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Price Gauging or Market Forces? Fairness Perceptions of Price Hikes during the Pandemic

Avichai Snir
Bar-Ilan University

Daniel Levy
Bar-Ilan University, Emory University, ICEA, ISET at TSU, and RCEA

Dudi Levy
Bar-Ilan University

Haipeng Allan Chen
University of Iowa

Abstract

We report the results of surveys we conducted in the US and Israel in 2020, a time when many prices increased following the spread of the COVID-19 pandemic. To assess respondents' fairness perceptions of price increases, we focus on goods whose prices have increased during the pandemic, including some essential goods. Consistent with the principle of dual entitlement, we find that respondents perceive price increases as more fair if they are due to cost shocks than if they are due to demand shocks. However, we also find large differences across the two populations, as well as across goods.

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Contact: Avichai Snir - avichai.snir@gmail.com, Daniel Levy - Daniel.Levy@biu.ac.il, Dudi Levy - dudilevi1985@gmail.com, Haipeng Allan Chen - haipeng-chen@uiowa.edu.

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"For an economist, one of the most jarring sights during the early weeks of the coronavirus crisis in the United States was the spectacle of bare shelves in sections of the supermarket. There was no toilet paper or hand sanitizer. Pasta, flour, and even yeast could be hard to find in the early weeks of social distancing, as many people decided to take up baking. Of far greater concern, hospitals could not buy enough of the masks, gowns, and ventilators required to safely treat Covid-19 patients. What happened to the laws of supply and demand? Why didn't prices rise enough to clear the market, as economic models predict? A paper that I wrote with my friends Daniel Kahneman, a psychologist, and Jack Knetsch, an economist, explored this problem. We found that the answer may be summed up with a single word, one you won't find in the standard supply-and-demand models: fairness."

Richard Thaler, "When the Law of Supply and Demand Isn't Fair,"
New York Times, May 24, 2020, p. 8

1. Introduction

When and under what circumstances might people interpret a price increase as fair and acceptable is an important question in behavioral economics. Starting with Okun (1981), economists have been studying the effects of fairness perceptions on consumer markets. For example, Blinder et al. (1998) identify consumer antagonization as one of the main reasons for price rigidity.

In a series of papers, Levy and Young (2004, 2021) and Young and Levy (2014) document a 74-year-long nominal price rigidity of the Nickel (5¢) Coke during 1886–1951, which, they argue, was a result of the Coca-Cola Company's reluctance to increase the price. The Company's concern was that Coke's price increase would antagonize its loyal consumers, in line with the conclusions of Okun (1981) and Blinder, et al. (1998). That is because Coke's price hike would be considered a break in the "implicit contract" the Coca-Cola Company had with the American public, which promised a fixed price, quality, and quantity.

Rotemberg (2005, 2011) develops models in this spirit, in which consumer perceptions of firms' benevolence can have significant macroeconomic effects. Anderson and Simester (2010) offer micro-level evidence of the effects that consumers' fairness perceptions can have on sales volumes.

To understand the determinants of consumers' fairness perceptions, Kahneman et al. (1986a., 1986b) argue that consumers perceive a price increase as unfair when retailers breach the principle of dual entitlement. According to this principle, consumers are entitled to their reference transaction terms and firms to their reference profits. Studies find that consumer perceptions of a price increase also depend on whether the good's quality or production costs have changed, whether the price increase is uniform across consumers, etc.[1]

The COVID-19 pandemic offers an interesting setting for revisiting this question. During 2020, as COVID-19 was spreading, the prices of many goods increased significantly (Cabral and Xu 2021). Indeed, in many countries, there were reports of price gouging, leading to public outcry demanding that firms be punished for unfair price hikes.[2]

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[1] See Urbany et al. (1989), Frey and Pommerehne (1993), Bolton et al. (2003), Xia et al. (2004), Bolton et al (2010), Kalapurakal et al. (1991), Leibbrandt (2020), Friedman and Toubia (2020), and Allender et al. (2021).

