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IS THE PRICE RIGHT?
THE ROLE OF ECONOMIC TRADEOFFS IN EXPLAINING REACTIONS TO PRICE SURGES

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ABSTRACT

Public authorities often introduce price controls following price surges, potentially causing inefficiencies and exacerbating shortages. A survey experiment with 7,612 Canadian and US respondents shows that unregulated price surges raise moral objections and widespread disapproval. However, acceptance increases, and demand for regulation decreases when participants are prompted to consider economic tradeoffs between controlled and unregulated prices, whereby incentives from higher prices lead to additional supply and enhance access to goods. Moreover, highlighting these tradeoffs reduces polarization in moral judgments between supporters and opponents of unregulated pricing. Textual analysis of responses to open-ended questions provides further insights into our findings, and an incentivized donation task demonstrates consistency between stated preferences and real-stakes behavior. Although economic trade-offs do influence public support for price control policies, the evidence indicates that, even when the potential gains in economic efficiency from unregulated prices are explicit, a significant divide persists between the utilitarian views that standard economic thinking implies, and the non-utilitarian values held by the general population.

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"[…] cases often arise in which expediency may seem to clash with moral rectitude […] suppose, for example, a time of dearth and famine at Rhodes, with provisions at fabulous prices; and suppose that an honest man has imported a large cargo of grain from Alexandria and that to his certain knowledge also several other importers have set sail from Alexandria. […] is he to report the fact to the Rhodians or is he to keep his own counsel and sell his own stock at the highest market price? I am assuming the case of a virtuous, upright man […] who might be in doubt whether such silence would really be immoral. Marcus Tullius Cicero, De Officiis, 44 BCE.

"[…] if you look closely at the price-gouging debate, you'll notice that the arguments for and against price-gouging laws revolve around three ideas: maximizing welfare, respecting freedom, and promoting virtue. Each of these ideas points to a different way of thinking about justice." Michael Sandel, Justice, 2009 CE.

1. Introduction

Characterizing prices as signals of relative scarcity, and the price mechanism as the primary instrument to achieve allocative and production efficiency, are tenets of modern economics. According to Adam Smith ([1776] 1981), impediments to price adjustments exacerbate rather than solve problems such as famines. George Stigler (1987) famously stated that attributing scarcity to price movements is like blaming a thermometer for high temperature. Yet, numerous studies contend that people view prices also as the outcomes of social relationships that, by reflecting moral values and cultural norms, reveal the meaning that people assign to certain transactions (Beckert and Aspers 2011, Ody-Brasier and Fernandez-Mateo 2017, Ranganathan 2018, Sorenson and Waguespack 2006, Zelizer 1989). Moreover, price-based incentives may, under certain circumstances, be in contrast with clash with social values and preferences (Bénabou and Tirole 2006, Bowles 2016, Sandel 2012, Satz 2012).

These conflicting views between the principle of economic efficiency and the values of the general public become particularly evident in the reactions to price surges. Historically, price increases of staple goods often caused protests and riots (Bellemare 2014, Bentley 2001).[1] In more recent times, social disapproval and moral outrage have often followed the sudden increase in the price of various products and services, such as "surge pricing" by ride-sharing companies in response to extreme weather or other emergencies,[2] or the major increase in prices of surgical masks, hand sanitizer and certain pharmaceutical drugs during the COVID-19 pandemic. In these

[1] In late 2021, several countries began to experience high inflation rates. In our study, we focus on reactions to price surges of specific products, not to generalized increases in overall price levels (see for example Shiller 1997).

[2] On December 15, 2014, for example, a shooter entered a coffee shop in Sydney, Australia, holding customers hostages. When city officers ordered a lockdown of the surrounding area, prices for Uber rides increased fourfold. Many people condemned this behavior, and after trying to justify their choices, Uber apologized and offered refunds and free rides to those affected by the attack (Piotrowski 2014).

cases, there was a widespread belief was that companies were behaving unfairly, prompting calls for public intervention.[3] These examples suggest that popular perceptions of prices go beyond the assumptions of standard economic models. Kahneman et al. (1986) document that price increases following changes in demand often collide with social standards of fairness – a topic that philosophers have discussed for centuries, as the quotes at the beginning of this section highlight. Holz et al. (2021) show that people are willing to incur personal costs to report "price gougers" to the authorities because they disapprove of companies profiting from crises, which they consider "repugnant" (Roth 2007).[4,5]

Previous studies typically focused on one-time contexts where the supply of a good is fixed, and the price determines who gets the product and how the surplus is distributed between buyers and sellers. However, the debate about the social acceptability and regulation of price surges also involves considerations of the potential unintended consequences of government interventions. For example, higher prices may stimulate additional supply, the introduction of new products, or the reallocation of goods from low- to high-demand markets. Price controls, in contrast, may prevent these adjustments, creating or exacerbating shortages.[6] Previous research on the social acceptance of price increases did not consider these tradeoffs and how prompting people to consider them might influence their judgment and demand for regulation. Dal Bó et al. (2018) provide evidence that people may fail to consider equilibrium effects, leading them to rejecting policies that would be beneficial in the broader economic context. Moreover, past research focused solely on moral judgments of a given pricing regime without examining preferences for alternative policies, such as regulated versus unregulated prices.

In this study, we advance the literature on understanding public reaction to price surges with three main contributions. First, we examine how presenting the potential economic consequences

[3] See, for example, "Price gouging complaints surge amid coronavirus pandemic" (*NYT* 2020: shorturl.at/guvVYl) and "Stop price gouging,' 33 attorneys general tell Amazon, Walmart, others" (*NPR* 2020: shorturl.at/befS2).
[4] Anderson and Simester (2010) document customer antagonism to price changes. Rotenberg (2011) and Li and Jain (2016) elaborate models to explain these responses. Dworkzac et al. (2021) and Weitzman (1977) derive conditions under which price controls and rationing may be socially desirable, especially when inequality is high, and the regulator places a high value on equity.
[5] Most US states have laws against "price gouging". Typically, there are specific rules for essential goods or services, and states specify the maximum percent increase allowed after emergencies have been declared (see https://www.findlaw.com/consumer/consumer-transactions/price-gouging-laws-by-state.html).
[6] Cabral and Xu (2021) present evidence suggesting that sellers concerned about their reputation choose *not* to raise prices following demand increases, and that these decisions can result in supply shortages. Thus, shortages can occur even in the absence of regulation. Eyster et al. (2021) show that customers' dislike of "unfair prices" (i.e., those marked up steeply over cost) can cause price rigidities in the economy, with implications for monetary policy.

of free price movements versus price controls, and the associated tradeoffs, influences people's preference for one pricing regime over the other. Second, we investigate the nature of moral reactions to unrestricted price changes by measuring perceptions of fairness toward buyers and sellers separately. This allows us to better understand the perceived tension between consumers' right not to be exploited and companies' right to freely set prices. Third, we study how tradeoff considerations affect the polarization of opinions and whether broader attitudes towards the role of markets in society affect relate to reactions to price increases.[7]

We rely on a vignette-based survey experiment, a real-stakes choice task, and open-ended questions to study public perceptions of price surges. We conducted the study with 3,782 U.S. and 3,830 Canadian residents in May 2021 and December 2021, and designed it to test hypotheses about how various factors that influence people's views on price increases. In the vignette experiment, we randomly assigned each respondent to two versions of a scenario in which demand for a product suddenly rises. In the first version, a company raises the product's price; in the second, a public authority prevents the price increase by imposing a price cap. We varied and cross-randomized key features of the scenarios. Our primary manipulation, and innovation over the existing literature, consisted in altering the exposure of respondents to the description of possible economic effects of unregulated pricing versus price controls. For a random group of respondents, we highlighted these tradeoffs by reporting that higher prices would incentivize additional supply by new entrants (thus leading to lower prices in the future) or cause a reallocation of products across markets (mitigating the shortage) whereas price controls would preclude these adjustments. This allowed us to test whether making these economic consequences would shift perceptions of price surges and demand for regulation. Additionally, we randomly varied between mentioning and not mentioning that producing more entails higher unit costs. Price surges may be more acceptable when they result from increased production costs (Rotenberg, 2011), as this could reduce the perception that companies are taking advantage of consumers (Eyster et al. 2021). We also manipulated whether the scenario occurred during a pandemic and considered four products: a pharmaceutical drug, treadmills for home use, hand sanitizer, and hand moisturizer. Raising prices may lead to stronger disapproval during exceptional circumstances, and price increases for

[7] Previous work investigated how the provision of information on potential effects of economic incentives affects the support for certain morally controversial transactions and politically charged policies. See for example Elias et al. (2015a-b) and, more recently, Lennon et al. (2019), Brandts et al. (2022) and Dolls et al. (2023).

essential goods, especially health-related ones, may cause greater opposition than for discretionary or low-cost items. Lastly, given the greater role of the public sector in Canada, we expected that Canadian participants might be more receptive to price controls and less tolerant of price surges than U.S. respondents.

Most participants in our study opposed unregulated price increases for all products, especially health-related ones. However, acceptance of price surges more than doubled, from 20.7% to 43.5%, when participants faced scenarios that presented economic tradeoffs. Mentioning higher production costs increases the preference for an unregulated price regime by 4.7 percentage points. The presence of a pandemic did not have any impact on preferences for pricing policies, nor were there any differences between U.S. and Canadian residents. Furthermore, preferences for unregulated prices vs. price controls strongly correlate with the respondents' moral reactions. On average, participants viewed unregulated pricing as less fair to customers but fairer to companies than price controls. When expressing general moral judgments, respondents mostly took the customers' perspective.

Moral reactions to a given scenario differed depending on whether a scenario described tradeoffs or not. In the former case, the moral acceptability of unregulated pricing increased, whereas the acceptability of price controls decreased. Moreover, moral judgments were highly polarized in the absence of a description of tradeoffs; mentioning them, however, softened these differences, reducing the distance between supporters and opponents of unregulated price surges in terms of their moral acceptability. Similarly, the ideological differences between supporters of price controls and those who favored unregulated prices were less pronounced when respondents were exposed to the tradeoffs.

The answers to an open-ended question, which asked participants to report the motivations for their preferences for either unregulated price surges or price controls, provided further insights into our findings. Textual analyses showed that respondents who favored price controls predominantly cited moral concerns, particularly about the exploitation of customers and moral objections to profit-seeking behavior by companies. In contrast, respondents who supported unregulated price surges consistently brought motivations associated with the ability of markets to self-regulate and with the principle of free enterprise. Among participants exposed to the tradeoffs between policy regimes, the differences in the nature and focus of their comments were less

pronounced, consistent with the previously described findings that presenting tradeoffs reduced the polarization of moral judgments.

