result surprising, and inconsistent with our a priori conjectures regarding Experiment 2. It is possible that the time period for data collection (early May 2020) was one where price gouging (and taking offense to it) was particularly salient, and thus the coronavirus crisis served to amplify all adverse reactions to price increases categorically. Alternatively, participants may have been concerned about possible food shortages, and thus they responded just as negatively to a price increase for any food item. That said, it is interesting to note that during a crisis the revulsion to plausible price gouging does not appear to "play favorites" between bona fide necessities (that were notoriously in short supply)[209] and luxuries (that were not).

e. *Non-Merchants versus Merchants (Arm J)*

The final arm of Experiment 2 concerns the identity of the price gouging actor. Does it matter whether the actor is a merchant versus a common citizen who hoards retail items in an effort to flip them for a profit? As noted above, many state price-gouging statutes limit their application to merchants, excluding non-merchants.[210] In Arm 6 (N = 67), we replicated the two price increase

[209] *See, e.g.*, Parija Kavilanz & Vanessa Yurkevich, *A Plan to Ease the Hand Sanitizer Shortage Could Go Bust*, CNN (May 1, 2020), https://www.cnn.com/2020/05/01/business/hand-sanitizer-ethanol-fda/index.html [https://perma.cc/7VVJ-S7MF].

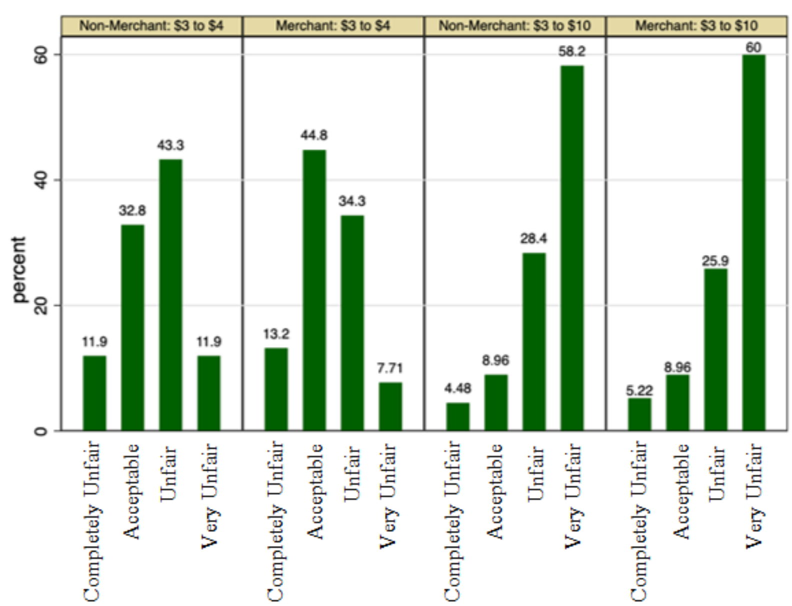
[210] *See supra* notes 92–93 and accompanying text; *infra* Appendix A and accompanying notes.

conditions ($3 to $4 and $3 to $10) from the common vignettes, but instead substituted a non-merchant in place of the merchant as the pivotal actor who was selling for a markup.

Figure J illustrates our results, including the baseline price-increase results for merchants as a reference. For extreme price increases ($3 to $10) we were unable to detect any significant difference in respondents' attitudes when the identity of the seller is a non-merchant (either at the mean or distributional level). For more moderate price increases ($3 to $4) we did detect a small difference, but in the opposite direction of standard price gouging statutes: respondents were mildly *more* (not less) inclined to consider price increases by a non-merchant to be unfair,[211] and *significantly more* (not less) disposed to recommend some sort of legal sanction.[212]

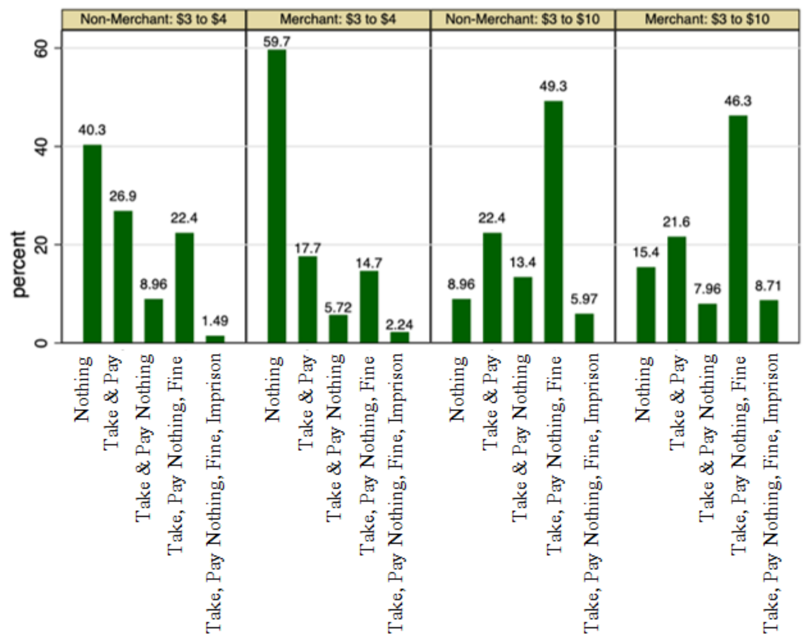
The penchant for participants to be somewhat more inclined to be displeased with non-merchants' behavior than merchants' behavior is interesting, and it presents a tension with the way that most price-gouging statutes are currently crafted. We return to the normative policy implications of this finding in the next Part.

Figure J: *Price Gouging by Non-Merchants versus Merchants*
Unfairness Ranking
Merchants vs. Non-Merchants (Arm 6)



211 Means t-test: p = 0.0833; Kolmogorov-Smirnoff distribution test: p = 0.255.
212 Means t-test: p = 0.0236; Kolmogorov-Smirnoff distribution test: p = 0.0236.

Legal Response Ranking
Merchants vs. Non-Merchants (Arm 6)



3. *Regression Analysis*

While the graphical plots and summary statistics presented above are helpful, it is possible to get a more precise assessment of our results using regression analysis and related qualitative-response variants. For technically minded readers, we outline this approach below. Although this more technical analysis allows us to unpack a few more nuances to our results, it principally reinforces our key results that have already been depicted.

For Experiment 1, our response data permit predominantly "between-subject" analysis, i.e., the different arms involved wholly distinct participants, and thus participants in that experiment did not confront a common vignette. In Experiment 2, however, additional analysis is possible. Although each experimental arm guided participants through different manipulations, we also made sure to design Experiment 2 in a way that exposed all participants to a baseline set of vignettes involving (1) No Change; (2) A merchant's 33% price increase for hand sanitizer from $3 to $4; and (3) A merchant's 333% price increase for hand sanitizer from $3 to $10. The respective arms of Experiment 2 then branched out from these baselines. Consequently, the responses to common vignettes can be helpful for statistical reasons, since they permit us to benchmark our participants against one another in identical circumstances, exploiting the quasi-panel structure of our data set to perform "within-subject" analysis. We return to this issue below.

a. *Experiment 1*

For Experiment 1, the naturally ascending categories for expressing views about unfairness and legal response suggest that a standard ordered qualitative response specification is appropriate. Table 7 presents between-subject ordered logit estimates[213] for Unfairness (clustered at the respondent level). In this and all other tables, the omitted category is the No Change condition, so that all coefficient estimates for our manipulations should be interpreted relative to that baseline.

The first two model specifications of the Table reflect the entire data set, differing only by the inclusion of demographic control variables (present in Model 2 but not Model 1).[214] Note from Model 2 that among the demographic controls, only politics appears to have a significant predictive effect on unfairness assessments, and more conservative participants appear to have lower proclivities across vignettes to ascribe unfairness to posited behavior. Models 3 and 4 are analogous to Models 1 and 2, but are limited to "conservative" participants (defined as having political ideologies that are either "Somewhat Conservative" or "Very Conservative"—representing just under 50% of the data). Models 5 and 6 do the same, but they are limited to "non-conservative" participants.

As is apparent from the table, a \$3 to \$4 price increase by a merchant is significantly more likely to elicit an unfairness response assessment over the "No Change" condition, and a \$3 to \$10 increase by a merchant is even far more likely to do so. And, notwithstanding the fact that our results appear milder economically than KK&T's on this score, both of these effects are strongly statistically significant. Note as well that the coefficient on the \$3 to \$4 merchant price increase is close to those of the other 33% price increases (M15to20, H3to4 and H15to20). And indeed, we fail to reject the null hypothesis that these coefficients are all identical.[215] Similarly, the coefficient on the \$3 to \$10 merchant price increase is close to those of the other 333% price increases (M15to50, H3to10 and H15to50), and we similarly fail to reject the null hypothesis of identical coefficients.[216]

Conservative participants appear across the board to be less likely than non-conservatives to find any action unfair, and the differences between

[213] In this and other qualitative-response regressions we employ ordered logit (rather than probit) models. Our results do not appear to turn appreciably in which of these two dominant options is employed.

[214] Because each subject responded to three separate vignettes, the total number of observations reported in the following tables (n = 762) is three-times the total number of individual respondents in Arms A through D as reflected in Table 3 (n = 254).

[215] $\chi^2 = 2.85$; $p = 0.4159$.

[216] $\chi^2 = 3.44$; $p = 0.3280$.

conservative and non-conservative participants are uniform and statistically significant whenever the underlying manipulation is as well. However, both conservative and non-conservative participants once again behave in statistically comparable manners for 33% price changes, as well as 333% price changes, regardless of the vignette. In addition, and somewhat surprisingly, participants reporting that COVID-19 had visited significant local effects where they live appeared *less* likely to view price increases as unfair. We posit that this may be due to a reckoning of at least some respondents to the practical reality that when local scarcity becomes salient, it may necessitate some form of rationing adjustment (through price or other mechanisms). In fact, we observe that the ameliorating predictive influence of local COVID-19 effects is almost exclusively concentrated in conservative respondents, suggesting that conservatives are more inclined to accept price increases in the face of salient local shortages.

Table 8 reports corresponding regression analysis findings for participants' Legal Response answers. As with unfairness, participants favor increasingly severe legal responses as the price increase escalates from 33% to 333% across all vignettes. Moreover, at least for 33% price increases, participants on the whole appear to manifest comparable views across the four vignettes presented to them.[217] For extreme price increases (333%), however, participants' views of legal response appear to become relatively more severe for the hand sanitizer vignettes, and we strongly reject the hypothesis of identical coefficients across those conditions.[218] When breaking down the estimates across conservative/non-conservative dimensions, we find that this distinction is substantially driven by non-conservatives. Among conservatives, we cannot reject the null of identical coefficients for the 333%-increase coefficients,[219] but we once again soundly reject it for non-conservative respondents.[220]

It also merits observing from Table 8 that salient local COVID-19 effects predict differential legal response ratings, but in the opposite direction as unfairness. Participants reporting local effects are *more* inclined to favor harsh punishments (even as they are less inclined to find unfairness, per Table 7). In addition, there does not appear to be a strong interaction with political leanings, as conservatives and non-conservatives appear to react similarly on the legal-response dimension in the face of local COVID-19 effects.

217 $\chi^2 = 4.60$; $p = 0.2038$.
218 $\chi^2 = 14.28$; $p = 0.0025$.
219 $\chi^2 = 4.00$; $p = 0.2614$.
220 $\chi^2 = 12.58$; $p = 0.0056$.

Table 7: *Experiment 1—Unfairness (Ordered Logit; Between Subjects)*

	All Respondents		Conservatives		Non-Conservatives	
	Model 1	**Model 2**	**Model 3**	**Model 4**	**Model 5**	**Model 6**
M3to4	3.218***	3.258***	2.636***	2.763***	3.812***	3.838***
	(8.09)	(8.17)	(4.35)	(4.32)	(6.94)	(6.93)
M3to10	5.777***	5.847***	4.821***	5.002***	6.754***	6.799***
	(9.41)	(9.43)	(5.18)	(5.08)	(8.03)	(8.02)
MNoChange15	-0.273	-0.249	0.095	0.193	-0.729	-0.74
	(-0.58)	(-0.51)	(0.14)	(0.25)	(-1.05)	(-1.02)
M15to20	3.411***	3.490***	2.990***	3.284***	3.890***	3.905***
	(8.38)	(8.27)	(4.45)	(4.47)	(7.69)	(7.46)
M15to50	5.590***	5.650***	4.228***	4.442***	6.849***	6.892***
	(10.73)	(10.73)	(4.89)	(4.98)	(10.73)	(10.70)
HNoChange	-0.31	-0.283	-0.204	-0.223	-0.508	-0.55
	(-0.71)	(-0.62)	(-0.31)	(-0.30)	(-0.83)	(-0.85)
H3to4	2.953***	3.010***	2.428***	2.494***	3.542***	3.515***
	(7.55)	(7.39)	(3.99)	(3.62)	(6.44)	(6.19)
H3to10	5.240***	5.329***	4.388***	4.549***	6.198***	6.215***
	(11.50)	(11.45)	(6.14)	(5.88)	(10.44)	(10.14)
HNoChange15	0.163	0.273	0.429	0.617	-0.256	-0.294
	(0.39)	(0.61)	(0.66)	(0.85)	(-0.43)	(-0.48)
H15to20	3.333***	3.472***	2.798***	3.081***	3.946***	3.943***
	(8.48)	(8.46)	(4.49)	(4.41)	(7.49)	(7.30)
H15to50	5.110***	5.240***	3.924***	4.220***	6.422***	6.434***
	(10.29)	(10.36)	(5.30)	(5.25)	(9.43)	(9.36)
Age		-0.001		0.006		-0.007
		(-0.10)		(0.79)		(-0.63)
Male		-0.192		0.002		-0.415+
		(-1.31)		(0.01)		(-1.92)
HH IncomeBin		0.008		-0.014		0.036
		(0.20)		(-0.26)		(0.49)
Politics		-0.120*		-0.664***		0.08
		(-2.06)		(-2.91)		(0.42)
HH Effects		-0.024		-0.055		-0.003
		(-0.16)		(-0.26)		(-0.02)
COVIDMajor Local		-0.217*		-0.436***		0.051
		(-2.06)		(-3.03)		(0.40)
COVIDMajor Country		0.187		0.353**		0.007
		(1.60)		(2.37)		(0.04)
cut1	1.168***	1.194***	0.993+	0.427	1.266***	0.89
	(3.84)	(2.58)	(1.91)	(0.55)	(3.34)	(1.43)
cut2	3.351***	3.398***	2.987***	2.498***	3.783***	3.422***
	(9.44)	(6.90)	(5.09)	(3.04)	(8.31)	(5.06)
cut3	4.984***	5.064***	4.376***	3.981***	5.727***	5.383***
	(12.59)	(9.40)	(7.09)	(4.66)	(10.68)	(7.19)
chi2	249.061	276.184	89.257	99.408	215.886	235.39
p	0.00	0.00	0.00	0.00	0.00	0.00
N	762	762	327	327	435	435

Table 7 reports Ordered Logit coefficients on the four arms of Experiment 1. Within each arm, subjects made unfairness assessments for three different vignette variations (and thus total observations are equal to 3x total subjects). Because the arms of Experiment 1 had no common conditions, results presented are between-subject. In this specification there are four ordered categorical choices: (1) Completely Fair; (2) Acceptable; (3) Unfair; (4) Very Unfair. For purposes of comparison, these categories are identical to those presented in KK&T (1986). Merchant "No Change" condition is omitted. Significance Key (p-values): + 0.10; * 0.05; ** 0.02; *** 0.01.