[2] For example, according to a report by Public Citizen (2020), "Amazon has misled the public, law enforcement, and policymakers about price increases during the pandemic. Numerous examples of price increases were found on essential products on Amazon.com, some as much as 1,000% over the expected price" (p. 4). Similarly, according to the U.S. PIRG Education Fund (2021) report, in a sample of 750 products sold on the Amazon website, "… 409 saw price increases of more than 20%, and 136 at least doubled in price. Across the 15 product categories, the highest price increases ranged from $13.10 to $4,000" (p. 2). These led to class action lawsuits against Amazon, "… for its unlawful price gouging during the Covid-19

In particular, many complaints were heard concerning the increase in the prices of goods that were seen as essential in reducing the likelihood of contracting the disease, such as face masks and hand sanitizers.

Building on Kahneman et al. (1986a., 1986b), we report the results of surveys that we conducted in the U.S. and Israel, in 2020. In both countries, price increases garnered significant public attention. In the surveys, we asked respondents about their perceptions of price increases, focusing on goods whose prices have increased during the pandemic, *including some essential goods*.

We contribute to the literature by studying the effect of a product's importance on the perceived fairness of its price increase. Further, we study the effect of products' importance at a time when consumers faced price increases for products that were seen as essential and, therefore, were most likely to perceive the price increases as unfair. Thus, our results provide evidence of the relevance of the principle of dual entitlement under extreme circumstances.

Consistent with the principle of dual entitlement, we find that respondents perceive price increases as fairer if they are due to cost shocks than if they are due to demand shocks, although in some cases, the majority find supply-driven price increases unfair as well. We find large differences across populations and goods. In the U.S., consumers' unfairness perceptions of price increases are positively correlated with the goods' importance. In Israel, the importance of the goods also plays a role, but it seems that Israelis are also affected by some other norms.

In section 2, we describe the methodology and the data. In section 3, we present the results. We conclude in section 4. In the Appendix, we include the survey questionnaires we used in this project and report the results of some robustness analyses.

2. Methodology and data

In the U.S., we conducted a survey via Amazon mTurk, restricting our sample to U.S. residents. In Israel, we conducted the survey via a business news website, www.bizportal.co.il, and through social media forums.[3] We conducted the survey in November–December 2020, a period of significant restrictions, when many prices were still above the pre-pandemic levels. We have 904 respondents in the U.S. and 1,043 in Israel. In Israel, 45 respondents were recruited via a business news website, and the remaining 998 via social media forums. Table 1 presents summary statistics.

The survey contained 5 questions about goods whose prices have increased. The participants were asked to indicate for each good, whether it is *completely fair*, *acceptable*, *unfair*, or *very unfair* (Kahneman et al., 1986a). In the U.S., the goods chosen were facemasks, hand sanitizers, toilet paper, chicken, and Dijon mustard. The first three items were chosen because they were viewed as particularly essential during the pandemic, and the prices of all three had increased significantly. The price of chicken had also increased

pandemic," (https://www.hbsslaw.com/sites/default/files/case-downloads/amazon-price-gouging/2021-10-22-first-amended-complaint.pdf, accessed on July 7, 2024). COVID-related price gouging events were reported in many other countries as well, prompting the intervention of the relevant public offices. Examples include Australia (source: https://www.consumer.vic.gov.au/resources-and-tools/advice-in-a-disaster/price-rip-offs, accessed on July 7, 2024), South Africa (source: https://www.dmllaw.co.za/covid-19-price-gouging-panic-buying-and-the-spotlight-on-suppliers-the-minister-of-trade-and-industry-has-spoken/, accessed on July 7, 2024), and Turkey (source: https://erdemlegal.com/en/prohibition-on-stockpiling-and-unjust-pricing-within-the-scope-of-covid-19-measures/, accessed on July 7, 2024).