In December 2021, we conducted a follow-up survey with the same pool of respondents (with a return rate of 38%). We found that the effect of tradeoff exposure, which we measured between-subjects in the first wave, also holds in a within-subjects design. This finding, despite the considerable time interval between the two survey waves, underscores the stability of attitudes as measured by our survey instrument. Moreover, in the second wave, we introduced a real-stakes choice task where respondents could earn an extra dollar by allowing the researchers to donate $1 to an organization that advocates for free markets and opposes price controls. We observed a strong alignment between preferences expressed in the hypothetical scenarios and a real-stakes decision on a similar policy issue. Specifically, respondents who favored price controls were 25% more likely to forgo the monetary bonus to avoid supporting the anti-price control organization.[8]

Overall, therefore, we document widespread opposition to sudden price surges, motivated in large part by moral and ideological considerations. However, explicitly describing possible economic tradeoffs between policy regimes does affect people's reactions by making them more open to letting prices move freely. This result suggests that people do not immediately consider efficiency or equilibrium considerations when reacting to and expressing a judgment about price surges. When considerations about economic efficiency are missing, moral reactions are highly polarized; when economic tradeoffs are explicit, views tend to converge. However, the fact that most respondents still support price control policies in this case suggests that this position derives from normative concerns and not necessarily from lack of consideration for equilibrium effects and efficiency implications.

Section 2 describes our research design and the data, and Section 3 reports and discusses our main findings. In Section 4, we describe how text analysis of the open-ended comments provides insights into the interpretation of our findings. Section 5 includes results from various additional analyses, Section 6 discusses the evidence from the donation experiment, and Section 7 concludes.

[8] Buccafusco et al. (2021) independently conducted a survey on preferences for price regulation or unregulated prices for low-priced items (such as ice scrapers and hand sanitizers). Their study did not manipulate the exposure to economic tradeoffs or any of the other factors that we consider in our work, nor did it collect unstructured text data or include an incentivized module.

2. Survey experiment and data

2.1 Recruitment of participants

We relied on the market research company Respondi to recruit participants and requested 4,000 U.S. and 4,000 Canadian residents. Canada and the United States have historical, cultural, social, and economic similarities. However, there are significant differences in the role of the market and the state in each country's economy. In Canada, the public sector is more present in the provision of specific services and in regulating various industries than in the United States. Additionally, the perception of the market's role differs, with Canadians favoring more government intervention compared to Americans (Lipset 2013).

The survey company stratified the pool of respondents for each country based on gender, education, ethnicity, and income distribution of the adult population. Respondents in Canada could fill out the survey in either English or French.

2.2 Experimental survey design

2.2.1 Survey flow

After obtaining participants' consent to complete the survey, we collected information on their socio-demographic characteristics. To increase the perceived consequentiality of the study, we informed the respondents that we planned to send a letter to U.S. members of Congress (or Canadian members of Parliament) summarizing the survey results (Elias et al. 2019). Next, we showed them their randomly assigned vignettes, which we describe in detail below, in a between-subjects design (i.e., each participant received only one vignette condition). In their assigned condition, we asked participants to indicate whether they preferred unregulated pricing or price controls. We also included questions on views about the role of markets and government in society, in general and for specific industries. A final set of questions measured the participants' broad moral stances (utilitarian versus deontological), as well as their time and social preferences.

2.2.2 The vignettes

We presented each respondent with one hypothetical scenario in which a company experienced a sudden increase in the demand for a product. Each participant saw two versions of the same scenario. In the first version, the company raised the price of the product; in the second version,

the company planned to increase the product's price (by the same amount as in the first version), but the government intervened by capping the price at the level that prevailed before the demand shock. We then cross-randomized the following features between participants:

(1) Product. Each scenario concerned one of four products: a pharmaceutical drug, a treadmill for home use, a hand sanitizer, and a hand moisturizer. Two of these products are health-related (pharmaceutical drug and hand sanitizer), and the other are not; two are relatively expensive (drug and treadmill), whereas the other are low-priced; one (the drug) is potentially lifesaving.

(2) Context. In half of the scenarios, we specified neither the context in which the demand surge occurred nor its origin; we just mentioned an increase in the demand for a product. In the other half, we indicated that the demand increase resulted from a pandemic outbreak. Although we did not mention COVID-19 explicitly, we wanted to test whether reactions to price increases (especially for the health-related products) were specific to the pandemic-related events taking place at the time of the survey or were more general.

(3) Production costs. We randomized the scenarios to either include or not include a mention that the company incurred higher costs to produce and distribute additional units of its product.

(4) Economic tradeoffs. We manipulated the exposure of the respondents to considering the potential economic consequences of letting the price adjust freely versus imposing a cap. These consequences described tradeoffs that one may expect to present in the two cases. For the scenarios concerning the drug and the treadmill, we focused on intertemporal tradeoffs. Specifically, we outlined a two-period situation in which a high price in the first period implied that only a small proportion of the population could obtain the goods. However, the high price would induce entry and thus additional production, a lower market price, and a larger share of consumers being able to obtain the goods in the second period. Conversely, price controls in the first period would preclude these adjustments: in each of the two periods, the price would be the same, there would be no entry, and the share of the population able to obtain the good would be the same in both periods, at a level between the ones for the first and second period in the unregulated price version of the scenario. For the vignettes about hand sanitizer and moisturizer, we instead emphasized possible consequences of the reallocation of products across markets. Here, we described an increase in the demand for the product in a certain region. In the unregulated-price version, the company would choose to move its inventory to the high-demand area but did not do so in the version where the government-imposed price controls. Thus, these vignettes focused on a tradeoff

between higher prices and (current or future) greater product availability, and between lower prices and a (current and future) shortage of the goods. We designed these scenarios to test whether exposing respondents to tradeoffs typically discussed in the public debate concerning price surges would affect their preference for, and moral judgment of, unregulated pricing versus price controls.

(5) Additional "no-reason" scenarios. Economic theory interprets relative prices and their changes as signals that guide consumption, production, and investment decisions, without any need or concern for what caused the price movements. However, reactions to price changes may be affected by context-specific information. In our survey, we included four scenarios where the product price increased without specifying anything about the context or reason for the increase. These scenarios offer a baseline that allows us to compare respondents' choices (unregulated pricing versus price controls) and moral judgments for situations where the price of a given product changes by a certain amount (the same across scenarios) with and without a specified context.

By fully cross-randomizing features (1)– (4) across our conjoint experimental design, we obtained 4x2x2x2 = 32 scenarios. Adding the four 'no reason' scenarios (one per product, without any mention of either version of the other factors), the total number of scenarios is 36. Figure 1 reports examples of the scenarios (with tradeoff exposure) for each product. We report the full survey in the online appendix.

The cases that we illustrated in our vignettes are realistic and akin to situations that occurred during the first wave of the COVID-19 pandemic.[9] The size of the price increases was similar to those that was observed for similar products during that time. In our vignettes, the price of hand sanitizer increased from $4 to $20 per bottle – a five-fold increase that is close to what Holz et al. (2021) reported. In the case of the pharmaceutical drug, the surge from $200 to $1,000 per treatment course brings the price to a level consistent with what the Institute for Clinical and Economic Review estimated for *Remdesivir* (the first drug approved by the FDA to treat Covid-19) in 2020.[10]

[9] In March 2020, the *New York Times* reported that two brothers had stockpiled hand sanitizer in Tennessee and were selling it on Amazon at a large premium ("He has 17,700 bottles of hand sanitizer and nowhere to sell them": https://www.nytimes.com/2020/03/14/technology/coronavirus-purell-wipes-amazon-sellers.html). In May 2020, news that the pharmaceutical drug Remdesivir might be effective against COVID-19 led to a controversy about its pricing during the pandemic ("Putting a price on COVID-19 treatment Remdesivir", NPR: https://tinyurl.com/3sut75yt).

[10] The price increase in our vignettes was actually smaller than the potential price range that ICER initially estimated, which went from $390 to $4,500 per treatment course, depending on the drug's effect on mortality from Covid-19. See https://tinyurl.com/ytcduvbs.

Figure 1: Vignettes in the scenarios with exposure to tradeoffs

A. Pharmaceutical drug

Scenario 1	Scenario 2
A pharmaceutical company developed a drug to treat a certain condition and was selling the drug for $200 per treatment course. New evidence shows that the drug is also effective at reducing the severity of another disease. As a consequence, demand for the drug increases. **The company raises the price of the drug to $1,000 per treatment course.** About 30% of patients in need manage to obtain the drug in the next 12 months. **One year later, pharmaceutical companies introduce new drugs for the treatment of the disease**. The increased supply and competition drive the price down to $300 per treatment course, and about 80% of patients in need obtain one of the available treatment drugs.	A pharmaceutical company developed a drug to treat a certain condition and was selling the drug for $200 per treatment course. New evidence shows that the drug is also effective at reducing the severity of another disease. As a consequence, demand for the drug increases. **The company plans to raise the price of the drug to $1,000 per treatment course. However, the government decides to prevent that and imposes a price cap at $200 per treatment course.** About 50% of patients in need manage to obtain the drug in the next 12 months. **One year later, this drug is still the only available drug to treat the new disease**, and again about 50% of patients in need will obtain the treatment drug.

B. Treadmill

Scenario 1	Scenario 2
A company that produces treadmills specific for home use has been selling them at $200 each. More people start exercising at home. As a consequence, the demand for treadmills for home use increases. **The company raises the price of its treadmills to $1,000 each.** About 30% of customers looking for such a treadmill manage to obtain one in the next 12 months. **One year later, more physical exercise equipment producers decide to produce treadmills specific for home use**. The increased supply and competition drive the price of treadmills down to $300, and about 80% of customers looking for such a treadmill are able to buy one.	A company that produces treadmills for home use has been selling them at $200 each. More people start exercising at home. As a consequence, the demand for treadmills for home use increases. **The company plans to raise the price of its treadmills $1,000 each. However, the government decides to prevent that and imposes a price cap at $200 per treadmill.** About 50% of customers looking for a treadmill manage to buy one in the next 12 months. **One year later, no other companies have entered the market**, and again 50% of customers looking for such a treadmill are able to buy one.

C. Hand sanitizer

Scenario 1	Scenario 2
The typical price of hand sanitizer in a certain region is **$4 per bottle**. The demand for hand sanitizer in that region increases unexpectedly, and is currently higher than the local availability. **A company decides to move some of its inventory of hand sanitizer from another region to the one with the shortage, and sells it at $20 per bottle**. About 80% of customers who wish to purchase hand sanitizer are able to do so, whereas 20% are not.	The typical price of hand sanitizer in a certain region is **$4 per bottle.** The demand for hand sanitizer in that region increases unexpectedly, and is currently higher than the local availability. **A company decides to move some of its inventory of hand sanitizer from another region to the one with the shortage, and plans to sell it at $20 per bottle. However, the local government decides to prevent that, and imposes a price cap of $4 per bottle.** The company decides to no longer move its inventory to the region with the shortage. About 50% of customers who wish to purchase hand sanitizer are able to do so, whereas 50% are not.