Table 8: *Experiment 1—Legal Response (Ordered Logit; Between Subjects)*

	All Respondents		Conservatives		Non-Conservatives	
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
M3to4	1.504***	1.557***	1.286**	1.389***	1.611***	1.748***
	(4.68)	(4.74)	(2.57)	(2.63)	(3.92)	(4.07)
M3to10	3.310***	3.383***	3.216***	3.279***	3.355***	3.524***
	(7.56)	(7.54)	(4.10)	(3.99)	(6.33)	(6.35)
MNoChange15	0.226	0.18	0.706	0.539	-0.203	0.189
	(0.47)	(0.40)	(0.92)	(0.73)	(-0.32)	(0.29)
M15to20	1.778***	1.749***	2.246***	2.108***	1.407**	1.864***
	(4.21)	(4.27)	(3.28)	(2.83)	(2.57)	(3.31)
M15to50	3.672***	3.740***	3.342***	3.241***	4.071***	4.608***
	(8.66)	(8.57)	(5.03)	(4.31)	(6.85)	(7.43)
HNoChange	-0.525	-0.587	-0.034	-0.16	-1.205	-0.99
	(-1.02)	(-1.22)	(-0.04)	(-0.22)	(-1.47)	(-1.23)
H3to4	0.994*	0.945*	1.152	1.048	0.855	1.107*
	(2.31)	(2.25)	(1.61)	(1.44)	(1.57)	(2.04)
H3to10	2.463***	2.443***	2.790***	2.855***	2.194***	2.472***
	(5.70)	(5.74)	(3.86)	(3.82)	(4.07)	(4.61)
HNoChange15	0.494	0.341	0.838	0.534	0.063	0.097
	(1.16)	(0.84)	(1.25)	(0.81)	(0.10)	(0.18)
H15to20	1.546***	1.405***	1.672**	1.406*	1.438***	1.601***
	(3.85)	(3.72)	(2.52)	(2.18)	(2.77)	(3.13)
H15to50	2.727***	2.648***	2.642***	2.468***	2.817***	3.005***
	(7.34)	(7.38)	(4.15)	(3.96)	(6.10)	(6.49)
Age		-0.001		-0.008		-0.003
		(-0.23)		(-0.98)		(-0.21)
Male		0.352+		0.760*		0.027
		(1.81)		(2.31)		(0.10)
HH IncomeBin		-0.015		0.001		0.02
		(-0.28)		(0.02)		(0.25)
Politics		0.124+		0.426		0.3
		(1.83)		(1.30)		(1.40)
HH Effects		0.298+		0.099		0.267
		(1.65)		(0.35)		(1.09)
COVIDMajor Local		0.372***		0.398*		0.358**
		(3.13)		(2.02)		(2.35)
COVIDMajor Country		-0.266+		-0.035		-0.632***
		(-1.91)		(-0.17)		(-2.99)
cut1	1.574***	1.725***	1.544***	2.410***	1.592***	0.948
	(4.69)	(3.69)	(2.65)	(2.80)	(3.88)	(1.53)
cut2	2.612***	2.811***	2.678***	3.662***	2.567***	1.976***
	(7.49)	(6.02)	(4.42)	(4.20)	(6.01)	(3.23)
cut3	3.124***	3.323***	3.298***	4.291***	2.999***	2.418***
	(9.63)	(7.36)	(5.68)	(4.96)	(7.76)	(4.02)
cut 4	5.738***	5.927***	5.360***	6.339***	6.207***	5.664***
	(14.15)	(11.42)	(8.12)	(7.15)	(12.10)	(8.04)
chi2	230.892	293.196	94.944	160.629	147.894	161.696
p	0	0	0	0	0	0
N	762	762	327	327	435	435

Table 8 reports Ordered Logit coefficients on the four arms of Experiment 1. Because the arms of Experiment 1 had no common conditions, results presented are between-subject. Within each arm, subjects made unfairness assessments for three different vignette variations (and thus total observations are equal to 3x total subjects). There are five ordered categorical choices: (1) Nothing; (2) Take the Product and Pay; (3) Take the Product and Do Not Pay; (4) Take the Product, Do Not Pay, and Fine; (5) Take the Product, Do Not Pay, Fine, and Imprison. Merchant "No Change" condition is omitted. Significance Key (p-values): + 0.10; * 0.05; ** 0.02; *** 0.01.

b. *Experiment 2*

We now move on to our Experiment 2 regressions. Consider first a "between-participants" analysis similar to that conducted for Experiment 1 above, where we do not attempt to control for unobserved heterogeneity at the subject level. Table 9 presents between-subject ordered logit estimates for Unfairness (clustered at the respondent level). In this and all other tables, the omitted category is the No Change condition, so that all coefficient estimates for our manipulations should be interpreted relative to that baseline.

As with the previous results, the first two model specifications of Table 9 are run using the entire data set, differing only in the inclusion of demographic control variables (present in Model 2 but not Model 1). Models 3 and 4 are similar but are limited only to "conservative" participants (whose political ideologies are identified as either "Somewhat Conservative" or "Very Conservative"—representing just under 50% of the data). Models 5 and 6 do the same, but they are limited to "non-conservative" participants.

The regression coefficients reported in Table 9 reinforce much of the graphical/tabular analysis above. For example, while a $3 to $4 price increase does indeed elicit a statistically significant shift towards a negative response (relative to the "No Change" condition), a $3 to $10 increase is substantially more likely to do so. Moreover, the coefficient estimates are extremely close in magnitude for the coefficient estimates delivered by Experiment 1 (see Table 7 above), reinforcing this common set of experiments as a baseline. Conservative participants appear consistently to be less likely than non-conservatives to find an action unfair. Consistent with Figure I (and inconsistent with many states' price gouging laws) participants' responses to conditions involving necessities (hand sanitizer) and luxuries (Lay's potato chips) are statistically equivalent on unfairness grounds. Likewise, respondents' reactions on unfairness also diverge from many state regimes in that they do not hinge on whether a given price increase is due to a merchant's repricing decision or a resident who has hoarded products for sale on the market (consistent with Figure J). If anything, a negative reaction to a price increase is *stronger* when the seller is a non-merchant (particularly for moderate price increases).

Participants reacted quite differently to the two rationing devices that did not explicitly change sticker prices (rationing and auctions). Although participants found quantity restrictions to be more unfair than the No Change case, the effect is numerically small and borderline insignificant on conservative/non-conservative subsamples. It is safe to say that such measures were deemed far and away the fairest responses that we considered. Auctions, in contrast, were greeted with the opposite reaction, and were viewed as far and away the most unfair means for allocation of those analyzed. And the revulsion to auctions was manifest among conservative and non-conservative respondents alike.

Finally, and consistent with Figures G and H, accompanying a price increase with an apology/rationale dampened participants' assessments of unfairness. The effect was most pronounced when the apology and rationale were combined. The use of a rationale alone (with no apology) was nearly as effective at dampening sentiments of unfairness, while a naked apology (with no rationale) had a discernibly smaller effect.

The legal response regressions in Table 10 are broadly consistent too, but with a few caveats. On the whole, participants were more punitive towards larger price increases, and (like Table 8) those reporting significant local and household COVID-19 effects were the most retributive. But they were comparatively punitive towards price increases relating to the luxury item (Lay's potato chips) as to the necessity (hand sanitizer). And residents who price gouge are assessed slightly *more* punitively than merchants. Apologies combined with rationales go far to dampen the severity of respondents' preferred sanction. As before, offering a rationale alone appears to be slightly more effective than offering an apology alone.

Because Experiment 2 (unlike Experiment 1) contains several common questions that all participants answered regardless of arm, it also affords us the ability to control for unobserved forms of respondent heterogeneity using a "within-subject" analysis—effectively treating individuals as their own control group. The details are somewhat technical, however, and we thus relegate them to Appendix B, where we demonstrate the robustness of our results using several alternative approaches that appear to have gained traction in the literature. For present purposes, however, the principal takeaway from that analysis is that, even after implementing these more technically involved approaches, we obtain results that are extremely close (and indeed, virtually identical) to those in the between-subject analyses discussed here. The robustness of our results should not be too surprising, of course, since we randomized our treatment arms across a large number of participants, thereby minimizing the danger that unobservable heterogeneity drives our results (since the ideal way to address such heterogeneity concerns is, after all, a large randomized-control trial). Nevertheless, our confidence in the between-subject results is further bolstered by the highly consistent results of the within-subject controls. (Interested readers should consult Appendix B.)

Table 9*: Experiment 2 - Unfairness (Ordered Logit; Between Subjects)*

	All Respondents		Conservatives		Non-Conservatives	
	Model 1	**Model 2**	**Model 3**	**Model 4**	**Model 5**	**Model 6**
M3to4	3.256***	3.311***	2.856***	2.877***	3.747***	3.806***
	(17.76)	(17.82)	(11.46)	(11.46)	(13.40)	(13.21)
M3to10	5.631***	5.736***	4.899***	4.954***	6.472***	6.582***
	(21.10)	(21.33)	(13.58)	(13.58)	(16.44)	(16.15)
M3to4Lays	3.068***	3.110***	2.532***	2.612***	3.595***	3.642***
	(11.96)	(11.95)	(6.34)	(6.31)	(10.09)	(9.99)
M3to10Lays	5.754***	5.842***	4.666***	4.797***	6.758***	6.848***
	(15.87)	(15.95)	(7.99)	(8.16)	(13.99)	(13.66)
M3toQuant	0.739***	0.753***	0.830*	0.750*	0.657+	0.672+
	(2.86)	(2.73)	(2.26)	(2.02)	(1.78)	(1.69)
M3toAuct	5.835***	5.915***	5.019***	5.005***	6.790***	6.885***
	(14.51)	(14.88)	(8.64)	(8.54)	(11.81)	(12.02)
R3to4	3.646***	3.692***	3.060***	3.121***	4.311***	4.378***
	(13.45)	(13.88)	(8.15)	(8.23)	(11.25)	(11.37)
R3to10	5.585***	5.696***	4.566***	4.655***	6.689***	6.786***
	(15.69)	(16.16)	(9.28)	(9.44)	(13.08)	(13.30)
M3to4ApolRat	1.924***	1.914***	1.994***	2.057***	1.897***	1.824***
	(8.78)	(8.31)	(6.15)	(6.16)	(6.18)	(5.80)
M3to10ApolRat	3.610***	3.623***	3.265***	3.315***	4.046***	4.017***
	(14.08)	(13.79)	(8.67)	(9.09)	(10.85)	(10.58)
M3to4Apol	3.337***	3.502***	2.885***	2.995***	3.902***	4.122***
	(10.82)	(11.35)	(6.87)	(7.36)	(8.37)	(8.77)
M3to10Apol	4.833***	5.040***	4.129***	4.251***	5.733***	5.955***
	(13.94)	(14.79)	(9.31)	(9.76)	(10.85)	(11.19)
M3to4Rat	2.398***	2.438***	2.629***	2.633***	2.217***	2.254***
	(10.68)	(9.98)	(8.30)	(7.85)	(6.94)	(6.93)
M3to10Rat	4.265***	4.352***	4.177***	4.189***	4.498***	4.604***
	(14.87)	(14.12)	(11.11)	(10.59)	(10.01)	(9.63)
Age		-0.001		-0.006		0
		(-0.21)		(-0.54)		(0.05)
Male		-0.1		-0.229		-0.004
		(-0.81)		(-1.13)		(-0.03)
HHIncomeBin		-0.019		0.011		-0.04
		(-0.51)		(0.18)		(-0.82)
Politics		-0.172***				
		(-3.64)				
HHEffects		-0.092		-0.337		0.068
		(-0.75)		(-1.64)		(0.43)
COVIDMajor Local		0.005		-0.019		0.108
		(0.06)		(-0.18)		(0.96)
COVIDMajor Country		0.198+		0.14		0.374***
		(1.96)		(1.13)		(2.58)
cut1	1.630***	1.755***	1.684***	1.423**	1.583***	2.228***
	(11.84)	(4.64)	(8.24)	(2.48)	(8.46)	(4.75)
cut2	3.561***	3.724***	3.360***	3.119***	3.888***	4.567***
	(20.43)	(9.34)	(14.81)	(5.37)	(14.02)	(8.70)
cut3	5.301***	5.506***	5.010***	4.793***	5.783***	6.504***
	(24.35)	(13.12)	(17.50)	(7.91)	(17.27)	(11.74)
chi2	475.455	544.336	208.512	218.851	321.999	326.314
p	0	0	0	0	0	0
N	2010	2010	885	885	1125	1125

Table 9 reports Ordered Logit coefficients on the six arms of Experiment 2. Within each arm, subjects made unfairness assessments for 5 different vignette variations (and thus total observations are equal to 5x total subjects). Results presented are between-subject. (See Appendix B for within-subject specifications.) In this specification there are 4 ordered categorical choices: (1) Completely Fair; (2) Acceptable; (3) Unfair; (4) Very Unfair. For purposes of comparison, these categories are identical to those presented in KK&T (1986). Merchant "No Change" condition is omitted. Significance Key (p-values): + 0.10; * 0.05; ** 0.02; *** 0.01.