[3] The survey in Israel was conducted in Hebrew. See Appendix A for the English version which we used in the U.S. The data file is available from the authors upon request.

during the pandemic, but unlike the other products, there were no reports of excess demand for chicken.[4] We chose Dijon-mustard as a control because it experienced no shocks to either demand or supply during the pandemic. In Israel, we replaced toilet paper with eggs, because in Israel there was no shortage of toilet paper, but there were significant shortages of eggs.[5]

Table 1. Descriptive statistics of the U.S. and Israeli sample participants

	U.S.	Israel
% Women	64.38%	65.54%
% Married	42.48%	45.25%
% Employed	77.54%	74.40%
% Academics	46.90%	36.82%
% Studied economics	59.49%	46.60%
Average age	38.60	32.37
No. of respondents	904	1,043

Notes: % of women, married, employed (at least part-time), academics (BA degree or higher), and studied economics (at least one college-level course in economics), are their shares in the corresponding sample. The average age indicates the participants' average age in the corresponding sample. In Israel, 45 respondents were recruited via a business news website, and the remaining 998 via social media forums.

We employed three scenarios for each good. In one scenario, the price increase was due to an increase in demand. In the second, the reason for the price increase was supply shortages due to COVID-19 lockdowns. In the third, no reason was given ("unknown reasons" scenario). In all cases, the price increase was about 30% of the pre-pandemic level. Each respondent saw only one (randomly assigned) scenario for each question.

3. Econometric estimation results

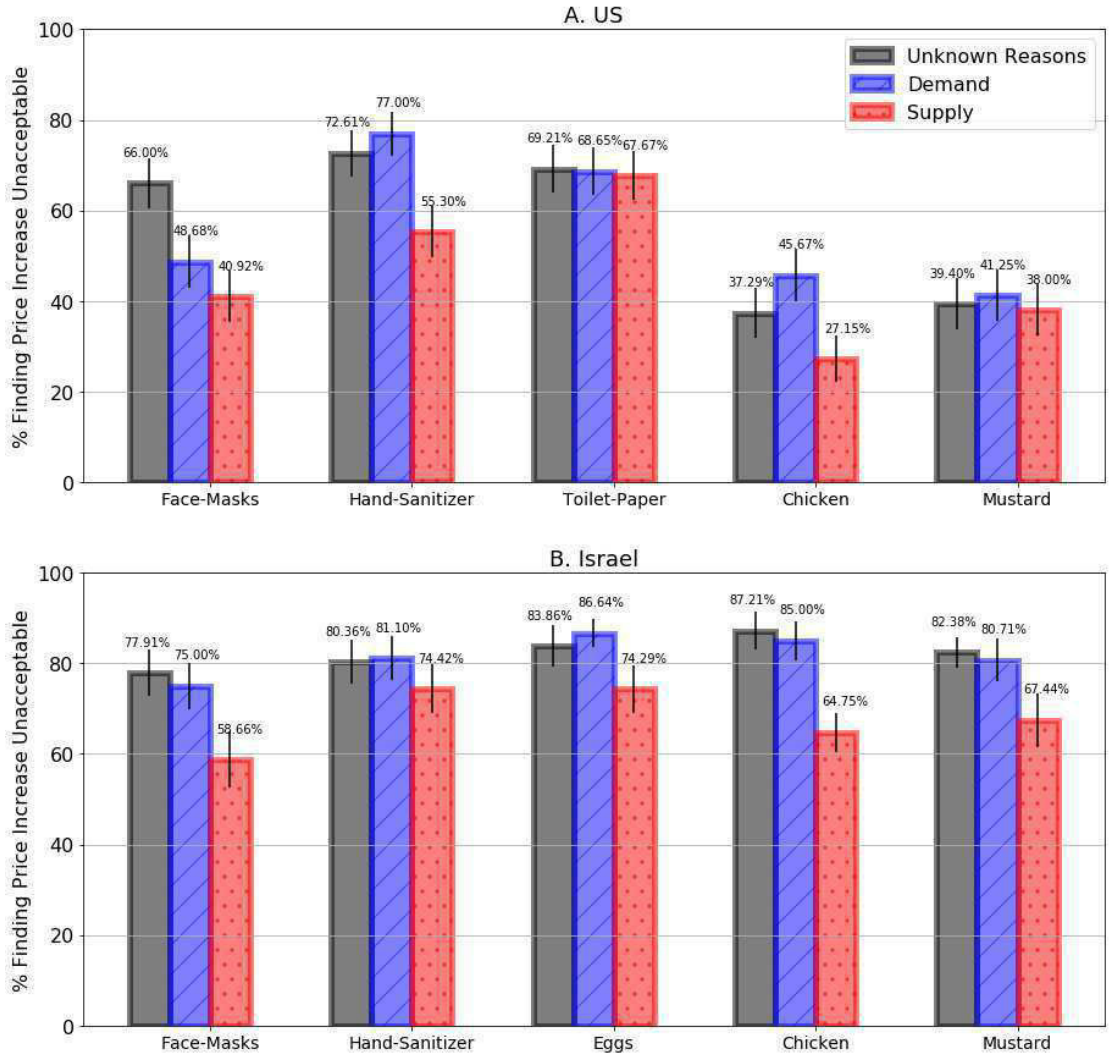
Following Kahneman et al. (1986a), for each scenario, we group the participants into two categories: those who judge the price increase as *acceptable* ("completely fair" or "acceptable") and those who judge the price increase as *unacceptable* ("unfair" or "very unfair"). Figure 1 shows the % of participants who thought the price-hikes were *unacceptable* with 2-standard-error confidence bounds.