D. Hand moisturizer

Scenario 1	Scenario 2
The typical price of hand moisturizer in a certain region is **$4 per tube**. The demand for hand moisturizer in that region increases unexpectedly, and is currently higher than the local availability. **A company decides to move some of its inventory of hand moisturizer from another region to the one with the shortage, and sells it at $20 per tube.** About 80% of customers who wish to purchase hand moisturizer are able to do so, whereas 20% are not.	The typical price of hand moisturizer in a certain region is **$4 per tube**. The demand for hand moisturizer in that region increases unexpectedly, and is currently higher than the local availability. **A company decides to move some of its inventory of hand moisturizer from another region to the one with the shortage, and plans to sell it at $20 per tube. However, the local government decides to prevent that, and imposes a price cap of $4 per tube. The company decides to no longer move its inventory to the region with the shortage.** About 50% of customers who wish to purchase hand moisturizer are able to do so, whereas 50% are not.

2.2.3 Morality assessments and policy choice

After reading each version of their assigned scenario (i.e., unregulated pricing and price control), participants expressed their judgment, on a scale from –10 to +10, about the scenario's fairness to the customers, to the company, and overall moral acceptability. We then showed the two versions of the scenario (or pricing policy regime) again, side by side (just as Figure 1 displays), and asked the respondents to select the one that they would prefer to see in place in their own country, and to report, in open-ended text form, the reason(s) for the answers they just gave.

The questions about fairness and moral acceptability are similar to those from Kahneman et al. (1986), and these judgments represented the outcome of interest in their study. Kahneman et al., however, included only an overall assessment of fairness, whereas we specified the subject to which the fairness assessment referred (the customers or the company), to gauge more insights about the respondents' moral reaction to each situation. For example, if a person perceives price controls as fair to customers but unfair to the company, a single assessment of fairness would not allow us to measure these differences. Moreover, we proposed to participants two versions of each scenario describing alternative policy regimes (unfettered price surges and price caps), and collected information about their moral assessment of each. Finally, our design allows us to test whether moral judgments of price surges are absolute or are affected by the possible economic consequences and tradeoffs between different policy regimes. The open-text question collects additional information to further investigate the motivations for specific answers (Ferrario and Stantcheva 2022; Haaland et al. 2024).

The order of the questions – first the elicitation of moral judgments, then the choice of the preferred policy regime, and finally the open-ended question on motivations – ensured that all respondents considered the moral implications of each scenario version and policy regime for all parties involved (customers, firm, and overall) before making their choice and providing their motivations. A possible concern is that prompting participants to consider moral issues might lead them to use only these arguments to determine their preferences and motivate them in the subsequent, open-ended question. However, Elias et al. (2019) showed that asking respondents to express moral judgments in an already morally charged setting did not alter people's subsequent choice of policy regime. In Section 4 below, we report additional considerations and analyses that we conducted to address and alleviate this concern.

2.2.4 Follow-up survey

In December 2021, seven months after the first intervention (wave 1), we invited the original respondents to complete a follow-up survey (wave 2). We gave each participant the same scenario (combination of product, context, and mention of cost increases) as in May; however, we showed all respondents the version with tradeoffs exposure regardless of which version they received in wave 1. Our main objective was to test whether the effects of tradeoff exposure that we measured in wave 1 in a between-subject design would also hold within-subjects, with a considerable time lag between presenting respondents with the versions without and with tradeoffs. Collecting one additional data point also allows us to further classify respondents in terms of the "strength" of their views. For example, participants who preferred the price control regime in both waves of the survey on the one hand, and those who preferred the unregulated price both times on the other hand, can be classified as arguably having the strongest (opposed) preferences.[11]

Wave 2 also included an incentivized donation opportunity. Following Bursztyn et al. (2020) and Elias et al. (2019), we offered respondents $1 (in addition to the payment for completing the survey) if they allowed the researchers to make a $1 gift to an organization that promotes unfettered markets and believes that the market price is always the "just" price, the Future of Freedom Foundation (FFF).[12] This module lets us assess whether the participants' responses to the hypothetical scenarios were consistent with a real-stakes choice, by verifying whether they are willing to incur a cost (i.e., give up $1) to express opposition to an organization that promotes free markets, plausibly because they do not share the views of the organization.

2.3 Data

We collected the data between April 29 and May 1, 2021 (wave 1), and then between December 10 and December 31, 2021 (wave 2). In wave 1, we recruited 7,612 participants, 3,830 in Canada and 3,782 in the United States (Table 1).

[11] In wave 2 we included only a subset of the questions on attitudes toward markets and government intervention and did not include the questions on time preferences, trust, and altruism.

[12] This organization is a "tax-exempt, non-profit educational foundation whose mission is to present an uncompromising moral, philosophical, and economic case for the free society." In the survey, we reported the FFF's position on the freedom that firms should enjoy when setting prices. The following sentences are from a post that appeared on the FFF's webpage and that we reported in our survey: "a just price is the market price," "a just price is any price based on supply and demand," "a just price includes any price that is raised in times of shortages and natural disasters," and "a just price is any price not constrained by some government regulation."

Table 1: Number of participants, overall and by round and country, and main experimental condition

	Wave 1		Wave 2	
	Canada	United States	Canada	United States
Overall N.	3,830	3,782	1,335	1,203
Product				
Drug	941	920	332	290
Treadmill	983	958	330	300
Sanitizer	934	944	329	282
Moisturizer	972	960	344	331
Reason for price increase				
Not specified	415	437		
Specified	3,415	3,345	1,335	1,203
Context				
Not specified	1,717	1,685	683	595
Pandemic	1,698	1,660	652	608
Mention of cost factors				
Cost factors not mentioned	1,750	1,630	695	598
Cost factors mentioned	1,665	1,715	640	605
Exposure to tradeoffs				
No tradeoff exposure	1,675	1,694		
Tradeoff exposure	1,740	1,651	1,335	1,203

In December, we gathered answers from 1,335 of the original respondents in Canada and 1,203 in the United States, corresponding to 34.9% and 31.8% of the participants in May, respectively.[13] The survey firm provided samples that matched the adult population by gender, age, ethnicity, and education in each country. Other features of the respondents (including marital status, employment, and income) were also similar to those of the Canadian and the U.S. populations; attitudes (political views, altruism, trust, intertemporal preferences), and whether a participant responded to both surveys in May and December, were well balanced across treatments (see Table B1 and Figure B1 in the Appendix).[14]

[13] In December, we only contacted participants who, in May, received a scenario with a specified reason for the price increase. That is, we did not recontact respondents who in the first wave were assigned to one of the four "No reason" scenarios described in Section 2. This implies that response rates in wave 2 were 39.1% in Canada (1,335/3,415) and 36% in the United States (1,203/3,345).

[14] Appendix Figure B1, moreover, reports estimates of regressions of binary indicators for individual socioeconomic characteristics (gender, race, education, income, marital status, number of children), attitudes (political views, altruism, trust, intertemporal preferences), and whether a participant responded to both surveys in May and December, on binary indicators of the 32 experimental conditions. Of the 496 estimated coefficients, 14, or 2.8%, are statistically significant at the 5% level. All but one of the 16 *p*-values of the F-tests are greater than 0.05.

3. Main findings

3.1 Estimation approach

Our empirical analysis combines descriptive statistics and regression techniques within the framework of a conjoint experiment. We focus on the average marginal component effects (AMCE), i.e., the average impact of variations in each experimentally manipulated attribute—tradeoffs exposure, mention of cost increases, pandemic context, and specific products—on choice outcomes (Hainmueller et al., 2014). This approach allows us to isolate the effect of each attribute, holding the other attributes constant, to understand how distinct factors influence decisions. Given the structure of our experimental design, where three of the attributes are binary and one has four categories, there are six main outcomes of interest, corresponding to the effects of the different products (three coefficients in a regression framework) and the binary switches in the other three attributes (three additional coefficients overall), with respect to a baseline level.

3.2 Moral reactions to the pricing scenarios

Respondents reported their moral views of the scenario version featuring unregulated pricing, followed by the version with price caps, and then selected their preferred policy option. We therefore begin by examining these morality assessments. We find that, across all vignettes, participants perceived unregulated pricing scenarios to be more unfair to the customer (average score = -4.39) than price control scenarios (3.22); conversely, they considered unregulated pricing more fair to the company (1.76) than price controls (0.51). These differences replicate in the overall moral acceptability scores: -4.28 for unregulated pricing and 2.20 for price controls. Table B2 in the Appendix reports all averages. In addition to having similar mean values, the scores of fairness to consumers and overall moral acceptability are highly correlated with each other (Appendix Figure B2). For the treadmill, which is less likely to be viewed as a necessity or a life-saving product, respondents found unregulated pricing less unfair to customers, and price controls more unfair to the firm compared to the other items.

Table 2 reports parameter estimates from linear regressions of moral reactions on indicators for the experimental components of interest. To account for different baseline perceptions that individuals may hold, we also measured the *relative* fairness and moral acceptability of the unregulated price scenarios by calculating the difference between their scores and those for the

price control scenario versions. Moreover, we computed the normalized values of the outcome variables; as such, the estimates are in standard deviation units.

Some of our experimental manipulations strongly affected moral reactions. Tradeoff exposure, in particular, increased the perceived fairness to customers of unregulated pricing (column 1) and, especially, lowered the perceived fairness to customers of price controls (column 4). It also increases the perceived fairness to the company of unregulated pricing (column 2). The effect of tradeoff salience on the respondents' perceived moral acceptability of unregulated pricing (column 3) and price controls (column 4) is similar in sign and magnitude to its effect on fairness to customers. The effect of tradeoff exposure on the moral acceptability rating is more similar to the rating of fairness to consumers than to the company. The impact of mentioning production costs is in the same direction as that of tradeoff exposure, though considerably smaller. Finally, unregulated pricing was considered more unfair and less morally acceptable for the drug, hand sanitizer, and hand moisturizer than for the treadmill. Moreover, in the case of the treadmill, the assessments of fairness to the company showed a much higher correlation with the overall moral acceptability assessments (Appendix Figure B3). The statistical significance of all estimates in this table, as well as in Table 3 below, holds even when correcting the p-values for multiple multiple-hypotheses testing (see Tables B3-B4 in the Appendix).