Table 10: *Experiment 2—Legal Response (Ordered Logit; Between Subjects)*

	All Respondents		Conservatives		Non-Conservatives	
	Model 1	**Model 2**	**Model 3**	**Model 4**	**Model 5**	**Model 6**
M3to4	1.222***	1.273***	1.059***	1.151***	1.448***	1.460***
	(9.80)	(10.08)	(6.69)	(7.06)	(7.13)	(7.12)
M3to10	3.133***	3.224***	2.620***	2.751***	3.684***	3.751***
	(18.61)	(18.87)	(11.86)	(12.02)	(14.05)	(14.21)
M3to4Lays	0.960***	1.038***	0.703*	0.761*	1.270***	1.454***
	(3.48)	(3.71)	(1.98)	(2.05)	(3.03)	(3.40)
M3to10Lays	2.916***	3.038***	2.120***	2.195***	3.637***	3.860***
	(11.15)	(11.00)	(5.28)	(5.37)	(10.00)	(10.18)
M3toQuant	0.214	0.178	0.031	-0.014	0.391	0.355
	(0.80)	(0.68)	(0.09)	(-0.04)	(0.94)	(0.87)
M3toAuct	3.329***	3.381***	2.726***	2.743***	3.950***	3.994***
	(11.33)	(11.12)	(5.79)	(5.86)	(10.37)	(9.88)
R3to4	1.881***	1.873***	1.350***	1.347***	2.417***	2.383***
	(8.13)	(7.92)	(4.12)	(3.70)	(7.10)	(7.18)
R3to10	3.211***	3.258***	2.595***	2.640***	3.835***	3.845***
	(13.22)	(13.44)	(6.86)	(7.18)	(11.86)	(11.87)
M3to4ApolRat	0.429	0.394	0.551	0.499	0.369	0.329
	(1.64)	(1.54)	(1.52)	(1.44)	(0.92)	(0.81)
M3to10ApolRat	1.651***	1.614***	1.391***	1.360***	1.973***	1.935***
	(7.28)	(7.17)	(4.30)	(4.35)	(5.95)	(5.82)
M3to4Apol	1.562***	1.632***	0.527	0.669+	2.609***	2.534***
	(6.08)	(6.07)	(1.54)	(1.77)	(6.72)	(6.44)
M3to10Apol	2.926***	3.061***	1.948***	2.157***	3.914***	3.923***
	(11.62)	(11.66)	(5.72)	(5.91)	(10.51)	(10.38)
M3to4Rat	0.261	0.342	0.384	0.544	0.11	0.178
	(0.83)	(1.11)	(0.91)	(1.30)	(0.23)	(0.36)
M3to10Rat	2.154***	2.315***	2.256***	2.515***	2.117***	2.210***
	(7.87)	(8.28)	(6.10)	(6.70)	(5.39)	(5.43)
Age		-0.005		0.002		-0.013
		(-1.02)		(0.31)		(-1.57)
Male		0.055		0.071		0.03
		(0.40)		(0.35)		(0.16)
HH IncomeBin		-0.013		0.008		-0.041
		(-0.29)		(0.14)		(-0.61)
Politics		0.143***				
		(2.99)				
HHEffects		0.322**		0.277		0.396*
		(2.34)		(1.37)		(2.04)
COVIDMajor Local		0.275***		0.286**		0.281*
		(3.19)		(2.43)		(2.21)
COVIDMajor Country		0.055		0.143		-0.303+
		(0.50)		(0.96)		(-1.79)
cut1	1.571***	1.847***	1.186***	1.866***	1.969***	1.393**
	(11.56)	(4.99)	(6.51)	(3.72)	(9.38)	(2.54)
cut2	2.523***	2.829***	2.084***	2.816***	3.015***	2.460***
	(17.16)	(7.56)	(11.06)	(5.45)	(12.95)	(4.50)
cut3	2.973***	3.288***	2.572***	3.329***	3.443***	2.892***
	(21.45)	(8.91)	(15.08)	(6.47)	(15.16)	(5.39)
cut4	5.332***	5.688***	4.782***	5.604***	5.947***	5.425***
	(24.85)	(13.75)	(16.93)	(9.57)	(18.26)	(9.28)
chi2	415.237	475.285	176.893	219.913	292.443	311.084
p	0	0	0	0	0	0
N	2010	2010	885	885	1125	1125

Table 10 reports Ordered Logit coefficients on the six arms of Experiment 2. Within each arm, subjects made unfairness assessments for five different vignette variations (and thus total observations are equal to 5x total subjects). Results presented are between-subject. (See Appendix B for within-subject specifications.) There are five ordered categorical choices: (1) Nothing; (2) Take the Product and Pay; (3) Take the Product and Do Not Pay; (4) Take the Product, Do Not Pay, and Fine; (5) Take the Product, Do Not Pay, Fine, and Imprison. Merchant "No Change" condition is omitted. Significance Key (p-values): + 0.10; * 0.05; ** 0.02; *** 0.01.

4. *The Role of Order Effects*

Because the divergence between our results and the existing literature is surprisingly stark, we close this section by exploring one plausible culprit for this divergence: "question order effects," whereby people may respond to a series of vignettes differently depending on the sequence in which each vignette is presented to them. Recall that in all of our experiments, participants were confronted with three different price change conditions, ranging from none to moderate to extreme. In KK&T's pioneering study, in contrast, only the moderate price change condition appeared. Might ordering have played a role in inducing our participants to behave so differently?

It is a fair question. Researchers have documented question order effects in a wide range of survey experiment contexts.[221] Some scholars have hypothesized that question order is most likely to affect responses among individuals whose attitudes are weak or uncertain.[222] Intuitively, this hypothesis seems quite plausible: a die-hard coffee ice cream fan will presumably say she prefers coffee ice cream every time, though question order may affect her relative rankings of, say, cookie dough and rocky road. The social science literature is not unified on this score, however: early empirical analyses revealed a muddled relationship between attitude strength and susceptibility to question order effects,[223] though recent research suggests that order effects can exist and tend to be strongest when individuals are uncertain of their views.[224]

To explore this question, we return to Experiment 1, where all participants were asked to assess price increases of 33% and 333%, as well the no-change

[221] For a literature review and illustration, see generally Peter Siminski, *Order Effects in Batteries of Questions*, 42 QUALITY & QUANTITY 477 (2008).

[222] *See* Howard Lavine, Joseph W. Huff, Stephen H. Wagner & Donna Sweeney, *The Moderating Influence of Attitude Strength on the Susceptibility to Context Effects in Attitude Surveys*, 75 J. PERSONALITY & SOC. PSYCH. 359, 361 (1998).

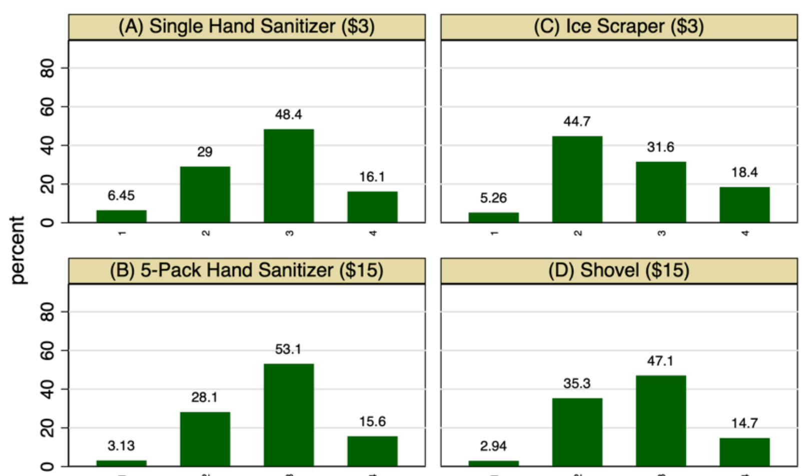
[223] *See* George F. Bishop, *Issue Involvement and Response Effects in Public Opinion Surveys*, 54 PUB. OP. Q. 209, 216 (1990) (finding no relationship between order effects and issue involvement); Jon A. Krosnick & Howard Schuman, *Attitude Intensity, Importance, and Certainty and Susceptibility to Response Effects*, 54 J. PERSONALITY & SOC. PSYCH. 940, 949 (1988) (finding no relationship between order effects and measurements of attitude intensity, importance, and certainty).

[224] *See* Katrin Auspurg & Annette Jäckle, *First Equals Most Important? Order Effects in Vignette-Based Measurement*, 46 SOCIO. METHODS & RSCH. 490, 520 (2017).

condition. By design, the order in which participants encountered the differing price-change conditions varied randomly. It is possible, though, that the order of the price change vignettes could push respondents in one of two directions. One possibility is that question order could generate a "priming" effect: participants asked to assess the higher (333%) increase might become primed to think of the hypothetical seller as engaged in unfair pricing practices, and that all price increases are bad, thereby causing them to evaluate the (subsequent) 33% price increase scenario more negatively. An alternative possibility is that question order could generate a "benchmark" effect: those participants asked to assess the 333% price increase first might come to think of 333% as a comparator against which the more moderate 33% price increase would look quite reasonable. Under this hypothesis, presenting participants with the extreme price increase first might effectively dampen their subsequent disapprobation of a more moderate one.[225]

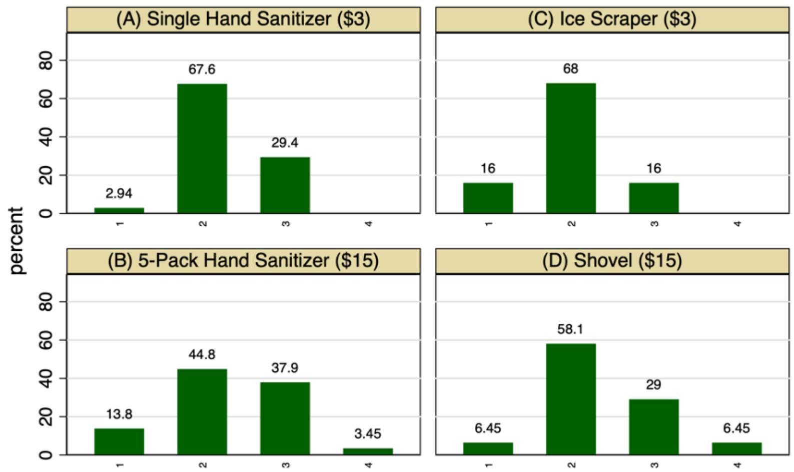
We explored this question by disaggregating our subject pool in Experiment 1 by the (randomized) sequence in which they encountered price change conditions. Figure K reproduces Panel (ii) from Figure B (corresponding to the moderate 33% price increase), but it separates respondents into two groups: (1) those who saw the 33% price increase vignette before the 333% increase vignette (HiB4Lo = 0) and (2) those who saw the 33% price increase vignette after the 333% vignette (HiB4Lo = 1).

Figure K: *Unfairness Assessment (by Percentage Increase and Order Effects)*
Unfairness (33% Change Condition; By Arm; HiB4Lo=0): Panel (i)
(1) Completely Fair, (2) Acceptable, (3) Unfair, (4) Very Unfair
Graphs by Arm Label



225 Of course, the benchmark would work in the opposite direction for participants who were first presented with the 33% increase. If they rated a 33% increase as "unfair," they might, for consistency's sake, feel obliged to rate a 333% increase as "very unfair."

Unfairness (33% Change Condition; By Arm; HiB4Lo=1): Panel (ii)
(1) Completely Fair, (2) Acceptable, (3) Unfair, (4) Very Unfair
Graphs by Arm Label



The results suggest that order effects interact meaningfully with our results, in a manner consistent with the "benchmark" hypothesis posited above. Depending on the product, between 50% and 67% of respondents rated the 33% price increase to be unfair when it was the first price-change scenario they encountered. By contrast, between 16% to 41% of respondents rated the same price increase to be unfair when they saw that scenario after they were first asked about a 333% price hike.[226] The benchmark effect remains directionally consistent across questions in Experiment 1 not pictured in Figure K. For example, while participants generally judge the 333% price increase as "unfair" or "very unfair," they are more likely to say that a price increase of that magnitude is "very unfair" if they already have encountered the 33% price increase.[227] This suggests that the 33% price increase is also serving as a mild benchmark against which respondents evaluate (and condemn) the larger 333% price increase. Judgments regarding the appropriate legal response track assessments of fairness. In the 33% price increase scenario, respondents are far less likely to favor a highly punitive response if they already have encountered the 333% scenario.[228] And in the 333% price increase scenario, respondents are mildly more likely to favor a punitive response if they already have encountered the more moderate price increase.[229]

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[226] The difference is statistically significant ($p = 0.000$, Kolmogorov-Smirnov test).

[227] That said, the overall distributional distributions are only mildly different in the 333% case as one varies order of presentation ($p = 0.241$, Kolmogorov-Smirnov test).

[228] $p = 0.000$ (Kolmogorov-Smirnov test).

[229] $p = 0.788$ (Kolmogorov-Smirnov test).

At the same time, order effects appear to account for only a part—but not the entirety—of the evident gap between our results and KK&T's. Even when presented first with an exact replica of the KK&T snow shovel scenario as the initial price change vignette, only 62% of our respondents judged the $15-to-$20 price increase to be unfair, as compared with the 82% for KK&T—a difference that remains economically and statistically significant.[230]

Finally, note that the very existence of order effects also may bear on policy questions that are moored to fairness perceptions. If participants' fairness perceptions can be manipulated by factors as trivial as question order, their views may not reflect deep and inveterate preferences about what sorts of price increases are (and are not) acceptable, but instead may ebb and flow in a manner that depends substantially on context. If fairness perceptions are so elastic that they can be shaped substantially by contextual presentation, then they are a dubious Archimedean point from which to guide our legal policy ship. It is to these normative questions that we now turn.

V. IMPLICATIONS

Our results cast new light on the justifications for price gouging laws, the design and interpretation of price gouging statutes, and the social and behavioral sciences literature on consumer fairness. They also offer a fresh perspective on the ongoing debate about whether recent price hikes may be (at least in part) a product of corporate profiteering. We briefly address each in turn.