[4] See, for example, Tara Law, *Time Magazine*, April 30, 2020, "COVID-19 Meat Shortages Could Last for Months. Here's What to Know Before Your Next Grocery Shopping Trip," accessible at https://time.com/5830178/meat-shortages-coronavirus/, accessed on July 7, 2024.

[5] See, for example, Avi Dovrat and Avi Waksman, *Haaretz*, April 5, 2020, "Amid Nationwide Shortage, Israelis Scramble for Eggs," accessible at www.haaretz.com/israel-news/.premium-amid-nationwide-shortage-israelis-scramble-for-eggs-1.8742526, accessed on July 7, 2024. In Israel, the price of regular, farm-fresh cage eggs (the most widely consumed eggs) is capped by the government. Consequently, stores cannot raise the price of these eggs without risking a fine. However, the shortage led to the emergence of a "black market," with farmers selling eggs directly to consumers at prices higher than the maximum price set by the government. The survey questions on eggs referred to this black market. The demand version of the question read: "The price of a package of 12 eggs is capped by the government at NIS 11.30. Before the Passover, there was an increase in demand leading to egg shortages in stores. On the roadsides, it was possible to buy a package of eggs for NIS 15." See Appendix A for the "supply-scenario," and the "no-reason scenario."

We report six findings. First, Israeli respondents find price increases less acceptable than U.S. respondents. Across all scenarios and all goods, on average, 77.44% of the Israelis find price increases unacceptable, compared to 45.51% of the U.S. respondents. The difference is statistically significant (Wilcoxon rank-sum $z = 36.71, p < 0.01$).

Figure 1. Percentage of participants that find price increases unacceptable



Note: The small vertical lines indicate 2-standard error confidence bounds.

Second, consistent with the principle of dual entitlement, for all products and in both countries, participants perceive supply-driven price increases as more acceptable than demand-driven price increases or price increases for unknown reasons. In the U.S., across all goods, 45.71% of the respondents perceive a supply-driven price increase as unacceptable, compared to 56.27% that perceive a demand-driven price increase as unacceptable (Wilcoxon rank-sum $z = 3.30$, $p < 0.01$), and 56.90% that perceive a price increase for unknown reasons as unacceptable (Wilcoxon rank-sum $z = 3.49$, $p < 0.01$).