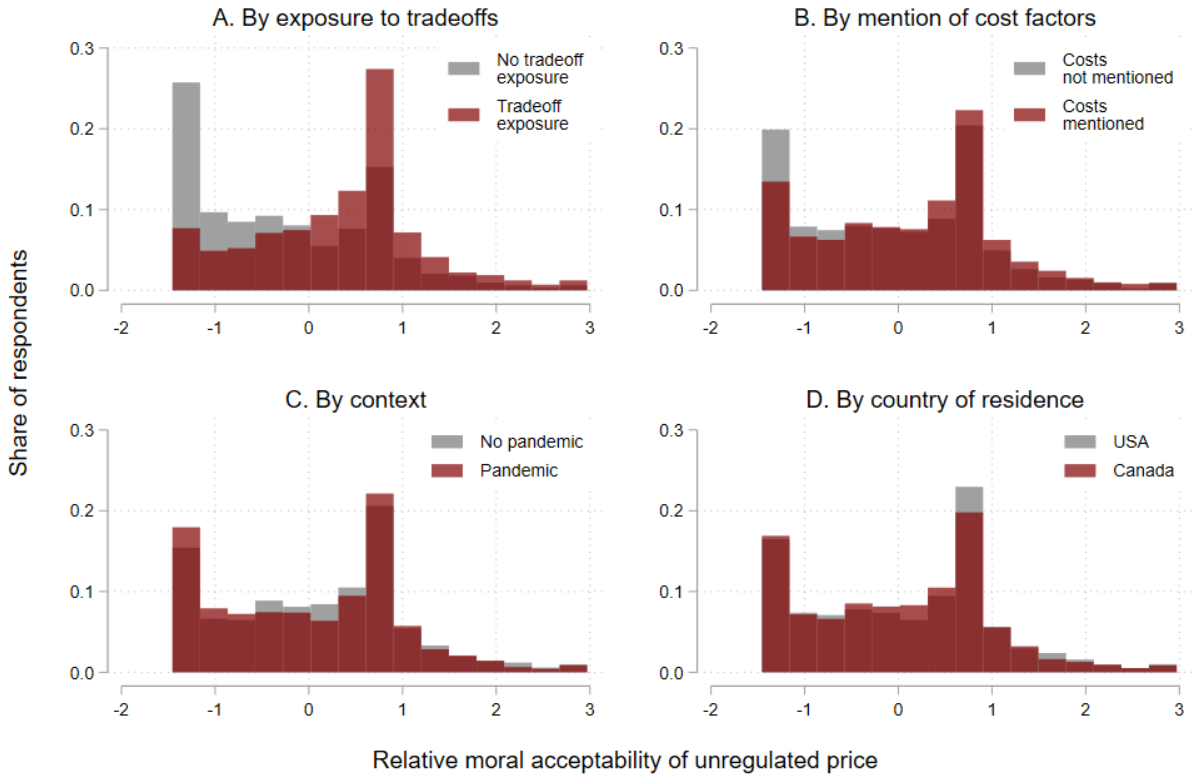
Figure 2 shows the effect of our experimental manipulations on the whole distribution of the relative moral acceptability score. Whereas the other experimental manipulations affected the mean relative moral acceptability score but not the shape of the overall distribution (panels B, C and D), tradeoff exposure drastically altered the degree of polarization of moral views (Panel A). When tradeoffs are not described, the distribution of the relative moral acceptability scores has a larger mass toward the left, indicating that, overall, participants who received scenarios without salient tradeoffs expressed a much more negative moral judgment of the unregulated price scenario than the price control scenario. With exposure to tradeoffs, the distribution of relative moral acceptability of the unregulated price version is more symmetric around the (single) peak near the value of zero. Thus, whereas in the absence of considerations about economic tradeoffs moral judgments are very polarized, this is considerably less the case when highlighting tradeoffs.

Table 2: Scenario features and moral judgments: Regression estimates

	Unregulated price versions			Price control versions			Relative morality judgments (unregulated pricing - price controls)		
Outcome variable (standardized):	Fairness to customer	Fairness to Company	Moral acceptability	Fairness to customer	Fairness to Company	Moral acceptability	Relative fairness to customers	Relative fairness to company	Relative moral acceptability
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Drug	-0.41***	-0.10***	-0.42***	-0.13***	0.43***	0.23***	-0.17***	-0.37***	-0.43***
	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)
Sanitizer	-0.56***	-0.28***	-0.55***	-0.36***	0.34***	0.03	-0.11***	-0.42***	-0.38***
	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)
Moisturizer	-0.41***	-0.14***	-0.40***	-0.36***	0.26***	-0.01	-0.01	-0.28***	-0.25***
	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)
Exposure to tradeoffs	0.39***	0.20***	0.31***	-0.81***	0.02	-0.56***	0.83***	0.12***	0.58***
	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)
Costs mentioned	0.12***	0.01	0.15***	-0.03	-0.19***	-0.13***	0.10***	0.14***	0.19***
	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)
Pandemic	-0.08***	-0.08***	-0.11***	-0.02	0.07***	-0.02	-0.04*	-0.10***	-0.06***
	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)
Canadian resident	-0.03	0.05*	-0.02	0.06***	-0.04*	0.05*	-0.06***	0.06**	-0.04*
	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)
Constant	0.19***	0.07**	0.21***	0.57***	-0.17***	0.24***	-0.28***	0.17***	-0.03
	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)
Observations	6,760	6,760	6,760	6,760	6,760	6,760	6,760	6,760	6,760
R-squared	0.085	0.023	0.075	0.187	0.036	0.092	0.185	0.040	0.125

Notes: The parameter estimates are from OLS regressions. Each observation corresponds to a different respondent. The outcome variables are in standard deviation units. The right-hand-side variables listed in the first column are binary indicators for the product in the scenario (treadmill omitted), salience of tradeoffs and cost factors, context, and residence of the participant. Robust standard errors are in parentheses. * $p<0.1$, ** $p<0.05$, *** $p<0.01$.

Figure 2: Distribution of relative moral acceptability scores of the unregulated price scenario



Notes: The figure reports the estimated density of the standardized score representing the relative acceptability of the unregulated price scenario by product, salience of tradeoffs, salience of demand or cost factors, context, and participants' country of residence. The relative moral acceptability of unregulated price scenario is the difference between the score on the moral acceptability of the unregulated price scenario and the score on the moral acceptability of the price control scenario. Each of the two scores can take values between –10 and +10, in 0.1 increments. The overall average value of the relative score is –6.48. The values on the x-axis indicate standard deviation units.

3.3 Support for unregulated price surges, moral judgments, and market ideology

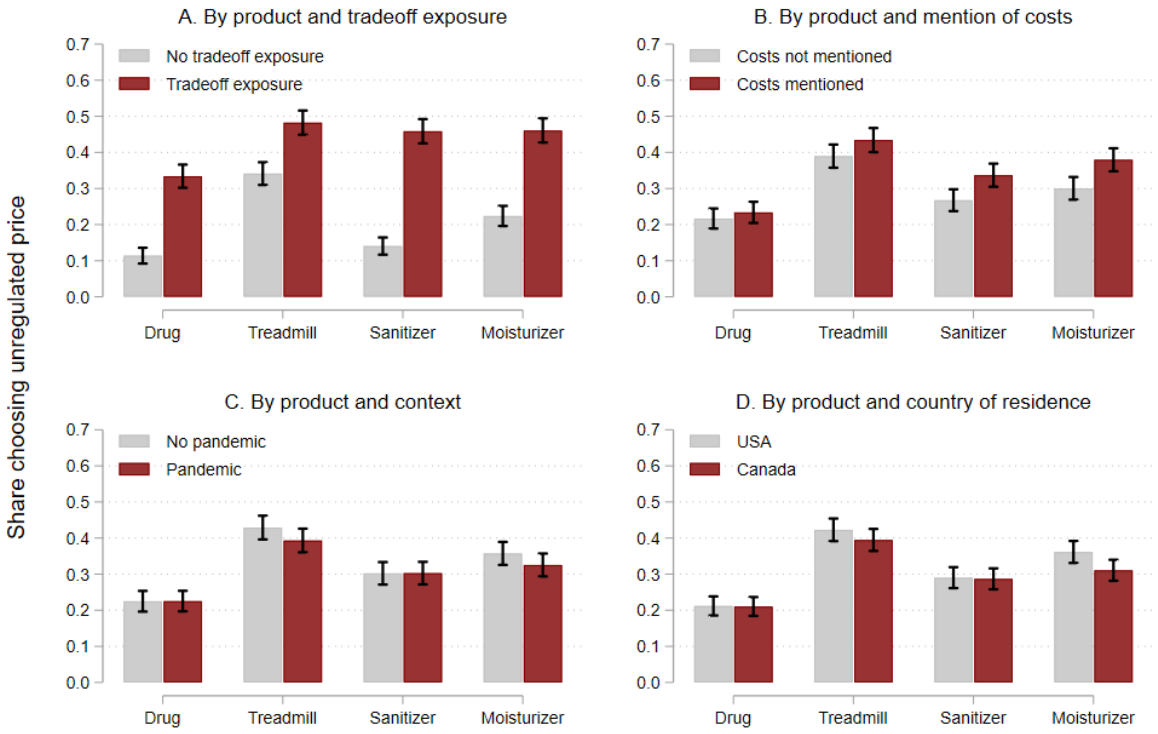
Figure 3 shows the share of respondents who chose the unregulated price option.[15] Panel A shows that, for all products, large majorities of respondents declared a preference for capping the price in the no-tradeoffs scenario. The support varies between products; it is lowest for the pharmaceutical drug at 11.4% and the hand sanitizer at 14.1%, highest for the treadmill at 34.1%, and intermediate for the moisturizer at 22.4%. Panel A also indicates that tradeoff exposure has a large, positive effect on support for unregulated pricing. The fractions of respondents supporting unregulated

[15] Because most of our analyses concern the vignettes that included specific reasons for the prices increases, the statistics reported in this section, except for some analyses in Section 3.3, refer to the 6,760 participants, out of 7,612, who received scenarios with reasons included (i.e., respondents assigned to the "No reason" scenarios were not included). Moreover, we consider only data from participants who fully completed the survey.

pricing increase significantly when tradeoffs are salient: 33.4% for the pharmaceutical drug, 48.3% for the treadmill, 45.9% for the hand sanitizer, and 46.1% for the hand moisturizer.

Panel B shows that support for unregulated prices is also higher when cost factors are mentioned, although the changes are smaller than those induced by the exposure to tradeoffs. There are no substantial differences in support between pandemic and generic scenarios and between Canadian and U.S. residents (Panels C and D).

Figure 3: Share of respondents supporting unregulated pricing scenarios



Notes: The figure reports the share of respondents who selected the unregulated price scenario. The support rates are by product and salience of tradeoffs (A), salience of cost factors (B), context (C), and respondents' country of residence (D). The error bars represent 95% confidence intervals.