A. *Justifications for Price Gouging Laws*

As detailed in Part I, existing empirical work on consumer fairness perceptions has generated a folk wisdom that societal aversion to price increases can manifest relatively easily (e.g., with a price hike on the order of 33% during a shortage).[231] This conventional wisdom, in turn, has buttressed and reaffirmed a variety of substantive choices about what magnitude of increase violates shared social norms, offends community standards, and triggers negative aesthetic externalities—each of which invites regulatory intervention.

Our findings complicate this conventional wisdom, and in so doing they confound certain normative and prescriptive premises underlying price gouging laws. A majority of our participants—drawn from a large and nationally representative pool during an acute moment of scarcity—did *not* perceive markups on the order of 33% to be unfair.[232] And, an even larger majority assessed the appropriate legal response to such price increases to be

[230] $t = 10.32$; $p = 0.000$.

[231] *See generally*, *e.g.*, Campbell, *supra* note 126; Frey & Pommerehne, *supra* note 138; Kahneman, Knetsch & Thaler, *supra* note 9.

[232] *See supra* Figure E and accompanying discussion.

"nothing."[233] In some respects, our participants' judgments were sensitive to changes in context, but in others they were strikingly stable. On one hand, the first price increase vignette encountered by a respondent appears to have established a benchmark against which she judged subsequent scenarios, suggesting that perceptions about price fairness are not set in stone, but are dependent upon contextual factors. On the other hand, participants treated other contextual differences—such as merchant vs. non-merchant and necessity vs. luxury good—remarkably consistently.

The tolerance that our participants showed for significant price increases does not suggest that defenders of price gouging laws are without ammunition to defend their positions. Not all normative or prescriptive rationales against price gouging, after all, directly engage norms of fairness.[234] And, even some aspects of our results lend heft to certain price gouging prohibitions. For example, our results do indicate that there is a strong and stable norm against extreme price increases (on the order of 333%), a result that is robust to different vignette details and largely transcends ideological lines. In addition, our results suggest that fairness norms may represent a weaker extra-legal constraint on price markups than heretofore commonly thought. Consequently, if one believed on independent grounds that crisis-induced price markups remain undesirable, our results potentially strengthen the argument that law "matters" (in the sense that legal mandates may be necessary for deterrence).[235] For all the benefits that social condemnation may have as a substitute for legal enforcement, our results suggest that its usefulness may be limited in this context.

At the end of the day, our findings do not definitively resolve the price gouging debate so much as they inform and focus it. And this is unsurprising: only rarely does empirical evidence unambiguously resolve important policy debates unambiguously—especially those that implicate multiple, incommensurate value systems and worldviews (as does this one). That said, our results do lend important, evidence-based insights about whether and how price markups elicit social disapproval, and in this sense, they inform the broader discussion about whether and how law might intervene.

B. *Design and Interpretation of Price Gouging Laws*

Irrespective of one's normative take on price gouging laws, the reality is that such bans are long-standing statutory authority in the majority of U.S. states.[236] If we take some form of price gouging regulation as a given, how

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[233] *See supra* Figure E and accompanying discussion.

[234] For example, consumers' bounded rationality or lack of information may raise policy concerns about price gouging *particularly* in the absence of social disapprobation. *See supra* notes 62–67 and accompanying text.

[235] *See supra* notes 62–67 and accompanying text.

[236] *See infra* Appendix A and accompanying notes.

should those laws be crafted and understood? Our findings shed light on those questions as well.

1. *Liability Triggers*

As noted above, one of the decisions integral to the design of a price gouging statute is whether to embrace a quantitative-threshold rule or a squishy standard as the trigger for price gouging liability.[237] Our results have implications for states that reach both decisions.

For the quantitative-threshold states, our findings suggest that the triggers most of these states set—typically a 10 to 25% increase over the clear-day price[238]—are significantly lower than the level that generates consistent condemnation from survey participants. Indeed, over 50% of our respondents considered a 33% increase over the pre-emergency price to be "completely fair" or "acceptable."[239] Under those circumstances, moreover, most respondents favored either no punishment or very light punishment (taking the item and paying the seller the pre-increase price).[240]

The evident misalignment between popular perceptions and legal prohibitions raises at least three problems for enforcement of price gouging laws in states with strict quantitative cutoffs.[241] First, our findings indicate that policymakers may not be able to rely on extra-legal sanctions to reinforce statutory proscriptions. Second, while we did not test specifically for knowledge of the law, our results point to the possibility that modest price increases in an emergency may not be understood as illegal by many of the people to whom those laws apply. This realization is relevant to the level of notice that authorities will need to provide if they want to enforce the law as written. Most of us understand petty larceny to be a crime whether or not we know anything about our jurisdiction's larceny laws. But if a state wants sellers to know that price increases on the order of 33% in an emergency are prohibited by law—and if it wants consumers to report such price increases to law enforcement—the state likely will need to take steps to spread that message. Finally, the mismatch between the law and norms raises challenges for prosecution: if the prescribed thresholds do not conform to jurors' (or judges') perceptions of inappropriate

[237] *See infra* Appendix A and accompanying notes.

[238] *See infra* Appendix A and accompanying notes.

[239] *See supra* Part IV.B.1.

[240] *See supra* Part IV.B.1.

[241] Our results arguably affirm the decisions of the quantitative-threshold regimes to frame their laws in relative rather than absolute terms (i.e., a 10% or 25% markup rather than a $10 or $25 increase). Our subjects in Experiment 1 reacted quite consistently to equivalent percentage increases, regardless of whether the starting price was low ($3) or high ($15). And moreover, this response appeared to persist across products. *See supra* Part IV.B.1.

behavior, enforcers may even face the prospect of courtroom nullification, even after a technical violation of the rule.[242]

For jurisdictions that embrace a standard-like threshold for their price gouging prohibitions (such as a "gross disparity" in price between the pre-emergency and emergency period),[243] our findings suggest a separate set of challenges. Not only is price gouging "in the eye of the beholder,"[244] but it turns out that different eyes hold very different views about what level of price hike should elicit normative objections, and those views are themselves highly influenced by price increases that individuals already have encountered. Enforcement is likely to be complicated by the fact that members of the public disagree rather dramatically about what sort of behavior ought to be proscribed. Even before the specter of courtroom nullification enters the picture, states with standard-like thresholds may encounter significant difficulty in delineating the content of their statutes amid widespread dissensus regarding the relevant behavioral norm.

2. *Statutory Reach*

As explained in Part II.B, jurisdictions differ in whether their price gouging laws apply only to necessities or to all goods, and only to merchants or to all sellers.[245] In our reported results, participants tended *not* to make distinctions based on the nature of the good or the identity of the gouger. To the extent that participants drew any such distinction, it was with regard to the nature of the seller—and it was in a direction opposite of what might be predicted based on state statutes: Non-merchants who hoard and gouge elicited somewhat more intense disapprobation than merchants or businesses.[246]

The import of our results depends, again, on the normative theory that one brings to these questions. Policymakers may have reasons for treating necessary goods or merchants differently even if the general public does not. At the very least, though, our results indicate that those states with "broad" price gouging laws that span many categories of goods do so in a manner that is consistent with our respondents' view that the wrongfulness of price gouging does not depend on "necessity" status of the item in question. Similarly, those states that apply price gouging laws to all sellers do so in a manner that is consistent with generally shared views regarding the normative relevance (or more precisely, irrelevance) of the merchant/non-merchant distinction. And while our results

[242] *See* THOMAS ANDREW GREEN, VERDICT ACCORDING TO CONSCIENCE: PERSPECTIVES ON THE ENGLISH CRIMINAL TRIAL JURY, 1200–1800, at 27–35 (1985) (describing the practice of English juries finding, contrary to the evidence, that the defendant had not broken a law that would have imposed a death sentence).

[243] *See infra* Appendix A and accompanying notes.

[244] *See* von Hoffman, *supra* note 36.

[245] *See infra* Appendix A and accompanying notes.

[246] *See supra* Part IV.B.2.e.

cannot, on their own, justify reforms in jurisdictions with laws having a narrower scope, they nevertheless suggest that such jurisdictions are drawing a legal line where their citizens evidently would not draw a social one.

3. *Remedies*

Price gouging laws are all over the map when it comes to the remedy or sanction for gouging, with large variations in the availability and size of civil and criminal penalties.[247] In general, our participants' responses reflect this variability. As we have noted, price increases that would trigger prima facie liability under many statutes are not even deemed wrongful by a majority of our participants, and, accordingly, they are not considered deserving of punishment. In addition, our respondents rarely advocated jail time, even for extreme gouging.[248] This last point appears consistent with the actual legal response to the behaviors described in our vignettes.[249]

That said, when our participants deemed conduct to be unfair, they were still disposed, nonetheless, to be somewhat punitive. For conditions with extreme price increases (333%), the modal subject response advocated a civil fine of $2,500. (And, as we observed in Part III, the attraction of stiff fines appeared to be particularly pronounced among non-conservative subjects.[250]) Overall, our participants seem to have higher thresholds for unfairness than many laws do, but once those thresholds are triggered, they appear willing to come down hard on violators.

C. *Implications for Social and Behavioral Sciences*

Our results also bear on the still-evolving understanding of fairness norms in the social and behavioral sciences. KK&T's landmark study highlighted the power of empirical research to uncover fairness perceptions and shed light on their determinants.[251] KK&T's key findings, moreover, appear to have been generalizable across countries and continents at the time.[252] But times—and norms—change. Setting aside the pandemic, a series of twenty-first century events—such as the advent of online auction houses like eBay and the introduction of "surge" pricing for airline fares and shared rides—may well have acclimated consumers to the idea that prices can and often will move dynamically in response to demand shocks, thereby dampening social sensitivities to such fluctuations. The onset of the COVID-19 crisis—the chief

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[247] *See infra* Appendix A and accompanying notes.

[248] *See supra* Part IV.B.1.

[249] We are not aware of any active prosecutions for price gouging during COVID-19, but we suspect that imprisonment would only result from more systematic or egregious behavior than a simple price markup by an individual merchant.

[250] *See supra* Tables 8, 10.

[251] *See generally* Kahneman, Knetsch & Thaler, *supra* note 9.

[252] *See* Frey & Pommerehene, *supra* note 138, at 296.

motivator of this study—may have had an effect as well. Most Americans likely had not experienced widespread and persistent shortages of common household goods before March 2020. In the immediate aftermath of that experience, consumers may have become less satisfied with first-come-first-served as an allocation mechanism and more receptive to the use of price.

The relative receptivity of respondents to price increases in our study raises doubts that fairness intuitions continue to exert a durable, first-order constraint on price adjustments. But these doubts, in turn, raise another question: If most consumers do not react especially negatively to moderate price increases, why didn't more stores increase prices of products in high demand during the late spring of 2020?[253]

We suggest four potential explanations. First, we should note that a substantial minority of respondents *still did* consider price increases in the 33% range to be unfair (and a majority considered price increases of that magnitude to be unfair when it was the first price change vignette they encountered[254]). It is possible the size of this group was sufficiently large to cause retailers to cater their price-setting behavior accordingly. A second possibility is that the "menu costs" associated with price changes remain prohibitive. Busy retailers may have lacked the time or inclination to change sticker prices rapidly. Yet dynamic pricing has become commonplace not only online, but also in brick and mortar stores,[255] and even before the dynamic pricing revolution, prices were never set in stone. Frictions like menu costs may account for some of this behavior, but we are unconvinced such factors explain all (or even most) of it.

A third possibility is that retailers are not aware of changes in consumer fairness perceptions over time. This, too, is difficult to rule out, though given the vast amount of energy and money that retailers devote to market research,[256] it would be mildly surprising if three law professors, with the help of their superb research assistants, stumbled across a phenomenon that the firms themselves have not uncovered. If this really is the case, then the primary

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[253] *See, e.g.*, Dan Burns, *How COVID-19 Affected U.S. Consumer Prices in March*, REUTERS (Apr. 10, 2020), https://www.reuters.com/article/us-health-coronavirus-usa-prices/how-covid-19-affected-u-s-consumer-prices-in-march-idUSKCN21S20H [https://perma.cc/9VBW-75BC] (documenting that most prices were stagnant or falling in March 2020). That said, individual acts of gouging were well recognized. *See, e.g.*, Kate Gibson, *A $220 Bottle of Lysol? Coronavirus Leads to Price-Gouging on Amazon*, CBS NEWS (Mar. 12, 2020), https://www.cbsnews.com/news/coronavirus-amazon-lysol-price-gouging/ [https://perma.cc/Q9SN-3ZS5].

[254] *See supra* Part IV.B.4.

[255] *See, e.g.*, Sheng Li & Claire Chunying Xie, *Automated Pricing Algorithms and Collusion: A Brave New World or Old Wine in New Bottles?*, ANTITR. SOURCE, Dec. 2018, at 1; Lauren Henry Scholz, *Algorithmic Contracts*, 20 STAN. TECH. L. REV. 128, 143 (2017); Salil K. Mehra, *Antitrust and the Robo-Seller: Competition in the Time of Algorithms*, 100 MINN. L. REV. 1323, 1327 (2016).

[256] Christine Moorman & T. Austin Finch, *Marketing Budgets Vary by Industry*, WALL ST. J. (Jan. 24, 2017), https://deloitte.wsj.com/cmo/2017/01/24/who-has-the-biggest-marketing-budgets/ [https://perma.cc/U4LD-K9ML].

relevance of our findings may be for the marketing literature rather than the legal literature. We leave that for others to judge.

Finally, and we think most plausibly, it could be that legal constraints (rather than fairness intuitions) conspire to prevent retailers from adopting dynamic pricing practices during emergencies. This possibility underscores our study's practical significance. If state laws—and not consumer fairness perceptions—are what prevents the market from clearing in a shortage, then it becomes all the more important to understand and evaluate the performance of those laws in light of the evident mismatch between their prescriptions and manifest social sentiments about price changes.