Similarly, in Israel, across all goods, 67.52% of participants perceive a supply-driven price increase as unacceptable, compared to 82.41% that perceive a demand-driven price

increase as unacceptable (Wilcoxon rank-sum $z = 9.34$, $p < 0.01$), while 82.32% perceive a price increase that is due to unknown reasons as unacceptable (Wilcoxon rank-sum $z = 9.24$, $p < 0.01$).

This finding is important because it suggests that the principle of dual entitlement holds even in extreme circumstances. Although the COVID-19 period was associated with price increases that drew a lot of public attention and led to an intense debate about price hike unfairness, we find that consumers still perceived price increases driven by supply shortage as fairer than price increases driven by excess demand. Further, this result holds even though the participants might have been aware of the sentiments often expressed in the popular press, which attributed the price increases to excess demand and called on the government and the regulatory authorities to intervene. The differences that we find between the supply and demand conditions are, therefore, effects that exist despite any preconceived notions that the participants might have had about price increases being driven by excess demand.[6]

Our third finding, however, shows that during the COVID-19 pandemic, although supply-driven price increases were perceived as more acceptable in comparison to demand-driven price increases or price increases due to unknown reasons, in some cases, most of the respondents reported perceiving the increases as unacceptable irrespective of their cause. In the U.S., 55.30% and 67.67% of the respondents perceive supply-driven price increases of hand sanitizers and toilet paper, respectively, as unacceptable. Both values are significantly greater than 50% (Pearson $\chi^2 = 3.19$ and 36.75, with $p < 0.08$ and $p < 0.01$, respectively). In Israel, for all goods, the percentage of the participants that perceive supply-driven price increases as unacceptable is always significantly greater than 50% (Pearson $\chi^2 \geq 7.62$ in all cases, $p < 0.01$).

Thus, even though participants perceived supply-driven price increases as fairer than demand-driven price increases, they still perceived some supply-driven price changes as unfair. Thus, it seems that in some situations, and at least for some products, consumers perceive price increases as unfair regardless of the reason.

A caveat to this interpretation is that if some participants were affected by the media reports about unfair prices, then they might have perceived all price increases as driven by demand shocks regardless of the reasons given in the questions. The presence of some participants with such preconceived ideas could tilt the average differences between the demand and supply scenarios downwards. This could also explain why we find that for some products, participants perceive all price increases as unfair even though we find differences between the demand and supply treatments.

Fourth, the differences between the fairness perceptions of price increases that are demand-driven and that are due to unknown reasons are not statistically significant. In the U.S., the Wilcoxon rank-sum z is 0.35 ($p > 0.72$). In Israel, it equals 0.07 ($p > 0.94$). This finding is consistent with Bieger et al. (2010), who find that consumers perceive unexplained price increases as at least as unfair as price increases that are driven by excess

[6] Another factor that might have worked against finding even stronger differences between the supply and demand effects, is the wording of the supply treatment in our survey questionnaire. In the supply treatment, we wrote that "several factories producing ____ were temporarily closed." We believed that participants would interpret this as suggesting that there is less supply, leading to a price increase. However, if participants believed that production could be increased with constant returns to scale, then they could have concluded that the retailer is taking advantage of an additional market power, which is unfair. The differences between the supply and demand treatments suggest that most of the participants interpreted the question as suggesting a decrease in supply, but we cannot rule out the possibility that different wording might have resulted in an even greater difference.

demand. A possible explanation is offered by Campbell (1999) and Bolton et al. (2003). Both papers report that when assessing the fairness of a price increase, consumers tend to take into account the firm's motives. It is, therefore, possible that when consumers have no information about the firm's motives, they infer that the firm is not transparent (e.g., it is hiding information) and conclude that the price increase is unfair.

Fifth, in the U.S., there is large variability across goods in the respondents' perceptions of the price increase fairness. Combined across all 3 scenarios (demand-driven, supply-driven, and unknown reasons), 51.88%, 68.25%, 68.47%, 36.62%, and 39.60% of the participants view the price increases of facemasks, hand sanitizers, toilet papers, chicken, and Dijon mustard, respectively, as unacceptable. In Israel, the variability is smaller, but still nontrivial. Across the three scenarios, 70.71%, 78.66%, 82.65%, 75.74%, and 78.24% of the participants view the price increases of facemasks, hand sanitizers, eggs, chicken, and Dijon mustard, respectively, as unacceptable.