In Table 3, we report results from linear regressions where the outcome variable is a binary indicator for whether the respondent preferred the unregulated pricing option, and the regressors are binary indicators for products, salience of tradeoff, mention of increased costs, pandemic context, and country of residence. The estimates in column (1) show that, on average, support for unregulated pricing increases by 22.8 percentage points when tradeoffs are explicit ($p<0.001$) and by 4.7 percentage points when production costs factors are mentioned ($p<0.001$). These changes

correspond to 73% and 15% of the overall average in the no-tradeoffs and the no-production costs cases, respectively. Columns (2)-(5) show the estimates separately by product. Tradeoffs exposure increased respondents' acceptance of unregulated prices for all products. The impact of production costs holds for the hand sanitizer and the moisturizer but not for the drug and the treadmill. Finally, the estimates in column (6) are from a model that includes interaction terms between the pandemic indicator and either tradeoff exposure or production costs; the corresponding coefficient estimates are small and not statistically significant.[16]

We then add the score for the relative moral acceptability of the unregulated price scenario. The estimates in column (7) imply that one standard deviation change in the relative moral acceptability score corresponds to a change in support rates for unregulated pricing of 22.3 percentage points, a size comparable to the tradeoff exposure effect from the estimates in column (1). Including this variable on the right-hand side substantially alters the estimates on the indicators for the various scenario features. In particular, the estimated differences between products are much smaller, the estimated effect of tradeoff exposure drops from 22 to 9 percentage points, and the estimated effect of cost factors saliency is close to and not statistically different from zero.

Of course, we cannot interpret the relationship between the support for the unregulated price regime and its relative moral acceptability as causal, because both the moral judgments about each scenario and the choice of the pricing regime depend on the scenarios' characteristics. However, the strong correlation, and the considerable shrinkage in the estimates of the salient tradeoff and cost effects suggests that the preference for a particular scenario has strong moral connotations.[17]

[16] In the Appendix, we present findings from market scenarios that did not provide reasons for price increases. Appendix Table B5 and Appendix Figures B4 and B5 show that respondents' choices and moral reactions are more similar to those who evaluated scenarios without salient tradeoffs than to those with salient tradeoffs.

[17] Because respondents made moral assessments before selecting their preferred pricing regime, differences between different scenarios, e.g., with and without the description of economic tradeoffs, may result from both adjustments in moral judgment and shifting weights attributed to moral considerations. Our research design primarily focuses on determining broad trends in response to our manipulations; as such, it may not fully identify and separate the role of these psychological processes. We also reckon that there could be a tendency for participants to retroactively rationalize their decisions, attributing their choices to less morally objectionable reasoning rather than a decreased emphasis on the moral dimension.

Table 3: Scenario features and choice: Regression estimates

	Outcome variable = 100 if chose Unregulated price, 0 if chose Price control								
Sample:	Full Sample	Drug	Treadmill	Hand sanitizer	Hand moisturizer	Full Sample	Full Sample	Full Sample	Full Sample
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Drug	-18.80***					-18.82***	-9.16***	-17.27***	-9.12***
	(1.54)					(1.54)	(1.35)	(1.47)	(1.33)
Sanitizer	-11.27***					-11.29***	-2.91**	-10.14***	-2.99**
	(1.58)					(1.58)	(1.40)	(1.52)	(1.38)
Moisturizer	-7.17***					-7.20***	-1.56	-6.34***	-1.57
	(1.61)					(1.62)	(1.40)	(1.54)	(1.38)
Tradeoffs exposure	22.77***	22.02***	13.96***	31.71***	23.74***	21.88***	9.75***	22.34***	10.64***
	(1.09)	(1.98)	(2.35)	(2.10)	(2.21)	(1.54)	(1.04)	(1.05)	(1.03)
Production costs	4.74***	1.69	3.41	6.35***	7.67***	3.98**	0.58	4.74***	0.94
	(1.09)	(1.99)	(2.36)	(2.11)	(2.21)	(1.55)	(0.97)	(1.05)	(0.96)
Pandemic	-1.59	-0.32	-3.42	0.34	-2.77	-3.24*	-0.26	-1.27	-0.20
	(1.09)	(1.99)	(2.35)	(2.11)	(2.21)	(1.69)	(0.97)	(1.05)	(0.95)
Canadian resident	-2.58**	-0.04	-2.57	-0.96	-6.54***	-1.63*	-1.63*	-1.22	-0.93
	(1.09)	(1.99)	(2.34)	(2.11)	(2.21)	(0.97)	(0.97)	(1.05)	(0.95)
Tradeoffs x Pandemic						1.78			
						(2.18)			
Production costs x Pandemic						1.52			
						(2.18)			
Relative moral acceptability of unregulated pricing							22.26***		20.32***
							(0.47)		(0.49)
Pro-market attitudes								11.82***	6.84***
								(0.52)	(0.50)
Constant	29.63***	10.75***	35.54***	11.22***	23.02***	30.47***	30.38***	28.13***	29.45***
	(1.59)	(2.09)	(2.60)	(2.15)	(2.42)	(1.73)	(1.35)	(1.50)	(1.33)
Observations	6,760	1,648	1,731	1,666	1,715	6,760	6,760	6,760	6,760
R-squared	0.084	0.070	0.024	0.125	0.075	0.084	0.280	0.148	0.300
Mean of the outcome variable	32.15	22.51	41.13	30.25	34.17	32.15	32.15	32.15	32.15

Notes: The parameter estimates are from OLS regressions. Each observation corresponds to a different respondent. The right-hand-side variables are binary indicators for the product in the scenario (treadmill omitted), tradeoffs exposure, production costs, context, and residence of the participant. In column (7), regressors include the standardized score for relative moral acceptability of the unregulated price scenario with respect to the price control scenario; in column (8), regressors include the standardized index for pro-market attitudes, and in column (9) both these variables are included. In all columns, we multiply the outcome variable indicator by 100; therefore, the reported numbers correspond to estimated percentage point changes. Robust standard errors are in parentheses. * $p<0.1$, ** $p<0.05$, *** $p<0.01$.

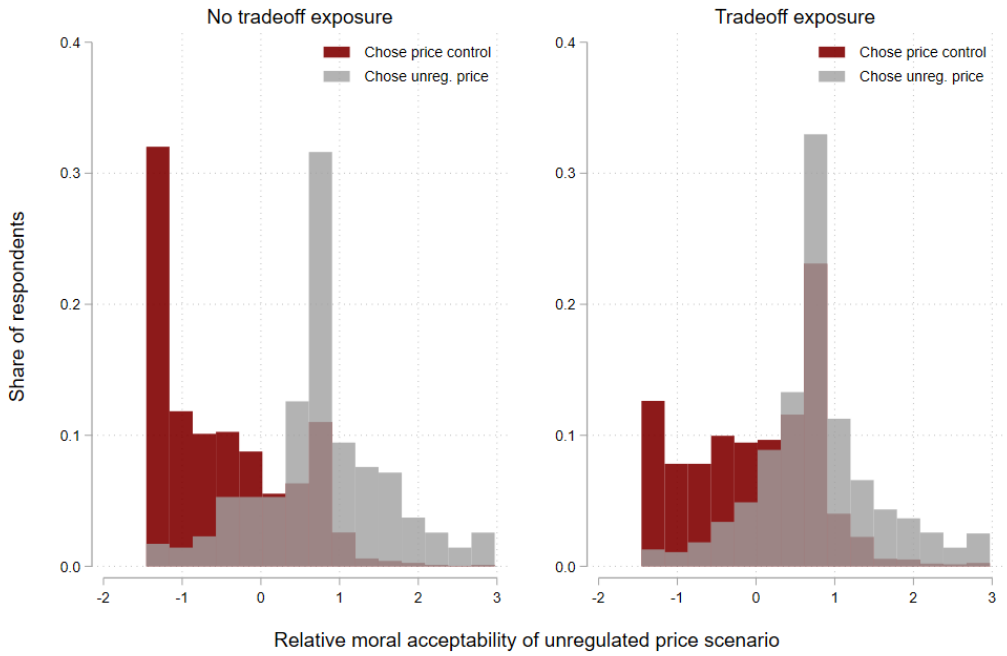
We also ask whether support for or opposition to unregulated prices reflects a more positive or negative view of the role that markets play in society. To answer this question, we compute a summary measure of attitudes toward markets as the average of the scores from three questions: (a) fairness or unfairness of the market system, (b) the extent to which the market system promotes or harms innovation and growth, and (c) the extent to which the government intervenes too much or too little in the economy (see the online appendix for the exact wording of these survey questions). Each score took values between –10 and +10, with higher values indicating a more positive view of the role of markets. The average of this measure does not vary significantly across experimental conditions (see Appendix Figure B1), indicating that general attitudes toward markets are pre-determined characteristics of the respondents and have no relationship with the treatments. Column (8) reports estimates from our basic regression model with support for unregulated prices as the outcome variable, including the standardized "pro-market" score among the covariates. The coefficient estimate on this variable is large and statistically significant. The estimates in column (9) are from a model that includes the score of pro-market views and the score of relative moral acceptability of unregulated prices on the right-hand side of the regression equation. The estimated coefficient on the relative moral acceptability index is similar to the one in column (7), where pro-market attitudes were not included; this strengthens our claim that the respondents' general views about the role of markets in society are predetermined with respect to their opinions about the specific scenarios that we asked them to evaluate. The coefficient estimate on pro-market attitudes in the full specification of column (9) is still statistically significant but smaller than in column (7), suggesting some correlation between underlying views about markets and moral reactions to the vignette scenarios.

3.5 Tradeoff exposure, moral polarization, and sorting

The findings above showed that exposure to tradeoffs not only increased support for unregulated price surges and increased their moral approval, but also reduced polarization in morality judgments. We explore these insights further by examining the distribution of relative moral acceptability scores by tradeoff exposure as well as by pricing regime choice. Figure 4 shows that when tradeoffs are not mentioned, the moral judgments of those who select the unregulated price

option and those who chose the price control option are much more different from one another than when tradeoffs are mentioned.[18]

Figure 4: Distribution of relative moral acceptability of unregulated prices by scenario choice and exposure to tradeoffs



Notes: The figure displays the distribution of the relative moral acceptability of the unregulated price option by the respondents' choice (unregulated price or price control) and whether the scenario has salient tradeoffs or not. The relative moral acceptability of the unregulated price scenario is the difference between the score on the moral acceptability of the unregulated price option and the score on the moral acceptability of the price control option. Each of the two scores can take values between –10 and +10, in 0.1 increments. The overall average value of the relative score is –6.48. The values on the x-axis indicate standard deviation units.