D. *Implications for the Political Economy of Inflation*

Finally, our experimental results may provide a fresh perspective on the ongoing political debate over the root causes of and responses to current inflationary trends in the economy. Although most agree that supply chain disruptions have contributed to ongoing price hikes, several progressive commentators have—as noted in the introduction—posited that there is more to it than that.[257] Greedy corporations with outsized corporate power, they assert, have capitalized on supply chain glitches to escalate prices far beyond what would be justified if they were merely passing on marginal and average cost shocks.[258] Several commentators (from both the left and the right) have been quick to criticize this theory, noting that the inflation spike is quite recent, while perceptions of corporate cupidity and market power are virtually ageless.[259] Therefore, they conclude, the "corporate greed" argument seems an unlikely suspect for our present inflationary woes unless something else also changed to make profiteering more remunerative.[260]

Although our experimental findings cannot resolve this debate, they nonetheless suggest that fairness norms had grown weaker and more diluted by the early days of the pandemic. We cannot discern whether this attenuation occurred rapidly or was the product of gradual erosion. But either way, our results suggest that a well-accepted deterrent to price gouging has surrendered some of its deterrence mojo, rendering it less capable of counteracting opportunistic price escalation. Such a change, when coupled with ever-present profit maximization objectives for corporate actors, could conceivably exacerbate inflationary pressures triggered by supply chain disruptions. While we are inclined to stop short of suggesting that these results "vindicate" progressives' theories, it is also fair to say that our findings indicate that normative constraints on price increases are likely to bind only loosely. More

[257] *See supra* notes 3–8 and accompanying text.
[258] *See supra* notes 3–8 and accompanying text.
[259] *See supra* note 7 and accompanying text.
[260] *See supra* note 7 and accompanying text.

speculatively, because "order effects" also appear to play a role in dampening fairness norms,[261] it is at least possible that the norm erosion is compounding over time, as consumers become increasingly desensitized to ongoing price hikes—and thus less troubled by future ones. To be sure, these results are not nearly robust enough to prove the case for imposing temporary price controls and gouging proscriptions until stronger and more stable fairness norms can reestablish themselves.[262] Engaging such questions may require future research designs that are better tailored to exploring more granular hypotheses.

VI. CONCLUSION

In this Article, we reported on results from a series of experiments related to price gouging and conducted during the first significant wave of the coronavirus pandemic. Our key findings both extend the academic literature around gouging and inform the design and potential reform of price gouging laws. Surprisingly, our participants were far more tolerant of relative price increases in ranges that existing literature predicts would meet stiff resistance, and that most price gouging statutes proscribe. Their attitudes, moreover, were relatively invariant to whether the good had a low or high pre-gouging price, whether the gouger was a merchant or an entrepreneurial resident, or whether the good was a COVID-19-related necessity or a non-necessity. By contrast, responses did vary substantially depending on the sequence of price changes presented: respondents who first encountered large price increases were more likely to deem moderate price increases to be fair, while respondents who had yet to see the large price were much more likely to condemn the moderate one. Finally, our results suggest that popular disapprobation of price gouging can be significantly dampened if the price increase is accompanied by a public-minded rationale (and even more so with an apology). Overall, these results highlight the contingent nature of fairness norms and the concomitant value of using replication and extension studies to understand the contours and triggers of such norms. Moreover, to the extent that market regulation and law depend on (or are constrained by) societal views about fairness, our results further underscore how important it is for legal designers to understand these nuances and to resist the temptation to overgeneralize context-specific insights when making trans-contextual policy. To do anything else would be both unwise and (for want of a better term) unfair.

[261] *See supra* Part IV.B.4.

[262] *See supra* Part IV.B.4. For a recent example of proposed price control measures, see Isabella Weber, *Could Strategic Price Controls Help Fight Inflation?*, GUARDIAN (Dec. 29, 2021), https://www.theguardian.com/business/commentisfree/2021/dec/29/inflation-price-controls-time-we-use-it [https://perma.cc/MGB3-2VVU].

APPENDIX A

A Survey of State Price Gouging Laws

As of early 2023, 36 states and the District of Columbia have explicit laws against price gouging in place, as pictured in the figure below.[263] Delaware's law applies only to COVID-19 and a 60-day recovery period afterwards.[264] Of those with no laws specific to charging higher prices: (1) Alaska and Nevada allow consumers to file complaints against businesses suspected of price gouging to the Attorney General's Office, who may pursue charges;[265] (2) Maryland and Minnesota each have Executive Orders currently in effect for the length of each of their coronavirus emergency declarations that declare price gouging illegal;[266] (3) Montana, Nebraska, New Hampshire, and New Mexico (the last of which promulgated a consumer advisory warning that price gouging during its COVID-19 emergency declaration would be enforced) have general consumer protection laws, which may penalize price gouging if it is found to be an unfair, unconscionable, or deceptive trade practice under the circumstances;[267] and (5) Arizona, North Dakota, South Dakota, Washington, and Wyoming currently have no broad protection against price gouging whatsoever.[268]

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263 *See infra* Table A.1 and accompanying discussion.

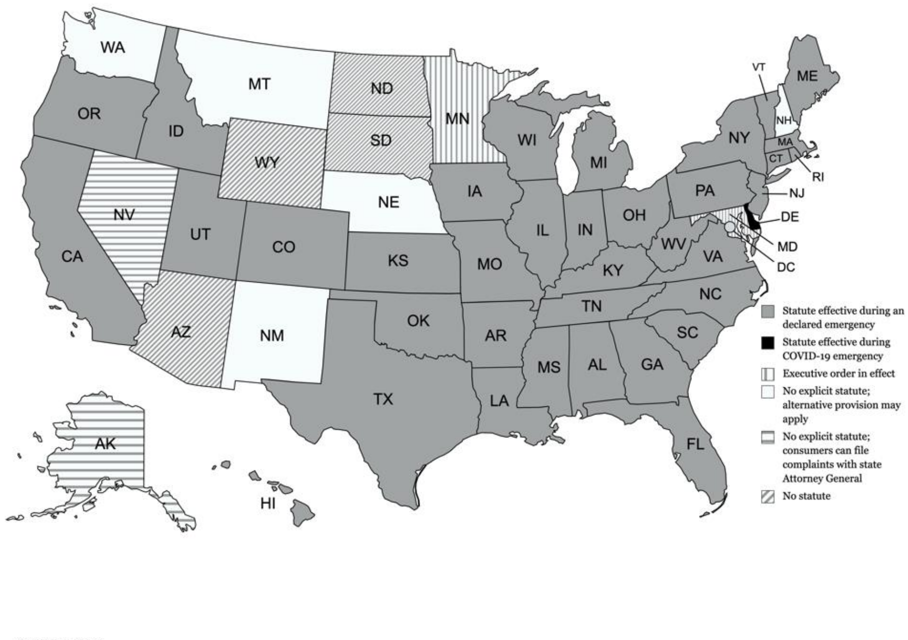
264 DEL. CODE ANN. tit. 6, § 2528 (2023).

265 *File a Consumer Complaint*, ALASKA DEP'T OF L. CONSUMER PROT. UNIT, https://law.alaska.gov/department/civil/consumer/cp_complaint.html [https://perma.cc/729J-URAZ]; *Complaints*, NEV. ATT'Y GEN., https://ag.nv.gov/Complaints/File_Complaint/ [https://perma.cc/H4GV-LPE3].

266 Md. Exec. Order No. 20-03-23-03 (Mar. 23, 2020); Minn. Exec. Order No. 20-10 (Mar. 20, 2020).

267 MONT. CODE ANN. §§ 30-14-103, 30-14-205 (2021); NEB. REV. STAT. § 87-303.01 (2022); N.H. REV. STAT. ANN. § 358-A:2 (2023); N.M. STAT. ANN. § 57-12-3 (2023); Press Release, Raúl Torrez *supra* note 84.

268 *See infra* Table A.1 and accompanying discussion.



The legal prohibitions on price gouging vary in several respects, including the factual setting to which they apply, the level of increase that triggers liability, the scope of goods covered, the actors to which the laws apply, and the sanction or remedy that follows liability. We summarize them briefly in turn.

Factual Setting Triggering Price Gouging Law

- In most states, the price gouging law is triggered by an emergency declaration by the state Governor or United States President.[269]

[269] *See, e.g.*, ALA. CODE § 8-31-1 (2023); CAL. PENAL CODE § 396 (West 2023); ARK. CODE ANN. § 4-88-302 (2023); CONN. GEN. STAT. § 42-230 (2023); D.C. CODE § 28-4101 (2023); FLA. STAT. § 501.160 (2022); GA. CODE ANN. § 10-1-393.4 (2022); HAW. REV. STAT. § 127A-30 (2023); IDAHO CODE § 48-603 (2022); IND. CODE § 4-6-9.1-1 (2022); IOWA ADMIN. CODE r. 61-31.1(714) (2023); KAN. STAT. ANN. § 50-6,106(2) (2022); KY. REV. STAT. ANN. § 367.374(1)(a) (West 2023); LA. STAT. ANN. § 29:732 (2022); 2020 Md. Laws 92; N.C. GEN. STAT. § 75-38(d) (2023); 940 MASS. CODE REGS. 3.18 (2023); MISS. CODE ANN. § 75-24-25 (2023); N.J. STAT. ANN. § 56:8-107 (West 2023); OKLA. STAT. tit. 15, § 777.4 (2022); 73 PA. CONS. STAT. § 232.4(d) (2022); 6 R.I. GEN. LAWS § 6-13-21 (2023); S.C. CODE ANN. § 39-5-145 (2022); UTAH CODE ANN. § 13-41-201 (West 2023); VA. CODE ANN. § 59.1-526 (2022); W. VA. CODE § 46A-6J-1 (2022).

- Two states (Arkansas and Kentucky) specifically denote a code red from the Department of Homeland Security as a triggering event for the statute, indicating terrorism as a triggering concern for price gouging.[270]
- In several states, an "abnormal market disruption" is an alternative trigger, notwithstanding a lack of clear definition of the meaning of "abnormal market disruption";[271] that said, there is a wide consensus that a state of emergency also constitutes an abnormal market disruption.[272]
- Delaware's new price gouging law pertains only to the COVID-19 pandemic and the state of emergency declared on March 12, 2020, and it expires on the sixty-first day following the termination of the state of emergency, unless modified.[273]

Level of Price Increase that Triggers Liability

- For states whose liability trigger is tied to a quantitative percent increase, most states are set to either 10% or 15% over pre-shortage levels, except for Alabama (whose trigger is 25%).[274]
- For some states without sharp quantitative liability triggers, a percent increase of, say, 20% (Pennsylvania)[275] or 25% (Kansas)[276] would still constitute prima facie evidence of an unconscionably excessive price in violation of the price gouging statute, but this appears to be a rebuttable presumption.[277]
- Relatedly, about half of state statutes contain an affirmative defense allowing the alleged violator to show that the price increases beyond its control (e.g., attributed to additional costs of doing business).[278]

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[270] ARK. CODE ANN. § 4-88-302 (2023); KY. REV. STAT. ANN. § 367.374 (West 2023).

[271] *See, e.g.*, N.Y. GEN. BUS. LAW § 396-r (McKinney 2023); ILL. ADMIN. CODE tit. 14, §§ 465.30, 465.20 (2023); ME. STAT. tit. 10, § 1105 (2022); N.C. GEN. STAT. § 75-38 (2023); WIS. STAT. § 100.305(2) (2023).

[272] *See* sources cited *supra* note 269.

[273] DEL. CODE ANN. tit. 6, § 2528 (2023).

[274] *See, e.g.*, CAL. PENAL CODE § 396(b) (West 2023); WIS. ADMIN. CODE ATCP § 106.02(1) (2023); ALA. CODE § 8-31-4 (2023).

[275] 73 PA. CONS. STAT. § 232.4(b) (2022).

[276] KAN. STAT. ANN. § 50-6,106(a)-(b) (2022).

[277] *See, e.g.*, 73 PA. CONS. STAT. § 232.4(d) (2022); ME. STAT. tit. 10, § 1105(1)(D) (2022).

[278] *See, e.g.*, N.Y. GEN. BUS. LAW § 396-r(3)(b)(ii)(c)(2) (McKinney 2023); 73 PA. CONS. STAT. § 232.4(c)(1) (2022); IND. CODE § 4-6-9.1-2(2) (2022); ILL. ADMIN. CODE tit. 14, § 465.30(b)(2) (2023); N.C. GEN. STAT. § 75-38(a)(1) (2023); ARK. CODE ANN. § 4-88-303 (2023); IOWA ADMIN. CODE r. 61-31.1(714) (2023); LA. STAT. ANN. § 29:732(A) (2022);

- States vary regarding the "lookback" period for comparison in assessing the liability trigger:
    - Some states compare the price during the time of emergency to prices immediately before to up to ninety days prior to the emergency.[279]
    - A few states do not define the basis and simply say "before" or "prior" to the emergency.[280] One state (Idaho) also compares the price point to the price after the emergency.[281]
- The price gouging laws of some states (such as Michigan and Ohio) prohibit unconscionable acts or practices, including charging excessively high prices at all times, not just in times of emergency.[282]

Goods Covered by Price Gouging Law

- Several state statutes apply specifically to "necessities";[283] and seven states specifically enumerate housing, lodging, and tenancy in their statutes, prohibiting landlords from terminating tenancy/evicting residents or charging excessive prices for housing and lodging.[284]
- Many state statutes, however, do not confine their reach to enumerated goods/services, even those statutes that only cover "necessities."[285]

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940 MASS. CODE REGS. 3.18(4)(b) (2023); N.J. STAT. ANN. § 56:8-107(1) (West 2023); OKLA. STAT. tit. 15, § 777.4(A)(1) (2022); OR. REV. STAT. § 401.965(4)(a) (2021); S.C. CODE ANN. § 39-5-145(5)(a)(i) (2022); TENN. CODE ANN. § 47-18-5103(b) (2022); VT. STAT. ANN. tit 9, § 2461d(c)(2) (2021); VA. CODE ANN. § 59.1-527(3) (2022); W. VA. CODE § 46A-6J-3(a) (2022).

[279] *See, e.g.*, N.Y. GEN. BUS. LAW § 396-R(3)(b)(i) (McKinney 2023) ("immediately prior"); S.C. CODE ANN. § 39-5-145(A)(5)(a) (2022) (30 days); D.C. CODE § 28-4101(2) (2023) (90 days).