These results underscore a difference between the U.S. and the Israeli participants. When we focus on the three products that received significant public attention during the COVID-19 pandemic, face masks, hand sanitizers, and toilet paper/eggs, we find that in both countries, the majority of the participants perceived their price increases as unfair. However, U.S. participants did not perceive the price increases of chicken and Dijon mustard as particularly unfair, while Israeli participants perceived them as unfair as the increases in the prices of hand sanitizers and eggs. In other words, the differences between the U.S. and the Israeli participants are particularly striking when we focus on products that did not get much public attention during the pandemic.

Our sixth finding emphasizes this point further. When we include all products, U.S. participants' views towards price increases are more related to the importance they attach to the goods (Kalapurakal et al. 1991) than the attitudes of Israeli participants. To explore this issue, we asked the respondents (*after* they had finished answering the fairness questions) to rate on a scale of 1–5 how much importance they attach to each good.

Table 2. Importance scores of the goods

	US	Israel
Facemasks	3.61 (1.311)	3.39 (0.833)
Hand-sanitizers	3.75 (1.197)	2.96 (0.912)
Toilet-paper	4.48 (0.853)	
Eggs		3.37 (0.732)
Chicken	3.46 (1.174)	3.08 (0.852)
Dijon-mustard	1.98 (1.093)	1.60 (0.736)

Notes: The average responses to the question: "On a scale from 1−5, how important are _____ to you?" Standard deviations are given in parentheses.

Table 2 summarizes the results. In both countries, we find a large variation in the importance the respondents attach to the goods. In the U.S., toilet papers are ranked as the most important with an average score of 4.48, while in Israel—facemasks, with an average score of 3.39. In both countries, Dijon mustard is ranked as the least important, with an average score of 1.98 in the U.S., and 1.60 in Israel.[7] Thus, in both countries, the highest average score of importance is more than twice the lowest average score.

To examine the correlation between fairness perceptions and the importance people attribute to the goods, we estimate a set of linear regressions with random effects:

$$unfairness_i = \beta_0 + \beta_1 importance\ score_i + \beta_2 Israeli\ sample_i + \beta_3 importance\ score_i \times Israeli\ sample_i + \sum \gamma_j Good_{j,i} + \sum \delta_k Reason\ for\ price\ increase_{k,i} + X'\mu + \varepsilon_i$$

where we cluster the standard errors at the respondent level. In these regressions, the dependent variable, unfairness, is a dummy variable that equals 1 if a price increase is viewed as unfair, and 0 otherwise. The independent variables include the importance score, a dummy for the Israeli sample, an interaction between the importance score and the dummy for the Israeli sample, a series of dummies for the goods, $Good_j$, whose price was increased, where $j \in \{\text{face masks, hand sanitizers, toilet paper, eggs, chicken}\}$,[8] and a series of dummies of the reason for the price increase $Reason\ for\ price\ increase_k$, where $k \in \{\text{unknown , demand}\}$. X is a vector of demographic control variables. In this setting, the base product is Dijon mustard, while the base reason for the price increase is supply shocks.

The estimation results are reported in Table 3.[9] In column 1, we do not include demographic controls. That is, the X vector is empty.

We find that the coefficient of the importance score is positive ($\beta = 0.03, p < 0.01$), suggesting that U.S. respondents consider the importance of the goods when they assess the fairness of the goods' price increase: the more important the good, the more likely they are to perceive a price increase as unacceptable. The coefficient of the interaction of the importance score with the Israeli sample is negative ($\beta = -0.02, p < 0.05$), suggesting that when assessing the fairness of price increases, the goods' importance matters less for the Israeli respondents than for the U.S. respondents. This being said, the sum of the main effect and the interaction term is marginally different from zero ($\chi^2 = 3.39, p < 0.07$), suggesting that the Israeli respondents do care about the goods' importance, even if less than their US counterparts.