Among those who selected the unregulated price option, the relative moral judgment of that option has a similar distribution with and without tradeoffs exposure. The two distributions are single-peaked and centered; thus, most supporters of unregulated prices consider the two versions of a scenario as similarly morally acceptable. Conversely, the moral valuation of unregulated prices is significantly more negative for those who select price controls when evaluating scenarios

[18] Appendix Figures B6–B8 report distributions analogous to those in Figure 4 but for the absolute values of the scores of fairness to customers, fairness to the company, and overall moral acceptability of each of the two scenario versions, by scenario choice and salience of tradeoffs. Polarization is much stronger when tradeoffs are not salient. Judgment about fairness to the company is less responsive to tradeoff exposure and vary less between those who select the unregulated price regime and those who prefer price controls.

without tradeoffs than for participants who prefer price controls in scenarios with tradeoffs.[19] Therefore, the exposure to tradeoffs softened the differences in moral reactions between supporters and opponents of unregulated pricing.[20]

4. Insights from text analysis

Our findings suggest that people view prices as more than just indicators of scarcity, and generally reject price surges. However, when the economic consequences of unregulated or controlled prices are highlighted, opposition to market-driven price adjustments decreases, implying that economic tradeoff considerations do influence the choice between unregulated and controlled prices. To gain additional insights into the underlying reasons for the respondents' choices, we analyzed their open-ended answers, where they motivated their scenario choices and moral reactions. The responses to close-ended questions offer limited insights into specific concerns or particular aspects of a free-market scenario that are appealing or problematic. The analysis of unstructured text identifies issues of relevance that would be difficult to measure with close-ended questions but are important for forming judgments and preferences (Ferrario and Stantcheva 2022; Haaland et al. 2024). Specifically, we calculated the frequency of keywords and phrases, computed the semantic similarity between comments of respondents in different conditions, and estimated the prevalence of certain topics. Although we pre-registered these additional analyses, we consider them exploratory in nature, and use them to help interpret the main results.

4.1 Motivations for the choice of pricing regime

Figure 5 shows the frequency of eighteen often-used, non-obvious words in the open answers in two groups of respondents. We "stemmed" words with the same root into single terms to represent

[19] The p-value of the Kolmogorov-Smirnov test of equality of distribution of relative moral acceptability of the unregulated price regime with and without salient tradeoffs is 0.4 for the participants who selected the unregulated price option, and <0.001 for those who chose the price cap regime.

[20] Figure B9 in the Appendix displays the distribution of respondents' overall views about the role of markets in society according to their choice of pricing regime. Supporters of the unregulated price scenario expressed a significantly more positive attitude toward markets in general than those who preferred price controls. Among participants who supported unregulated prices, those who did so when evaluating scenarios without salient tradeoffs were stronger supporters of a market economy in general. Kolmogorov-Smirnov tests of equality of distribution show significant differences for the respondents in favor of the unregulated price option (p, and statistically indistinguishable distributions for the supporters of price caps (p=0.47). Appendix Figure B10 shows similar evidence when we consider the distribution of political views on economic issues. For scenarios without tradeoff exposure, the political preferences on economic issues between supporters and opponents of unregulated prices are more different than for scenarios with salient tradeoffs. The differences in political views on social issues are much smaller.

an overall meaning. For example, Fair* includes, among others, “fair”, “fairness”, “fairer”; Afford* groups together “afford”, “affordable”, “affording”; Govt* includes “govern”, “government” and the abbreviation “gvt”. In some cases, we also grouped obvious synonyms together; for examples, we compute the frequency of words such as “consumer”, “client” and “customer” under the same term Consum*.

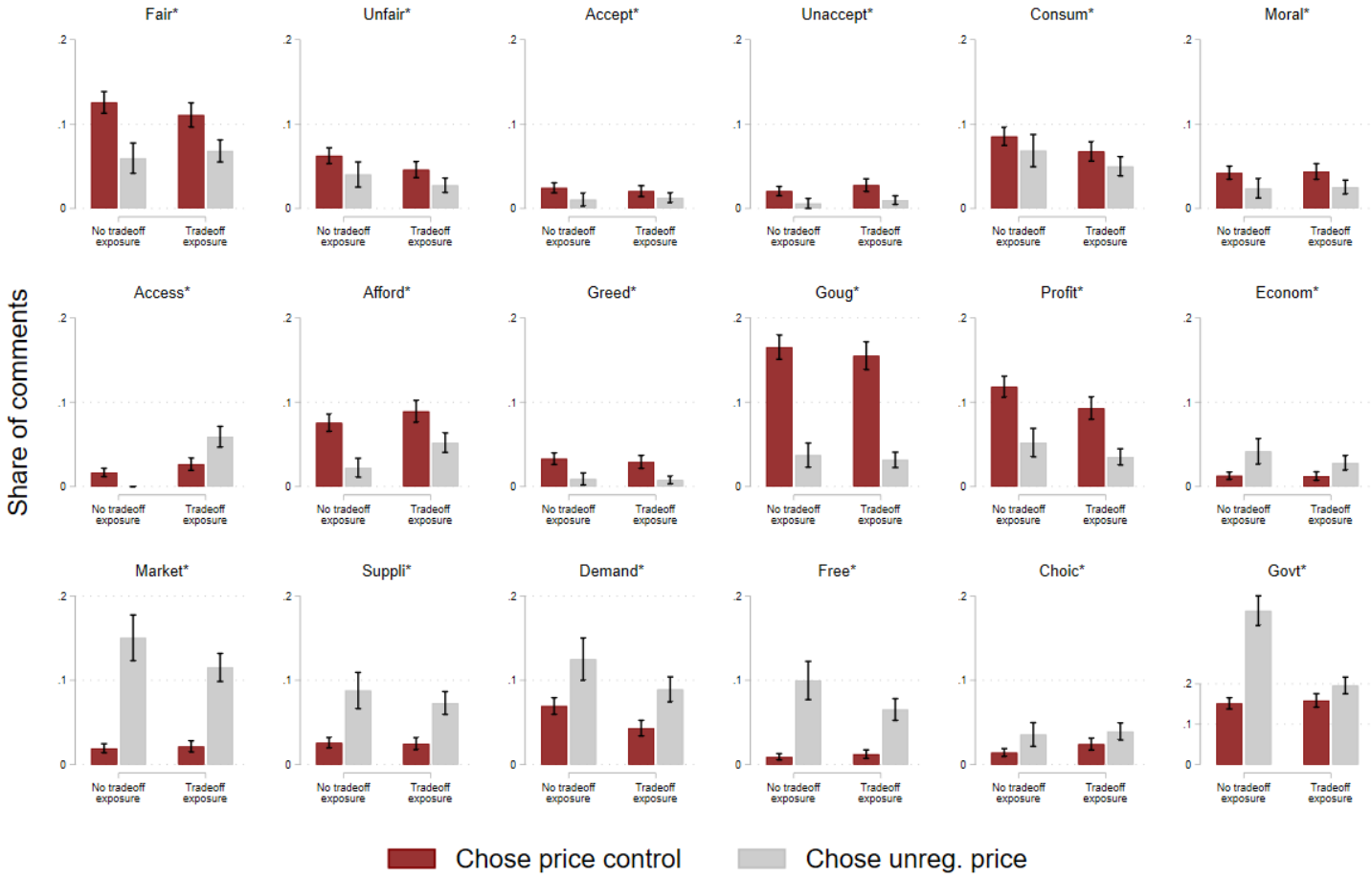
The sequence in the figure starts with terms that pertain to potential moral concerns, such as fairness, access, and exploitation, and potentially negative connotations of the company’s intents: Fair*, Unfair*, Accept*, Unaccept*, Moral*, Access*, Afford*, Greed*. Opponents of unregulated prices frequently use terms such as (Un)fair*, Moral* and Afford* to explain their motivations. Supporters of unregulated prices use these terms much less often. We then consider terms that refer more directly to economic considerations: Goug*, Profit*, Econom*, Market*, Suppli*, Demand*, Free*, Govt*. Supporters for unregulated prices use terms such as Market*, Free*, Suppl*, and Demand* much more frequently than opponents. Arguments in favor of allowing prices to increase focus on the role and functioning of a market economy. Conversely, supporters of price controls employ terms related to the functioning of the market that usually have a more negative connotation, such as Goug* and Profit*.

Consistently with the evidence from the analysis of moral reactions and views about the role of markets in society, tradeoff exposure reduces this polarization also in the motivations expressed in the open-text answer. With tradeoff exposure, moreover, those who selected the unregulated price option mention the word “access” significantly more often than when tradeoffs are not explicit.

This evidence suggests that mentioning the greater availability of a product (either in the high-demand market or at a later time) is a key factor in the decision to support unregulated prices. The relatively frequent mention of Profit* by those who oppose unregulated prices might indicate an aversion to companies’ exerting market power. The motivation for this aversion, in turn, may be in terms of market inefficiencies or on moral grounds.[21]

[21] Appendix Figure B11 shows word frequencies for respondents assigned to market scenarios without reasons for price increases. Supporters of unregulated pricing when no context was provided focus more on ideological arguments than those who saw scenarios with reasons for price increases but without tradeoffs. They emphasize the positive role of markets and the value of freedom. These findings further suggest that an "economics textbook" perception of prices is not immediate for most respondents, regardless of the context or reasons provided for price changes.

Figure 5: Share of comments including keywords, by tradeoff exposure and scenario choice



Notes: The figure reports the share of open comments by respondents that contained the term above each graph. The comments are grouped by the respondents' scenario choice and by whether they evaluated scenarios with or without tradeoff exposure. We used the Stata command ngram to extract all words and determine whether each of them was present in a comment (Schonlau et al. 2017). The ngram package includes a stemming procedure on which we relied, and a list of stop words that we excluded. We also limited the search to words of at least four letters. The title above each graph reports the stemmed version of each group of words. For example, "Accept*" includes such words as accept, accepted, acceptable. The error bars represent 95% confidence intervals.

In Figure B12 of the Appendix, we show that respondents use terms that might imply the consideration of market structure, such as Monopoli*, very rarely (less than 1% of the comments, with no discernible difference across conditions and pricing regime choice); the considerably more frequent use of terms referring to fairness and exploitation suggests that the reference to profits might indicate opposition to an uneven or unfair distribution of gains, with consumers or patients being unjustly penalized.