[280] *See, e.g.*, KY. REV. STAT. ANN. § 367.374(1)(b) (West 2023) ("prior"); OR. REV. STAT. § 401.965(3)(a) (2021) ("prior"); OKLA. STAT. tit. 15, § 777.4(A) (2022).

[281] IDAHO CODE § 48-603(19)(a)(i) (2022).

[282] MICH. COMP. LAWS § 445.903(1)(z) (2023); OHIO REV. CODE § 1345.03(A) (2023).

[283] *See, e.g.*, ME. STAT. tit. 10, § 1105(3) (2022); TEX. BUS. & COM. CODE ANN. § 17.46(a), (b)(27) (West 2021); MO. CODE REGS. ANN. tit. 15, § 60-8.030 (2023).

[284] CAL. PENAL CODE § 396(f) (West 2023); HAW. REV. STAT. § 127A-30(a)(2) (2023); KY. REV. STAT. ANN. § 367.374(1)(b)(7) (West 2023); S.C. CODE ANN. § 39-5-145(B)-(D) (2022); TEX. BUS. & COM. CODE ANN. § 17.46(a), (b)(27) (West 2021); VA. CODE ANN. § 59.1-526 (2022); W. VA. CODE § 46A-6J-3(a) (2022).

[285] *See, e.g.*, LA. STAT. ANN. § 29:732(A) (2022); OHIO REV. CODE § 1345.03(A) (2023); ME. STAT. tit. 10, § 1105(1)(C), (3) (2022); TEX. BUS. & COM. CODE ANN. § 17.46(a), (b)(27)

Actors Covered by Price Gouging Law

- About half of state statutes apply to anyone, while the other half target suppliers or merchants[286] and three states (Illinois,[287] Indiana,[288] and Vermont[289]) direct the statute only to fuel and/or petroleum-based goods or services.

Sanctions/Remedies

- About half of the sanctions/penalties can be found in a state's general unfair consumer protection statute.[290]

(West 2021); MICH. COMP. LAWS § 445.903 (2023); ARK. CODE ANN. § 4-88-301 (2023); D.C. CODE § 28-4102(a) (2023); HAW. REV. STAT. § 127A-30 (2023); KAN. STAT. ANN. § 50-6,106(b)(4) (2022); MISS. CODE ANN. § 75-24-25(2) (2023); N.J. STAT. ANN. § 56:8-109 (West 2023); OKLA. STAT. tit. 15, § 777.2(4), (5) (2022); OR. REV. STAT. § 401.960(2) (2021); S.C. CODE ANN. § 39-5-145(a)(2) (2022); VA. CODE ANN. § 59.1-526 (2022).

[286] *See, e.g.*, CAL. PENAL CODE § 396(b) (West 2023); 73 PA. CONS. STAT. § 232.4 (2022); TEX. BUS. & COM. CODE ANN. § 17.47(a) (West 2021); N.Y. GEN. BUS. LAW § 396-r(2) (McKinney 2023); GA. CODE ANN. § 10-1-393.4(a) (2022); N.C. GEN. STAT. § 75-38(a) (2023); MICH. COMP. LAWS § 445.905(1) (2023); ALA. CODE § 8-31-3 (2023); ARK. CODE ANN. § 4-88-302(i) (2023); D.C. CODE § 28-4101(3) (2023); HAW. REV. STAT. § 480-3.1 (2023); IDAHO CODE § 48-603 (2022); IND. CODE § 4-6-9.1-1 (2022); IOWA ADMIN. CODE r. 61-31.1(714) (2023); KY. REV. STAT. ANN. § 367.374(b) (West 2023); LA. STAT. ANN. § 29:732(f)(3) (2022); ME. STAT. tit. 10, § 1105(3) (2022); MISS. CODE ANN. § 75-24-25(1)(a) (2023); N.J. STAT. ANN. § 56:8-109(3) (West 2023); OKLA. STAT. tit. 15, § 777.4(A) (2022); 6 R.I. GEN. LAWS § 6-13-21(a) (2023); S.C. CODE ANN. § 39-5-10(a) (2022); TENN. CODE ANN. § 47-18-5103(a) (2022); UTAH CODE ANN. § 13-41-201(1) (West 2023); VT. STAT. ANN. tit. 9, § 2451a(3) (2021). *But see* OHIO REV. CODE § 1345.03 (2023); FLA. STAT. § 501.160 (2022); ILL. ADMIN. CODE tit. 14, § 465.30(a) (2023); KAN. STAT. ANN. § 50-6,106(a) (2022); 2020 Md. Laws 90; 940 MASS. CODE REGS. 3.18(1) (2023); OR. REV. STAT. § 401.965(2) (2021); VA. CODE ANN. § 59.1-526 (2022); WIS. STAT. § 100.305(1)(e) (2023).

[287] ILL. ADMIN. CODE tit. 14, § 465.10 (2023).

[288] IND. CODE § 4-6-9.1-2 (2022).

[289] VT. STAT. ANN. tit. 9, § 2461d(a)(1) (2021).

[290] *See, e.g.*, N.J. STAT. ANN. § 56:8-107 (West 2023); W. VA. CODE § 46A-6J-5 (2022); WIS. ADMIN. CODE ATCP § 106 (2023); TEX. BUS. & COM. CODE ANN. § 17.46 (West 2021); FLA. STAT. § 501.160 (2022); N.Y. GEN. BUS. LAW § 396-r (McKinney 2023); 73 PA. CONS. STAT. § 232.4 (2022); ILL. ADMIN. CODE tit. 14, § 465.10 (2023); OHIO REV. CODE § 1345.03 (2023); GA. CODE ANN. § 10-1-393.4 (2022); N.C. GEN. STAT. § 75-38 (2023); MICH. COMP. LAWS § 445.903 (2023); ALA. CODE § 8-31-1 (2023); ARK. CODE ANN. § 4-88-301 (2023); CONN. GEN. STAT. § 42-230 (2023); D.C. CODE § 28-4101 (2023); IDAHO CODE § 48-603 (2022); IND. CODE § 4-6-9.1-1 (2022); IOWA ADMIN. CODE r. 61-31.1(714) (2023); KAN. STAT. ANN. § 50-6,106 (2022); KY. REV. STAT. ANN. § 367.372 (West 2023); ME. STAT. tit. 10, § 1105 (2022); MD. CODE ANN., COM. LAW § 13-411 (West 2023).

- Nine states allow for varying criminal sanctions, from misdemeanors to felonies depending on the extent of the violation[291]:
  - California goes a step further, and it is the only state where the price gouging statute is actually codified in the penal code.[292]
  - Tennessee, in contrast, specifically bars criminal actions.[293]
- About half of the states allow for civil injunctions.[294]
- Twenty allow for restitution remedies.[295]

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[291] *See, e.g.*, ARK. CODE ANN. § 4-88-103 (2023); OKLA. STAT. tit. 15, § 761.1(E) (2022); CAL. PENAL CODE § 396(h) (West 2023); CONN. GEN. STAT. § 42-232(d) (2023); LA. STAT. ANN. § 29:734(C) (2022); MD. CODE ANN., COM. LAW § 13-411 (West 2023); MISS. CODE ANN. § 75-24-25(4) (2023); S.C. CODE ANN. § 39-5-144(K) (2022); W. VA. CODE § 46A-6J-5(b) (2022).

[292] *See* CAL. PENAL CODE § 396 (West 2023).

[293] TENN. CODE ANN. § 47-18-5104(a) (2022).

[294] *See, e.g.*, MICH. COMP. LAWS § 445.905 (2023); TEX. BUS. & COM. CODE ANN. § 17.47 (West 2021); CAL. PENAL CODE § 396 (West 2023); N.Y. GEN. BUS. LAW § 396-r (McKinney 2023); 73 PA. CONS. STAT. § 232.4 (2022); ILL. ADMIN. CODE tit. 14, § 465.10 (2023); OHIO REV. CODE § 1345.03 (2023); GA. CODE ANN. § 10-1-393.4 (2022); ALA. CODE § 8-31-1 (2023); ARK. CODE ANN. § 4-88-301 (2023); CONN. GEN. STAT. § 42-230 (2023); IDAHO CODE § 48-603 (2022); IND. CODE § 4-6-9.1-1 (2022); IOWA CODE § 714.16 (2023); KAN. STAT. ANN. § 50-6,106 (2022); LA. STAT. ANN. § 29:732 (2022); MD. CODE ANN., COM. LAW § 13-406 (West 2023); MASS .GEN. LAWS ch. 93A, § 4 (2023); MISS. CODE ANN. § 75-24-1 (2023); MO. REV. STAT. § 407.020 (2022); OKLA. STAT. tit. 15, § 751 (2022); OR. REV. STAT. § 646.608 (2021); S.C. CODE ANN. § 39-5-145 (2022); TENN. CODE ANN. § 47-18-104 (2022); UTAH CODE ANN. § 13-41-201 (West 2023); VA. CODE ANN. § 59.1-196 (2022); WIS. STAT. § 100.305 (2023).

[295] *See, e.g.*, ARK. CODE ANN. § 4-88-104 (2023); IOWA CODE § 714.16(2)(o)(7) (2023); CAL. BUS. & PROF. CODE § 17203 (West 2023); TEX. BUS. & COM. CODE ANN. § 17.46 (West 2021); N.Y. GEN. BUS. LAW § 396-r (McKinney 2023); 73 PA. CONS. STAT. § 232.4 (2022); OHIO REV. CODE § 1345.03 (2023); GA. CODE ANN. § 10-1-393.4 (2022); N.C. GEN. STAT. § 75-1.1 (2023); MICH. COMP. LAWS § 445.910 (2023); ALA. CODE § 8-19-10 (2023); IDAHO CODE § 48-603 (2022); IND. CODE § 4-6-9.1-1 (2022); KAN. STAT. ANN. § 50-6,106 (2022); MD. CODE ANN., COM. LAW § 13-406 (West 2023); MO. REV. STAT. § 407.020 (2022); OKLA. STAT. tit. 15, § 751 (2022); S.C. CODE ANN. § 39-5-145 (2022); TENN. CODE ANN. § 47-18-104 (2022); VA. CODE ANN. § 59.1-196 (2022).

- Sixteen allow for individual remedies in private rights of action,[296] while three states (Idaho,[297] Maine,[298] & Virginia[299]) specifically bar individual remedies.
- Civil fines vary greatly from state to state. Some states impose additional fines for taking advantage of senior citizens (generally defined as individuals 65 years of age or older).[300]

Anti-Price Gouging Statutes

Those interested in a comprehensive state-by-state survey of price gouging statutes (including the District of Columbia and Puerto Rico) should consult *Table A.1*.

Table A.1: *Anti-Price Gouging Statutes By Jurisdiction*

State	Statute Citation	Additional Statute Citation
Alabama	ALA. CODE § 8-31-1, et seq. (2023).	ALA. CODE § 8-19-10 (2023)
Alaska	none; can file a consumer complaint with Attorney General's office	
Arizona	none[301]	

[296] *See, e.g.*, MO. REV. STAT. § 407.020 (2022); N.C. GEN. STAT. § 75-16.1 (2023); TEX. BUS. & COM. CODE ANN. § 17.46 (West 2021); OHIO REV. CODE § 1345.03 (2023); GA. CODE ANN. § 10-1-393.4 (2022); KAN. STAT. ANN. § 50-6,106 (2022); MICH. COMP. LAWS § 445.911 (2023); ALA. CODE § 8-19-10 (2023); MD. CODE ANN., COM. LAW § 13-408 (West 2023); MISS. CODE ANN. § 75-24-1 (2023); N.J. STAT. ANN. § 56:8-107 (West 2023); OKLA. STAT. tit. 15, § 751 (2022); OR. REV. STAT. § 401.960 (2021); S.C. CODE ANN. § 39-5-145 (2022); TENN. CODE ANN. § 47-18-104 (2022); VT. STAT. ANN. tit. 9, § 2461d (2021).

[297] IDAHO CODE § 48-603 (2022).

[298] ME. STAT. tit. 10, § 1105(4) (2022).

[299] VA. CODE ANN. § 59.1-529 (2022).

[300] *See, e.g.*, 815 ILL. COMP. STAT. ANN. 505/7(c) (2023); KAN. STAT. ANN. §§ 676-77 (2022); TEX. BUS. & COM. CODE ANN. § 17.47(c)(2) (West 2021).

[301] The Attorney General enforces the Arizona Uniform State Antitrust Act, which prohibits anticompetitive behavior such as price fixing and unlawful monopolization, but there are no laws prohibiting price gouging or charging high prices. *See* ARIZ. REV. STAT. ANN. §§ 44-1402, -1406 (2022).

State	Statute Citation	Additional Statute Citation
Arkansas	ARK. CODE ANN. § 4-88-301, et seq. (2023)	
California	CAL. PENAL CODE § 396 (West 2023)	
Colorado	none[302]	
Connecticut	CONN. GEN. STAT. § 42-230, et seq. (2023)	
Delaware	none[303]	
District of Columbia	D.C. CODE § 28-4101, et seq. (2023)	
Florida	FLA. STAT. § 501.160, et seq. (2022)	FLA. STAT. § 252.36 (2022)
Georgia	GA. CODE ANN. § 10-1-393.4, et seq. (2022)	GA. CODE ANN. § 10-1-438 (2022)
Hawaii	HAW. REV. STAT. § 127A-30 (2023)	HAW. REV. STAT. § 480-3.1 (2023)
Idaho	IDAHO CODE § 48-603 (2022)	
Illinois	ILL. ADMIN. CODE tit. 14, § 465.10, et. seq. (2023)	815 ILL. COMP. STAT. 505/7 (2023)
Indiana	IND. CODE § 4-6-9.1-1, et seq. (2022)	
Iowa	IOWA ADMIN. CODE r. 61-31.1(714) (2023)	IOWA CODE § 714.16 (2023)
Kansas	KAN. STAT. ANN. § 50-6,106 (2022)	

[302] Taking advantage of a state of emergency by unreasonably increasing the prices of essential goods and services may constitute unfair and unconscionable business acts and practices under the Colorado Consumer Protection Act. Under that Act, the Attorney General is authorized to file suit against price gougers and may seek damages, injunctive relief, restraining orders, restitution, and civil penalties. *See* COLO. REV. STAT. §§ 6-1-103, -105, -110 to -113 (2023).