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[7] Interestingly, participants in both the U.S. and Israel are not particularly averse to changes in the price of face masks (see Figure 1) although in both countries it is one of the products that they perceive as the most important. A possible explanation is that face masks are a product that most consumers did not use before the outbreak of the COVID-19 pandemic. Therefore, before the pandemic, most consumers were unaware of the prices of face masks.

[8] Unlike other questions, the question on eggs did not explicitly mention the COVID-19 lockdowns. (We thank an anonymous reviewer for noticing this shortcoming.) It instead mentioned the emergence of a black market for eggs. It is, therefore, possible that participants treated this question differently than the other questions. In the appendix, we show that our results are robust to excluding observations pertaining to eggs.

[9] In Appendix B, we repeat the analyses by splitting the Israeli sample into two. The first includes those who participated in the survey we ran via the business news website, while the second includes those who participated in the survey we ran through social media forums. The estimation results remain qualitatively unchanged.

Table 3. Perception of price increase unfairness and the goods' importance

	(1)	(2)	(3)	(4)
Dependent Variable:	Dummy = 1 if a price increase is viewed as unfair, 0 otherwise			
Importance score	0.03***	0.03***	0.02***	0.01*
	(0.006)	(0.006)	(0.007)	(0.008)
Israeli sample	0.34	0.34***	0.19***	0.04
	(0.028)	(0.029)	(0.040)	(0.048)
Importance score ×	–0.02**	–0.02**	0.02*	0.03***
Israeli sample	(0.008)	(0.008)	(0.011)	(0.013)
Facemasks	–0.00	–0.00		
	(0.016)	(0.016)		
Hand-sanitizers	0.12***	0.12***	0.13***	0.13***
	(0.015)	(0.015)	(0.011)	(0.011)
Toilet-paper	0.18***	0.06***	0.18***	0.14***
	(0.020)	(0.017)	(0.016)	(0.017)
Eggs	0.06***	0.18***	0.08***	0.13***
	(0.017)	(0.020)	(0.016)	(0.017)
Chicken	–0.04***	–0.04***	–0.03**	
	(0.014)	(0.014)	(0.013)	
Unknown reason for	0.13***	0.13***	0.13***	0.13***
price increase	(0.010)	(0.010)	(0.011)	(0.012)
Price increase due to	0.12***	0.12***	0.12***	0.11***
demand	(0.009)	(0.009)	(0.010)	(0.012)
Age		0.00	0.00	0.00
		(0.001)	(0.001)	(0.001)
Married		–0.02	–0.02	–0.02
		(0.016)	(0.017)	(0.018)
Employed		–0.02	–0.02	–0.03*
		(0.015)	(0.016)	(0.018)
Academic		–0.02	–0.03	–0.03
		(0.015)	(0.016)	(0.018)
Taken economic		–0.02	–0.03**	–0.03
course		(0.014)	(0.015)	(0.017)
Mother is an academic		–0.02	–0.02	–0.02
		(0.015)	(0.015)	(0.017)
Woman		0.11***	0.11***	0.12***
		(0.015)	(0.016)	(0.017)
Constant	0.29***	0.22***	0.34***	0.45***
	(0.033)	(0.036)	(0.040)	(0.045)
$Overall\ R^2$	0.12	0.13	0.11	0.09
N	9,233	9,233	7,286	5,339