Additional analyses of frequent two-word expressions or bigrams (excluding stop words) show that respondents who support price controls use the expression "take advantage" often. Thus, the word "advantage" has a specific meaning in these comments, related to concerns for the exploitation of customers. The terms Suppli* and Demand* occur frequently together in comments by supporters of unregulated prices, again indicating the specific way in which these two words are employed, i.e., to indicate the standard operating of "supply and demand" as the way in which prices should be determined. The general term "free" often appears in combination with "markets" in the comments of unregulated price supporters, strengthening our previous findings that a pre-existing pro-market ideology strongly relates to the support of unregulated prices. Again, the frequency of use of these expressions is more extreme when tradeoffs are not mentioned.[22]

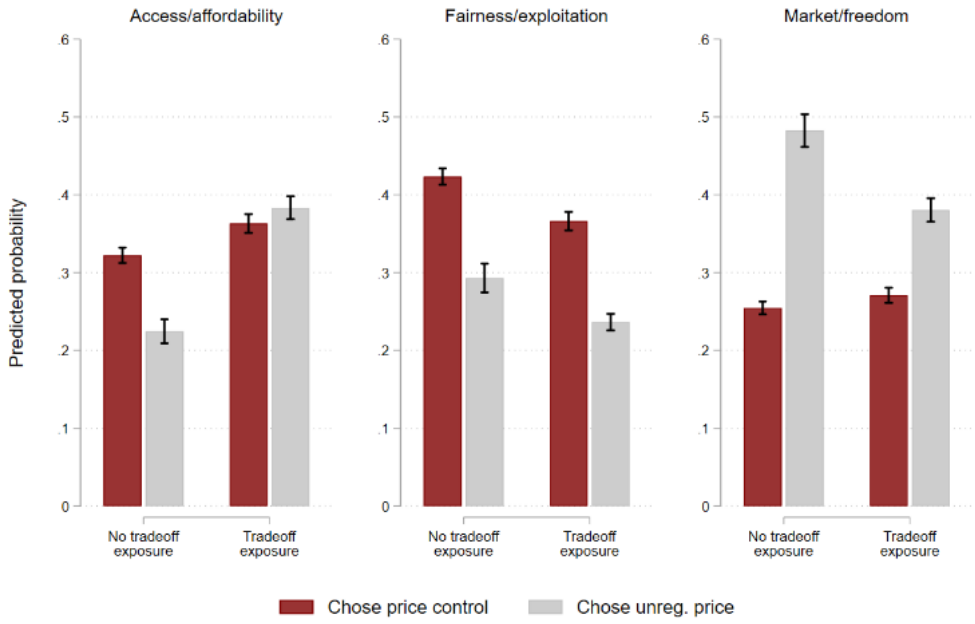
We further extend the analysis to assess whether, more generally, participants who support the same regime make considerations that are more generally similar. We perform topic modeling analysis (Latent Dirichlet Allocation, LDA) to identify what the overall major topics in the comments are.[23] We experimented with setting different numbers of topics in the procedure; we found that assuming four or more topics resulted in overlapping sets of characterizing words, making it difficult to infer an underlying argument. With three topics, the main keywords in each of them are different enough (see Table B6 in the Appendix) to allow us to establish different motives: we label them "access/affordability", "market/freedom", and "fairness/exploitation". Figure 6 shows when not exposed to tradeoffs, supporters of price controls and unregulated prices differ in the arguments they raise to motivate their choices, with supporters of price controls being

[22] Figure B13 in the Appendix displays this additional analysis. Table B7 shows the relative frequency of use of the most frequent 2-, 3- and 4-grams, conditional on the presence of a word composing that N-gram in a comment; for example, if a comment includes the word "afford", the figures indicate the frequency with which that word occurs with "able" preceding it, as in the expression "able to afford". In this particular case, of all the cases where participants use Afford*, they use the expression "able to afford" 12% of the times; when they use Advantag*, in about 77% of the cases they are employing the expression "take advantage", and when they use Free*, the word occurs in the expression "free market" 66% of the times.

[23] We use the Stata command ldagibbs (Schwarz 2018).

much more focused on arguments about fairness, exploitation, and affordability. In contrast, motivations based on the functioning of markets and freedom strongly dominate the open answers of those who support unregulated prices. The exposure to tradeoffs significantly softens the differences in arguments between the two groups.[24]

Figure 6: Estimated probability that a topic appears in an open comment, by scenario choice and exposure to tradeoffs in wave 1



Notes: The graphs report the estimated probability that a topic appears in a comment. The responses are grouped by scenario choice of the respondents and whether the respondent reads scenarios with or without salience to tradeoffs. We applied Latent Dirichelet Allocation (LDA) to the text of all answers to the open-ended question in the survey that asked to motivate the fairness and morality judgments for each version of a scenario, and the choice of one of the versions. We used the ldagibbs command in Stata (Schwartz 2018). See Appendix Table B7 for more details.

Finally, the relatively high frequency, of terms such as fair, moral, or government in the open-text answers, which were also present in the survey's scenario descriptions and moral assessment questions, may raise concerns about experimenter effects or social desirability biases, and that the reported motivations might not accurately reflect what actually drove the respondents' views and choices. However, this is unlikely to be the case in our context, for several reasons.[25] First, the

[24] Findings from a Latent Semantic Analysis provide further evidence that that respondents bring similar and consistent motivations for their choices, and these arguments are different, in content and nature, by tradeoff exposure condition and scenario choice. Those who expressed a preference for unregulated prices are, as a group, especially consistent and homogenous in their motivations (See Appendix Figure B14).

[25] Studies in political science and economics show that experiment demand effect are likely to be modest, both in incentive and non-incentivized surveys and experiments (De Quidt et al. 2018, Mummolo and Peterson 2019).

survey was anonymous, which alleviates any pressure participants might feel to answer in a way that pleases the interviewer. Second, a third-party firm ran the survey, thus adding distance between the researchers and the participants. Third, it is not clear in what direction demand effects may have influenced the responses, as the nature of any potential pressure is uncertain. This is especially true in a between-subject design like ours, where respondents read versions of the scenarios either with or without salient tradeoffs. If they had received both versions (as in a within-subject design), they may have inferred the intentions of our study. Fourth, the textual analysis itself, despite the frequent use of certain terms, does not support a significant impact of demand effects. For example, respondents use the term "fair" in specific ways that we did not indicate in the survey, such as in reference to exploitation and the possibility of taking advantage of consumers. Additionally, participants frequently mention other non-obvious terms like gouge, profit, market, and free, which were not present in the survey text. The content and topics of the comments vary according to the assigned conditions and the choices of the respondents; if demand effects were prevalent, we would have seen a more uniform use of terms mentioned in the questions. More generally, although we find large and systematic differences in the use of certain words and expressions, the frequency of these characterizing terms is never extremely high; respondents use a diverse vocabulary that is not restricted to the terms we employed in the preceding questions.[26]

4.2 Interpreting the tradeoff, cost, and pandemic effects

Appendix Figure B18 reports the relative frequency of use of the terms "cost" and "pandemic" in the comments, according to the assignment to a condition with or without cost factors, or to a condition that referred to a pandemic being at the origin of the sudden demand increases. In both cases, we want to assess whether respondents actually paid attention to these details of the texts. Recall that there were differences in preferences for unregulated prices according to whether a scenario explicitly mentioned that the company was incurring higher unit costs to produce and distribute the extra quantities. Conversely, framing the scenarios in a pandemic context did not

[26] Appendix Figures B15 and B16 show the correlation between the score of relative fairness to consumers and moral acceptability of the unregulated price scenario, respectively, and the share of comments that included certain terms. The correlations of the relative ratings with terms reported in the moral reaction questions, such as Fair*, Moral*, Accept*, and Unaccept*, are low. In contrast, there are stronger associations between these relative moral ratings and the use of other terms, such as Goug*, Profit*, Market* and Free*. Overall, these findings support our claim that demand effects do not compromise our study and the interpretation of the results.

have significant effects. The lack of this latter effect suggests that the respondents' preferences are general and not specific to health emergencies. An alternative explanation, however, is that conducting the survey *during* a disease pandemic might have made all respondents prone to interpret the scenarios as related to the pandemic itself, regardless of whether we mentioned it or not. The evidence reported in Appendix Figure B18 suggests, first, that respondents did pay attention to those experimental manipulations: they mentioned the words cost and pandemic much more often in the salient cost and pandemic conditions, respectively. The unequal frequency with which respondents used the term pandemic in the pandemic and no-pandemic conditions, and in particular the very rare occurrence of this term in the no-pandemic condition (only 1.5% of the comments), further suggests that living through a pandemic, per se, was not relevant for respondents as far as our survey was concerned. The term "covid" appears only in a handful of comments, moreover. As such, we conclude that the lack of a pandemic effect in our survey is more likely to indicate that the preferences that the respondents expressed have a more general valence.

5. The effect of tradeoff exposure within subjects

Our primary analyses rely on between-subject variation, where we estimate a large positive effect of tradeoff exposure on support for unregulated prices thanks to the random assignment of each respondent, in wave 1, to a scenario with or without tradeoff exposure. We can use the evidence from wave 2 to compare the between- and within-individual effect. Recall that respondents in wave 2 of the survey received the same scenario they saw in wave 1, except that the tradeoffs were salient to every respondent in this second round. All other scenario features were the same in both waves; as such, our specific interest is in comparing the tradeoff exposure effects in the between- and within-subject analyses. Appendix Figure B19 shows that support for unregulated pricing for respondents who saw a scenario without salient tradeoffs in wave 1 was about 20% in that wave and 40% in wave 2. The support for unregulated pricing by the respondents assigned to scenarios with salient tradeoffs in both the first and second wave was around 40% in each wave.

In the first column of Table 4 we report, for comparison, the parameter estimates from our main regression specification for wave 1 -- the same as in column 1 of Table 3. The estimates in column (2) are from the same model, but the sample includes only respondents who participated in both waves. The estimates of the tradeoff effect are very similar (22.77 and 23.17, respectively).

Table 4: Support for unregulated price scenario in waves 1 and 2: Regression estimates

	Outcome variable = 100 if chose Unregulated price, 0 if chose Price control			
Sample:	All respondents to Wave 1	Respondents to Wave 1 who participated in Wave 2	Respondents to Waves 1 and 2	
	(1)	(2)	(3)	(4)
Drug	-18.80***	-19.01***	-16.81***	
	(1.54)	(2.52)	(2.12)	
Sanitizer	-11.27***	-10.31***	-6.66***	
	(1.58)	(2.61)	(2.23)	
Moisturizer	-7.17***	-6.28**	-7.11***	
	(1.61)	(2.63)	(2.19)	
Salient tradeoff	22.77***	23.17***	23.06***	17.08***
	(1.09)	(1.77)	(1.77)	(3.13)
Cost increase	4.74***	2.86	5.58***	
	(1.09)	(1.78)	(1.50)	
Pandemic	-1.59	-5.07***	-5.52***	
	(1.09)	(1.77)	(1.50)	
Canadian	-2.58**	-2.81	-2.10	
	(1.09)	(1.78)	(1.51)	
Constant	29.63***	31.77***	29.15***	23.46***
	(1.59)	(2.61)	(2.31)	(1.70)
Individual fixed effects				x
Observations	6,760	2,538	5,076	5,076
R-squared	0.084	0.086	0.063	0.669

Notes: In the second survey wave, all participants read scenarios with salient tradeoffs. The parameter estimates are from OLS regressions. Column (1) displays the same estimates as in column (2) of Table 2. Column (2) reports estimates from the same econometric specification as the estimates in column (1) but is limited to the responses, in wave 1, of the participants who took part in the survey in both waves. The estimates in columns (3) and (4) are from a regression that includes data from both waves, with two observations (one per wave) for each participant. Because we multiply the outcome variable indicator by 100, the reported figures correspond to estimated percentage point changes. Robust standard errors for the estimates in columns (1) and (2), and clustered by respondent for the estimates in column (3) and (4), are in parentheses. * p<0.1, ** p<0.05, *** p<0.01.