[303] *See supra* note 84 and accompanying text on Delaware's approach to price gouging.

State	Statute Citation	Additional Statute Citation
Kentucky	KY. REV. STAT. ANN. § 367.372, et seq. (West 2023)	
Louisiana	LA. STAT. ANN. § 29:732, et seq. (2022)	
Maine	ME. STAT. tit. 10, § 1105 (2022)	ME. STAT. tit. 5, § 207, et seq. (2022)
Maryland	2020 Md. Laws Ch. 14.	Md. Exec. Order No. 20-03-23-03 (Mar. 23, 2020)
Massachusetts	940 MASS. CODE REGS. 3.18 (2023)	MASS. GEN. LAWS ch. 93A, § 4 (2023)
Michigan	MICH. COMP. LAWS § 445.903 (2023)	
Minnesota	none[304]	
Mississippi	MISS. CODE ANN. § 75-24-1, et seq. (2023)	
Missouri	MO. CODE REGS. ANN. tit. 15, § 60-8.030 (2023)	MO. REV. STAT. § 407.020 (2022)
Montana	none[305]	
Nebraska	none[306]	
Nevada	none; can file a consumer complaint with	

[304] *See supra* note 84 and accompanying text on Minnesota's approach to price gouging.

[305] Montana law prohibits "unfair" or deceptive acts or practices. Montanans are protected from price gouging under two state laws. First, violations of Montana Code Annotated Section 30-14-103 (unlawful practices in trade/commerce) are subject to civil fines of up to $10,000 for willful violations, and criminal sanctions of up to $5,000 and one year in prison. MONT. CODE ANN. § 30-14-142 (2021). Second, violations of Montana Code Annotated Section 30-14-205 (unlawful restraint of trade) are subject to criminal penalties of up to five years in prison and a $25,000 fine. MONT. CODE ANN. § 30-14-224(2) (2021).

[306] Revised Statutes of Nebraska Section 87-303.01 makes it illegal for a supplier to commit an "unconscionable act . . . in connection with a consumer transaction." If the price gouging is severe enough that a court would deem it "unconscionable," then charges could be brought against that supplier. *See* NEB. REV. STAT. §§ 87-303.01(2) (2022).

State	Statute Citation	Additional Statute Citation
	the Attorney General's office	
New Hampshire	none[307]	
New Jersey	N.J. STAT. ANN. § 56:8-107, et seq. (West 2023)	
New Mexico	none[308]	
New York	N.Y. GEN. BUS. LAW § 396-r (McKinney 2023)	
North Carolina	N.C. GEN. STAT. § 75-38 (2023)	
North Dakota	none	
Ohio	OHIO REV. CODE § 1345.03, et seq. (2023)	
Oklahoma	OKLA. STAT. tit. 15, § 777.1, et seq. (2022)	OKLA. STAT. tit. 15, § 751, et seq. (2022)
Oregon	OR. REV. STAT. § 401.960, et seq. (2021)	OR. REV. STAT. § 646.608, et seq. (2021)
Pennsylvania	73 PA. CONS. STAT. § 232.4, et seq. (2022)	
Puerto Rico	P.R. LAWS ANN. tit. 23, §§ 731–745 (2012)	

[307] New Hampshire state law prohibits unfair and deceptive conduct generally. N.H. REV. STAT. ANN. § 358-A:2 (2023). Senate Bill 688, which addresses price gouging of generic prescription drugs, has also been introduced. S. 688, 2020 Leg., Reg. Sess. (N.H. 2020).

[308] It is illegal under New Mexico Statutes Section 57-12-2 to misrepresent the price of goods or services or to take advantage of consumers' situation to a grossly unfair degree. N.M. STAT. ANN. § 57-12-2 (2023); *see also id.* § 57-12-3 (making unfair or deceptive trade practices and unconscionable trade practices unlawful). The Attorney General has issued a consumer advisory warning for COVID-19, indicating that price gouging is unconscionable and any price gouging resulting in illegal profit will be prosecuted, stating that, "Increasing prices on necessities like medical supplies, hand sanitizer, masks, and other items because our citizens are in fear of the coronavirus is simply unconscionable." *See supra* note 84 and accompanying text on New Mexico's approach to price gouging.

State	Statute Citation	Additional Statute Citation
Rhode Island	6 R.I. GEN. LAWS § 6-13-21 (2023)	
South Carolina	S.C. CODE ANN. § 39-5-145 (2022)	
South Dakota	none	
Tennessee	TENN. CODE ANN. § 47-18-5101, et seq. (2022)	TENN. CODE ANN. § 47-18-104, et seq. (2022)
Texas	TEX. BUS. & COM. CODE ANN. § 17.46, et seq. (West 2023)	
Utah	UTAH CODE ANN. § 13-41-201, et seq. (West 2023)	
Vermont	VT. STAT. ANN. tit. 9, § 2461d (2021)	
Virginia	VA. CODE ANN. § 59.1-526 (2022)	VA. CODE ANN. § 59.1-196, et seq. (2022)
Washington	none[309]	
West Virginia	W. VA. CODE § 46A-6J-1, et seq. (2022)	
Wisconsin	WIS. STAT. § 100.305 (2023)	WIS. ADMIN. CODE ATCP § 106.01, et seq. (2023)
Wyoming	none	

[309] Senate Bill 6699 has been introduced prohibiting price gouging at the time of disaster, which makes an increase in price of more than 10% for certain goods and services unlawful and subject to a civil fine of no more than $10,000 per violation, cumulative to other remedies. S. 6699, 66th Leg., Reg. Sess. (Wash. 2020).

APPENDIX B

Statistical Robustness

As noted in the text, the design of Experiment 2 allows us to exploit the "common questions" encountered by the participants to control for unobserved heterogeneity at the subject level using a "within subject" design. Although unobserved heterogeneity within participants is not always a cause for concern, particularly when the subject pool is large and participants are assigned randomly (both of which are true here), we nonetheless make use of these techniques below to confirm the robustness of our principal results.

We note that within our survey protocols, panel data structure is also a bit of a curse since the appropriate method for econometric estimation presents us with a different technical challenge. Recall that both of our dependent variables of interest (Unfairness assessment and Legal Response assessment) fall naturally on an ordinal scale; and thus, a standard ordered qualitative response model (such as an ordered logit used in the main text) would seem to be the appropriate approach. Yet, while ordered qualitative response models are well adapted for cross sectional analyses, they are known to be biased and inconsistent if one attempts to control for panel-like, "within subject" structure that our data exhibits.[310] In contrast, linear models are better adapted for panel-like structures with fixed effects, but they require us to treat our dependent variable as effectively a continuous random variable on a cardinal scale (rather than a categorical response on an ordinal scale).[311] Such an approach seems inappropriate too, since there is no guarantee that the hedonic "distance" between any two consecutive categories (such as "Completely Fair" and "Acceptable") is equal to that between any other two (such as "Acceptable" and "Unfair").

The technical issues flagged above are well known in the statistics and social sciences literature.[312] Although multiple solutions have been proposed to address them, we are aware of two that seem to have gained some measure of acceptance:

- A first strategy—known as the "blow-up and cluster" (or BUC) approach—retains the qualitative response structure of a logit/probit, but it estimates the ordered effects through a series of progressive, conditional dichotomous-choice models. Dichotomous-choice models do not suffer from the same

[310] Maximilian Riedl & Ingo Geishecker, *Keep It Simple: Estimation Strategies for Ordered Response Models with Fixed Effects*, 41 J. APPLIED STAT. 2358, 2358–59, 2372 (2014).

[311] *See id.* at 2359.

[312] *See, e.g.*, *id.* at 2358.

maladies as ordered-choice models when it comes to accounting for unobserved heterogeneity within a panel, and they have been shown to deliver consistent estimates in such environments.[313] The BUC approach exploits this property by effectively "amalgamating" an ordered choice analysis through a succession of dichotomous partitions. Explicitly, the BUC approach cycles through every possible binary dichotomization of the K ordered outcomes for the dependent variable (and K-1 associated cutoff points), optimizing across them.[314] Implementing this strategy involves cloning (or "blowing up") each individual response into K-1 identical copies (one corresponding to each posited dichotomization) followed by a maximum likelihood estimation of the pooled dichotomous choice frames treating each cloned copy of the respondent as a different observation (with errors clustered at the cloned-respondent level).[315]

- A second strategy—often called Probit-Adapted OLS (or "POLS")—manually re-scales the ordered outcome variables onto a "cardinal" score, assigning numerical values that correspond to each category's overall observed frequency in the data parameterized against a posited background distribution (usually the standard normal).[316] The rescaled variables could then be reconceived as a more authentic discretization along the intensive margin of a latent variable that is itself continuous, thereby facilitating least-squares estimation (with or without fixed respondent effects), and a natural interpretation of

[313] *See generally* Gary Chamberlain, *Analysis of Covariance* with *Qualitative Data*, 47 REV. ECON. STUD. 225 (1980). *See also* Gregori Baetschmann, Kevin E. Staub & Rainer Winkelmann, *Consistent Estimation of the Fixed Effects Ordered Logit Model*, 178 J. ROYAL STAT. SOC. 685, 685–86 (2015) (discussing Chamberlain's proposals on dichotomous-choice models); Riedl & Geishecker, *supra* note 310, at 2359 (discussing Baetschmann, Staub & Winkelmann's proposals on BUC estimator models).

[314] Baetschmann, Staub & Winkelmann, *supra* note 313, at 685–86; Bhramar Mukherjee, Jaeil Ahn, Ivy Liu, Paul J. Rathouz & Brisa N. Sanchez, *Fitting Stratified Proportional Odds Models by Amalgamating Conditional Likelihoods*, 27 STAT. MED. 4950, 4950 (2008) (proposing a new model that cycles through binary dichotomizations for a given data set).

[315] *See* Baetschmann, Staub & Winkelmann, *supra* note 313, at 685–86, 690–91 (discussing and then applying the BUC approach).

[316] *See* Riedl & Geishecker, *supra* note 310, at 2359, 2362.

> coefficients as reflecting "standard-deviation units" of the dependent variable.[317]

In our assessment of the literature, there appears to be no consensus ranking among the two strategies outlined above.[318] For the sake of completeness, then, we chose to implement both methods. The tables below present regression results from Experiment 2 for both Unfairness and Legal Response assessments, along three different perspectives. First, in Table B.1 we present the coefficients of a BUC estimator for Unfairness (left panel) and Legal Response (right panel), in a fashion similar to Tables 8 and 9 from the text. Second, in Tables B.2–B.3 we present OLS estimates (without fixed effects) of Unfairness and Legal Response answers (respectively) after re-scaling both dependent variables against a standard normal distribution, per the POLS approach. Finally, in Table B.4 we implement POLS with fixed effects at the respondent level for both Unfairness assessments (left panel) and Legal Response assessments (right panel).

Our results prove to be exceedingly robust to introducing within-subject controls. For example, virtually every coefficient estimate Table B.1 is within a tenth of a standard error of its corresponding coefficient in Tables 8 and 9. A similar relationship holds if one compares the coefficients of Table B.4 to Tables B.2 and B.3. Consequently, even after attempting to control for unobserved subject-level heterogeneity, our principal findings are unchanged (excepting for minute quantitative adjustments).

[317] *See generally* BERNARD VAN PRAAG & ADA FERRER-I-CARBONELL, HAPPINESS QUANTIFIED: A SATISFACTION CALCULUS APPROACH (rev. ed. 2008) (proposing this approach originally); *see also* Riedl & Geishecker, supra note 310, at 2359.

[318] *See supra* notes 310–317 and accompanying text.

Table B.1: *Experiment 2—(BUC Conditional Logit; Within Subject)*

	Unfairness			Legal Response		
	All Respondents	Conservatives	NonConservatives	All Respondents	Conservatives	NonConservatives
	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3
M3to4	3.598***	3.435***	3.805***	1.842***	1.691***	2.010***
	(13.36)	(9.13)	(9.73)	(8.71)	(6.15)	(6.06)
M3to10	6.899***	6.424***	7.519***	4.698***	3.918***	5.661***
	(16.03)	(11.79)	(10.35)	(13.96)	(9.90)	(9.28)
M3to4Lays	3.510***	3.429***	3.629***	1.264***	0.609	1.772***
	(8.70)	(6.20)	(6.34)	(3.53)	(1.33)	(3.17)
M3to10Lays	7.322***	6.309***	8.474***	4.431***	3.213***	5.733***
	(12.21)	(7.56)	(9.53)	(10.97)	(6.14)	(8.78)
M3toQuant	0.55	0.32	0.845	-0.518	-1.146+	0.328
	(1.05)	(0.41)	(1.36)	(-1.02)	(-1.94)	(0.35)
M3toAuct	7.378***	6.845***	8.027***	4.649***	3.624***	5.774***
	(9.99)	(6.90)	(7.01)	(8.62)	(4.74)	(6.98)
R3to4	4.283***	4.123***	4.507***	2.712***	1.859***	3.721***
	(10.85)	(6.60)	(8.26)	(7.05)	(3.71)	(6.16)
R3to10	6.975***	6.367***	7.632***	4.541***	3.459***	5.803***
	(12.81)	(7.44)	(9.91)	(9.87)	(5.17)	(9.47)
M3to4ApolRat	1.646***	1.716***	1.608***	0.733+	0.705	0.51
	(7.72)	(5.40)	(5.83)	(1.78)	(1.29)	(1.31)
M3to10ApolRat	4.216***	3.719***	4.707***	2.564***	1.767***	3.491***
	(12.02)	(8.34)	(8.70)	(7.71)	(3.87)	(7.04)
M3to4Apol	3.493***	3.931***	3.020***	1.990***	1.021	2.835***
	(7.44)	(6.66)	(5.09)	(4.70)	(1.41)	(5.35)
M3to10Apol	5.767***	5.908***	5.618***	4.716***	4.254***	5.298***
	(11.88)	(9.27)	(8.55)	(8.77)	(4.84)	(7.96)
M3to4Rat	1.912***	2.337***	1.522***	0.567+	0.857*	-0.146
	(7.66)	(5.93)	(5.36)	(1.72)	(2.12)	(-0.29)
M3to10Rat	4.494***	4.554***	4.541***	3.216***	3.169***	3.295***
	(12.33)	(9.23)	(8.34)	(9.52)	(6.91)	(6.44)
chi-2	341.293	178.56	187.024	303.425	162.196	210.383
p	0	0	0	0	0	0
N	4910	2005	2905	4620	1965	2655

Table B.1 reports Blow-Up and Cluster (BUC) coefficients on the six arms of Experiment 2 following the protocol developed in Baetschmann et al. (2015). Because this technique involves "cloning" observations, the number of observations reported far exceeds the number of subjects. Results presented are within-subject. There are four ordered categorical choices for Unfairness (Left Panel): (1) Completely Fair; (2) Acceptable; (3) Unfair; (4) Very Unfair. There are five ordered categorical choices for Legal Response (Right Panel): (1) Nothing; (2) Take the Product and Pay; (3) Take the Product and Do Not Pay; (4) Take the Product, Do Not Pay, and Fine; (5) Take the Product, Do Not Pay, Fine, and Imprison. In all specifications, Merchant "No Change" condition is the omitted coefficient. Significance Key (p-values): + 0.10; * 0.05; ** 0.02; *** 0.01.