Column (3) displays results from a regression with data from both waves, again including only respondents who participated in both surveys. Because all respondents in wave 2 saw scenarios with salient tradeoffs, the variation in tradeoff exposure from wave 1 identifies the coefficient of interest—a within-subject variation.[27] Again, the estimated effect of tradeoff exposure (23.06) is

[27] Let $Y_{WT} = \alpha + \beta TO + \gamma W2$, where $TO = 1$ if the observed scenario includes salient tradeoffs, and zero otherwise, and $W2 = 1$ if the observation is in wave 2 and is zero if in wave 1. This implies that $Y_{W2=0,\,TO=0} = \alpha$; $Y_{W2=0,\,TO=1} = \alpha + \beta$; $Y_{W2=1,\,TO=1} = \alpha + \beta + \gamma$. Note that there are no observations with $W2 = 1$ and $TO = 0$. Therefore, the difference-in-differences of interest is $(Y_{W2=1,\,TO=1} - Y_{W2=0,\,TO=0}) - (Y_{W2=1,\,TO=1} - Y_{W2=0,\,TO=1}) = (\alpha + \beta + \gamma - \alpha) - (\alpha + \beta + \gamma - (\alpha + \beta)) = \beta$, that is, the coefficient on the salient tradeoff indicator TO.

very similar to those in columns 1 and 2. In a model that includes individual fixed effects, the estimated effect of the salience of tradeoffs is 17.08 (column 4). Overall, the effect of the exposure to tradeoffs on the approval of unregulated pricing is similar between and within participants.[28]

6. An incentivized donation experiment

In our incentivized donation module in the second round of the survey, respondents had the opportunity to earn an extra $1 if they allowed the researchers to donate $1 to the Future of Freedom Foundation (FFF). This organization supports free markets, believes that the market price is always "just," and is against regulations such as price caps in emergency situations. Thus, respondents who did not allow the researchers to donate effectively paid a monetary cost to avoid supporting unregulated pricing.

Appendix Figure B20 shows the donation rates by scenario choice. The low overall donation rate is consistent with the aversion to unregulated prices that most respondents expressed in the survey. Moreover, respondents who chose the price cap in our survey experiment were less likely to allow the researchers to donate to FFF than those who chose the unregulated price option (30% versus 40%; *p*-value of the difference in proportions < 0.01). Using information from both waves, Figure B21 in the Appendix shows that those who supported price controls in both survey rounds (about 46% of participants) had a significantly lower propensity to donate. Their repeatedly stated opposition to letting prices adjust freely thus corresponds to a higher willingness to forgo the bonus payment to avoid providing financial support to a pro-market foundation.[29]

7. Conclusions

"If the one man derives a great advantage by becoming possessed of the other man's property, and the seller be not at a loss through being without that thing, the latter ought not to raise the price, because the advantage accruing to the buyer, is not due to the seller, but to a circumstance affecting the buyer." Thomas Aquinas, Summa Theologica, 1485.

"Besides, as there can be no other measure set to a merchant's gain but the market price where he comes, so if there were any other measure, as 5 or 10 per cent as the utmost justifiable profit, there would be no commerce in the world, and mankind would be deprived of the supply of (…) mutual conveniences of life." John Locke, Venditio, 1695.

[28] Appendix Figures B15 and B16 report findings from text analyses of the open comments in waves 1 and 2 together, limited to the respondents who participated in both waves. The findings are similar to those reported in the main text for the sample of all participants in Wave 1.

[29] Those who agreed to support the FFF also reported stronger pro-market attitudes than those who did not agree to the donation. There was no difference in donation frequency by income of the respondents.

The findings from our survey experiment support the view that people attribute moral significance to prices, rather than seeing them merely as indicators of relative scarcity. Price surges in response to demand increases receive widespread opposition and provoke moral aversion, primarily due to concerns about fairness and the exploitation of consumers. Furthermore, ideological beliefs regarding the role of markets and government are strongly associated with attitudes toward price surges. However, when respondents are exposed to the economic tradeoffs of unregulated pricing versus price controls, public acceptance of price surges in response to demand shocks increases significantly, and people's moral reactions become more positive and less polarized. Because in our "laissez faire" scenarios higher prices resulted in additional supply, we interpret the results as indicating that people are more likely to accept price surges and express less radical ethical judgments about them if those surges eventually lead to greater product availability. Despite the large positive impact of cost-benefit considerations on the acceptance of the free price mechanism, however, most respondents still did not support a laissez-faire approach to demand surges. This highlights the significant gap between the utilitarian perspective implied by the standard economic concept of efficiency and the more complex "moral compass" that the public follows.

There are several possible explanations for the influence that our manipulation had on the respondents' attitudes. First, individuals may not be fully aware of the tradeoffs involved in price surges, and exposure to these mechanisms could lead to increased support for unregulated price increases. Dal Bó et al. (2018), for example, find that individuals may fail to consider equilibrium effects and reject policies that would be beneficial in the broader economic context. Andre et al. (2023) show that lay-people have simpler mental models of economic phenomena compared to experts. Similarly, Andre et al. (2023) demonstrate that people neglect equilibrium effects in the stock market. Second, respondents may be aware of these tradeoffs but think that they are less significant than those described in our vignettes, possibly because of lower expectations of supply responses. A third interpretation is that respondents may be aware of the economic consequences that the scenarios described, but assign greater weight to economic tradeoffs when these are more salient, thus influencing how they balance fairness, equity, and efficiency in their policy preferences and moral evaluations. Relatedly, Amasino et al. (forthcoming) show that people's decisions and fairness views change after an exogenous manipulation of their attention to

information relevant to the decision.[30] Additionally, Sunstein (2018) suggests that considerations about the costs and benefits of certain policies can reduce the influence of ideology on preferences for different regimes, and Haidt (2012) discusses how people may experience "moral dumbfounding," where they rely heavily on moral intuitions, but making tradeoffs explicit can shift them away from these instinctive reactions. The softening of moral reactions when respondents are presented with tradeoffs may also derive from a greater reliance on "System 2" thinking (Kahneman 2011), which reduces the appeal of pre-existing beliefs, or from a greater willingness to compromise between extreme views (Guzmán et al. 2022; Lieberman and Shenouda 2022).

Our study's main contribution is to demonstrate that economic tradeoffs are a key determinant of public support for price control policies. The implications of this finding, however, depend on their underlying origins, which could be different, for example, for different respondents, and also vary for different types of products. A full identification of these different explanations is beyond the scope of this paper, as doing so would require additional manipulations, such as variations in the size of the supply responses and testing more products and services.

Price surges do not occur only in response to emergencies such as pandemics or natural disasters. From ride-sharing companies to airlines, firms increasingly use algorithms that adjust prices based on demand and supply conditions. The growing reliance on algorithmic pricing is likely to increase the frequency of automatic adjustments that conflict with other societal values.[31] On one hand, preventing price surges may be more popular than adopting a laissez-faire approach that leads to widespread social disapproval. On the other hand, highlighting the economic tradeoffs involved in regulating or not regulating prices could reduce opposition when these sudden increases occur, leading to less extreme views on the role of the price mechanism in the economy. This reduction in moral polarization may, in turn, improve the political discourse.

Our research contributes to, and bridges, management theory and practice by offering insights into social perceptions and pricing strategies when markets undergo certain temporary shocks. It shows how describing economic trade-offs can influence public reactions and the demand for regulation. Additionally, our findings on moral opposition to unregulated pricing enhance our understanding of the relationship between widely shared moral values and business decisions. This

[30] More broadly, Parnamets et al. (2015) document the importance of bottom-up attention in their work on support for moral statements, and Li and Camerer (2022) in studies of consumption choices and economic games.
[31] See, for example, Moriarty (2021), PricewaterhouseCoopers (2020), Seele et al. (2021), and Turilliazzi (2020).

is relevant to managers when formulating effective pricing strategies that align with both market efficiency and citizens' expectations.

More broadly, this study enhances our understanding of the interplay between market dynamics, societal ethics, and public policy, particularly the potential tension between economic incentives and ethical or other-regarding motives in shaping effective policy.[32] Recent contributions by Bowles (2016), Sandel (2012) and Satz (2010) posit that although both economic and social or ethical considerations are important, the use of economic incentives can sometimes crowd out or undermine social values. This realization might prompt policymakers to favor government intervention or non-market organizations in resource allocation. These reflections underscore the need for careful consideration of the moral and civic goods at stake, making them highly relevant to our examination of public responses to price surges, especially during crises.

Finally, our study contributes to a growing literature in economics that obtains insights from surveys to address questions that require measuring perceptions, attitudes, and expectations. These constructs are often hard to quantify unless one asks people directly. Although experimental surveys based on hypothetical scenarios have inherent limitations, such as the potential disconnect between reported preferences and actual behaviors, existing studies have shown that with careful choice and order of questions, proper randomization, as well as by complementing survey findings with other types of evidence (e.g., from real-stake experiments or the textual analysis of responses to open-ended questions), surveys provide reliable insights on a variety of topics of policy and managerial relevance, such as views and preferences over tax or trade policies, attitudes toward the regulation of morally controversial transactions (e.g., compensating blood or organ donors or legalizing gestational surrogacy), as well as expectations about inflation or economic growth and beliefs about their causes.[33] These investigations, therefore, can help to shape policy choices that are both evidence-based and "bottom-up" or participatory and, as such, likely more comprehensive and accepted by the public.

[32] See Ambuehl (2017), Bénabou et al. (2020), Elias et al. (2019), Roth and Wang (2020) and Sullivan (2020).

[33] Stantcheva (2021), for example, studies how people understand tax policies and weigh different principles, such as efficiency and fairness. Alsan et al. (2023) and Elias et al. (2019), investigate how concerns about health safety affect attitudes toward temporarily suppressing civil liberties and how social support for payments to kidney donors responds to different hypothesized effects on the number of transplants, respectively. Andre et al. (2024) provide evidence on how people explain rises in inflation. See Stantcheva (2023) for a comprehensive review of survey-based studies in the social science and for guidelines on methodology.

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