Table B.2: *Experiment 2—Unfairness (Probit-Adapted OLS; Between Subjects)*

	All Respondents		Conservatives		Non-Conservatives	
	Model 1	**Model 2**	**Model 3**	**Model 4**	**Model 5**	**Model 6**
M3to4	0.880***	0.880***	0.788***	0.788***	0.952***	0.952***
	(25.20)	(25.14)	(14.82)	(14.73)	(20.64)	(20.58)
M3to10	1.641***	1.640***	1.493***	1.493***	1.756***	1.756***
	(38.39)	(38.30)	(21.90)	(21.79)	(32.76)	(32.68)
M3to4Lays	0.807***	0.802***	0.644***	0.656***	0.909***	0.901***
	(11.00)	(11.08)	(5.40)	(5.40)	(10.15)	(10.08)
M3to10Lays	1.676***	1.671***	1.414***	1.426***	1.842***	1.834***
	(20.17)	(20.68)	(8.55)	(8.64)	(24.64)	(24.37)
M3toQuant	0.110*	0.110+	0.112	0.086	0.108	0.116
	(2.02)	(1.90)	(1.53)	(1.13)	(1.36)	(1.34)
M3toAuct	1.645***	1.645***	1.475***	1.448***	1.792***	1.800***
	(17.53)	(18.36)	(9.35)	(9.19)	(17.23)	(18.25)
R3to4	1.006***	1.006***	0.876***	0.882***	1.105***	1.104***
	(12.83)	(13.11)	(7.06)	(7.17)	(11.35)	(11.51)
R3to10	1.637***	1.638***	1.399***	1.404***	1.819***	1.818***
	(19.96)	(20.86)	(9.74)	(9.96)	(22.32)	(23.41)
M3to4ApolRat	0.409***	0.392***	0.455***	0.457***	0.374***	0.350***
	(6.91)	(6.36)	(4.80)	(4.69)	(4.94)	(4.56)
M3to10ApolRat	1.015***	0.998***	0.948***	0.949***	1.063***	1.039***
	(14.20)	(14.07)	(7.86)	(8.30)	(12.24)	(11.83)
M3to4Apol	0.915***	0.946***	0.791***	0.818***	1.030***	1.063***
	(10.32)	(11.07)	(6.23)	(6.69)	(8.54)	(9.08)
M3to10Apol	1.399***	1.430***	1.249***	1.275***	1.539***	1.572***
	(15.41)	(16.73)	(9.51)	(10.27)	(12.67)	(13.40)
M3to4Rat	0.575***	0.564***	0.705***	0.684***	0.469***	0.466***
	(8.72)	(8.06)	(6.84)	(6.31)	(5.71)	(5.78)
M3to10Rat	1.218***	1.209***	1.289***	1.270***	1.160***	1.157***
	(15.01)	(14.24)	(11.36)	(10.55)	(10.08)	(10.00)
Age		0		-0.002		0
		(-0.20)		(-0.53)		(0.22)
Male		-0.044		-0.076		-0.025
		(-1.22)		(-1.18)		(-0.63)
HH IncomeBin		-0.002		0.007		-0.006
		(-0.15)		(0.38)		(-0.49)
Politics		-0.059***				
		(-4.15)				
HHEffects		-0.02		-0.093		0.021
		(-0.57)		(-1.42)		(0.53)
COVIDMajor Local		-0.015		-0.023		0.013
		(-0.65)		(-0.68)		(0.45)
COVIDMajor Country		0.061*		0.051		0.100**
		(2.04)		(1.28)		(2.51)
CONSTANT	-0.911***	-0.939***	-0.924***	-0.857***	-0.901***	-1.064***
	(-42.77)	(-9.37)	(-30.64)	(-5.14)	(-30.03)	(-9.89)
R-sqd	0.528	0.546	0.439	0.448	0.62	0.628
p	0.00	0.00	0.00	0.00	0.00	0.00
N	2010	2010	885	885	1125	1125

Table B.2 captures ordinary Least Squares coefficients on the six arms of Experiment 2. Within each arm, subjects made unfairness assessments for five different vignette variations (and thus total observations are equal to 5x total subjects). Results presented are between-subject. (See Table B.4 for within-subject specifications.) In this specification there are four ordered categorical choices: (1) Completely Fair; (2) Acceptable; (3) Unfair; (4) Very Unfair, whose values are cardinalized at the quartile means on a Standard Normal distribution, per the framework in van Praag & Ferrer-i-Carbonell (2008). Merchant "No Change" condition is omitted. Significance Key (p-values): + 0.10; * 0.05; ** 0.02; *** 0.01.

Table B.3: *Experiment 2—Legal Response (Probit-Adapted OLS; Between Subjects)*

	All Respondents		Conservatives		Non-Conservatives	
	Model 1	**Model 2**	**Model 3**	**Model 4**	**Model 5**	**Model 6**
M3to4	0.321***	0.321***	0.336***	0.338***	0.309***	0.309***
	(9.63)	(9.63)	(6.47)	(6.47)	(7.09)	(7.07)
M3to10	1.098***	1.099***	0.980***	0.981***	1.192***	1.192***
	(24.51)	(24.49)	(14.24)	(14.23)	(20.29)	(20.23)
M3to4Lays	0.243***	0.258***	0.171	0.175	0.301**	0.343***
	(2.73)	(2.93)	(1.45)	(1.48)	(2.38)	(2.74)
M3to10Lays	0.988***	1.003***	0.715***	0.719***	1.174***	1.217***
	(10.02)	(10.09)	(4.71)	(4.91)	(9.37)	(9.74)
M3toQuant	0.016	0.006	-0.045	-0.063	0.062	0.051
	(0.29)	(0.12)	(-0.58)	(-0.85)	(0.83)	(0.70)
M3toAuct	1.194***	1.185***	1.023***	1.005***	1.336***	1.324***
	(11.19)	(11.03)	(5.72)	(5.69)	(10.64)	(10.30)
R3to4	0.553***	0.535***	0.415***	0.388***	0.661***	0.644***
	(6.24)	(6.06)	(3.24)	(2.96)	(5.44)	(5.42)
R3to10	1.148***	1.129***	0.986***	0.959***	1.274***	1.257***
	(13.72)	(13.93)	(6.76)	(6.97)	(13.38)	(13.17)
M3to4ApolRat	0.071	0.053	0.147	0.119	0.022	0.004
	(1.08)	(0.86)	(1.16)	(1.02)	(0.34)	(0.06)
M3to10ApolRat	0.450***	0.432***	0.428***	0.401***	0.471***	0.453***
	(5.52)	(5.42)	(3.34)	(3.34)	(4.44)	(4.29)
M3to4Apol	0.431***	0.446***	0.099	0.137	0.725***	0.710***
	(4.71)	(4.79)	(0.96)	(1.27)	(5.30)	(5.21)
M3to10Apol	1.025***	1.039***	0.707***	0.746***	1.305***	1.290***
	(10.64)	(10.98)	(4.98)	(5.34)	(10.85)	(11.00)
M3to4Rat	0.038	0.06	0.086	0.126	-0.003	0.013
	(0.58)	(0.97)	(0.73)	(1.15)	(-0.05)	(0.20)
M3to10Rat	0.690***	0.709***	0.819***	0.852***	0.577***	0.594***
	(6.62)	(6.90)	(5.44)	(5.80)	(4.16)	(4.23)
Age		-0.002		0		-0.003
		(-0.97)		(0.08)		(-1.38)
Male		0.023		0.035		0.014
		(0.51)		(0.50)		(0.25)
HH IncomeBin		-0.003		0.002		-0.012
		(-0.21)		(0.11)		(-0.60)
Politics		0.046***				
		(2.87)				
HHEffects		0.100*		0.099		0.105+
		(2.18)		(1.38)		(1.77)
COVIDMajor Local		0.092***		0.095*		0.093**
		(3.35)		(2.33)		(2.56)
COVIDMajor Country		0.013		0.038		-0.095+
		(0.38)		(0.80)		(-1.79)
CONSTANT	-0.464***	-0.538***	-0.386***	-0.562***	-0.526***	-0.362**
	(-17.68)	(-4.92)	(-8.54)	(-3.54)	(-17.36)	(-2.39)
R-sqd	0.302	0.329	0.23	0.275	0.385	0.4
p	0	0	0	0	0	0
N	2010	2010	885	885	1125	1125

Table B.3 captures ordinary Least Squares coefficients on the six arms of Experiment 2. Within each arm, subjects made unfairness assessments for five different vignette variations (and thus total observations are equal to 5x total subjects). Results presented are between-subject. (See Table B.4 for within-subject specifications.) In this specification there are five ordered categorical choices: (1) Nothing; (2) Take the Product and Pay; (3) Take the Product and Do Not Pay; (4) Take the Product, Do Not Pay, and Fine; (5) Take the Product, Do Not Pay, Fine, and Imprison, whose values are cardinalized at the quintile means on a Standard Normal distribution, per the framework in van Praag & Ferrer-i-Carbonell (2008). Merchant "No Change" condition is omitted. Significance Key (p-values): + 0.10; * 0.05; ** 0.02; *** 0.01.

Table B.4: *Experiment 2—(Probit-Adapted OLS with Respondent Fixed Effects)*

	Unfairness			Legal Response		
	All Respondents	Conservatives	NonConservatives	All Respondents	Conservatives	NonConservatives
	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3
M3to4	0.880***	0.788***	0.952***	0.319***	0.332***	0.309***
	(25.19)	(14.83)	(20.64)	(9.58)	(6.38)	(7.09)
M3to10	1.640***	1.493***	1.756***	1.097***	0.976***	1.192***
	(38.38)	(21.91)	(32.76)	(24.42)	(14.11)	(20.29)
M3to4Lays	0.840***	0.726***	0.909***	0.244***	0.169*	0.301**
	(14.22)	(8.24)	(10.15)	(3.75)	(2.08)	(2.38)
M3to10Lays	1.709***	1.497***	1.842***	0.989***	0.713***	1.174***
	(23.35)	(10.65)	(24.64)	(12.52)	(5.75)	(9.37)
M3toQuant	0.136*	0.135	0.108	-0.041	-0.126	0.062
	(2.02)	(1.20)	(1.36)	(-0.68)	(-1.24)	(0.83)
M3toAuct	1.671***	1.498***	1.792***	1.138***	0.942***	1.336***
	(19.14)	(11.20)	(17.23)	(9.66)	(4.89)	(10.64)
R3to4	1.030***	0.933***	1.105***	0.533***	0.348***	0.661***
	(15.40)	(8.63)	(11.35)	(6.53)	(3.02)	(5.44)
R3to10	1.661***	1.455***	1.819***	1.127***	0.919***	1.274***
	(24.08)	(12.54)	(22.32)	(12.94)	(5.69)	(13.38)
M3to4ApolRat	0.410***	0.380***	0.374***	0.108+	0.058	0.022
	(7.20)	(4.13)	(4.94)	(1.92)	(0.49)	(0.34)
M3to10ApolRat	1.016***	0.872***	1.063***	0.487***	0.339***	0.471***
	(15.36)	(8.94)	(12.24)	(6.44)	(2.77)	(4.44)
M3to4Apol	0.945***	0.882***	1.030***	0.421***	0.279**	0.725***
	(13.48)	(9.35)	(8.54)	(5.39)	(2.41)	(5.30)
M3to10Apol	1.428***	1.339***	1.539***	1.015***	0.887***	1.305***
	(20.23)	(13.37)	(12.67)	(13.40)	(7.75)	(10.85)
M3to4Rat	0.459***	0.532***	0.469***	0.067	0.083	-0.003
	(7.39)	(5.28)	(5.71)	(1.32)	(0.96)	(-0.05)
M3to10Rat	1.106***	1.122***	1.160***	0.728***	0.840***	0.577***
	(13.65)	(10.04)	(10.08)	(8.62)	(6.47)	(4.16)
CONSTANT	-0.911***	-0.924***	-0.901***	-0.463***	-0.382***	-0.526***
	(-34.62)	(-22.57)	(-30.03)	(-18.54)	(-10.15)	(-17.36)
R-sqd	0.656	0.593	0.62	0.445	0.362	0.385
p	0	0	0	0	0	0
N	2010	885	1125	2010	885	1125

Table B.4 shows that within each arm, subjects made unfairness/legal response assessments for five different vignette variations, three of which were common, permitting estimation of respondent-level fixed effects. (Total observations are equal to 5x total subjects). Results presented are thus within-subject. (See Tables B.2 and B.3 for between-subject specifications.) There are four ordered categorical choices for Unfariness (Left Panel): (1) Completely Fair; (2) Acceptable; (3) Unfair; (4) Very Unfair. There were 5 ordered categorical choices for Legal Response (Right Panel): (1) Nothing; (2) Take the Product and Pay; (3) Take the Product and Do Not Pay; (4) Take the Product, Do Not Pay, and Fine; (5) Take the Product, Do Not Pay, Fine, and Imprison. Before estimation, categorical assessments are cardinalized at the quartile/quintile means (respectively) on a Standard Normal distribution, per the framework in van Praag & Ferrer-i-Carbonell (2008). Merchant "No Change" condition is omitted. Significance Key (p-values): + 0.10; * 0.05; ** 0.02; *** 0.01.