Notes: The table presents the results of regressions with standard errors clustered at the respondent level. The dependent variable in all columns is a dummy variable that equals 1 if the respondent assessed a price increase as unacceptable, and 0 otherwise. Importance score is the respondent's response to the question: "On a scale from 1-5, how important are _____to you?" The Israeli sample is a dummy variable that equals 1 if the respondent took part in the survey in Israel, and 0 otherwise. Importance score × Israeli sample is an interaction term between the importance score and a dummy for respondents participating in the Israeli survey. Facemasks, hand sanitizers, toilet paper, eggs, and chicken are all product dummy variables that equal 1 if the product is facemasks, hand sanitizers, toilet paper, eggs, and chicken, respectively, and 0 otherwise. An unknown reason for a price increase is a dummy variable that equals 1 if the respondent was not given a reason for the price increase, and 0 otherwise. Price increase due to demand is a dummy variable that equals 1 if the

respondent was told that the reason for the price increase is an increase in demand and 0 otherwise. Age is the respondent's age. Married is a dummy variable that equals 1 if the respondent is married and 0 otherwise. Employed is a dummy variable that equals 1 if the respondent is employed full or part-time and 0 otherwise. Academic is a dummy variable that equals 1 if the respondent has a BA or higher degree. Taken economic course is a dummy variable that equals 1 if the participant has taken at least one college-level economics course. Mother is an academic is a dummy variable that equals 1 if the participant's mother has a BA or higher degree. Woman is a dummy variable that equals 1 if the respondent is a woman. In column 3, we exclude observations if the product mentioned in the question was Dijon-mustard. In column 4 we exclude observations if the product mentioned in the question was either Dijon-mustard or chicken. The base group in columns 1 and 2 is Dijon Mustard. The base group in columns 3 and 4 is facemasks. All regressions include random effects for participants.
* $p < 10\%$, ** $p < 5\%$, *** $p < 1\%$.

In column 2, we add further controls. We chose these controls using a forward selection algorithm, using AIC as the criterion for choosing how many variables to add. The controls that we add include the respondents' age, a dummy for married respondents, a dummy for employed respondents, a dummy for respondents with an academic degree, a dummy for respondents who have taken at least one college-level economics course, a dummy for participants whose mother has an academic degree, and a dummy that equals 1 if the participant is a woman.

Interestingly, we find that the coefficient of the dummy for women participants is positive and statistically significant ($\beta = 0.11, p < 0.01$). It, therefore, seems that women view price increases as less fair than men, which is in line with the findings reported in some studies that women often are charged higher prices than men for identical products, a phenomenon known as the "pink tax" (e.g., de Blasio and Menin 2015, Wehner et al. 2017, Klass 2018, and Moshary et al. 2023).[10] Our main results, however, remain unchanged: Adding the control variables does not change the coefficient or the significance of the importance score.

To highlight the role that products perceived as less important may have played in driving the differences between Israeli and U.S. participants, in column 3, we exclude the observations pertaining to questions that dealt with Dijon-mustard, the least important products in both the U.S. and Israeli samples. Once we exclude the observations pertaining to Dijon-mustard, the base group becomes face masks.

We find that once we exclude the observations related to Dijon-mustard, the coefficient of the interaction between the importance score and the Israeli sample becomes positive and marginally significant ($\beta = 0.02, p < 0.10$). In other words, once we exclude the observations pertaining to Dijon-mustard, we find that Israeli participants appear to be as sensitive as (or even slightly more sensitive than) the U.S. participants to the importance of products when they assess the fairness of a price change. It, therefore, seems that both US and Israeli participants care about the importance of a good when assessing the fairness of a price increase, but Israeli participants follow different norms when this concerns an unimportant good. One possible such norm is suggested by Fershtman and Gneezy (2001), who argue that a large share of Israelis hold the view that they should respond aggressively when treated unfairly. It is possible that the Israeli participants perceive a price increase of an unimportant product as an unfair treatment and respond accordingly.

Interpreting this result as suggesting that the difference between Israeli and U.S. participants is driven by products perceived as the least important might be misleading,

[10] The evidence regarding the "pink tax" is mixed, as Moshary et al. (2023) note. For example, Ruffle, et al. (2022) conducted a field experiment in a produce market in Israel and found that vendors offered to women larger and more frequent discounts than to men. Further, they report that the more attractive the female buyers were, the larger and the more frequent discounts they were offered, a phenomenon they term "good-looking prices."

however. This is because the price of Dijon-mustard was not particularly affected by the COVID-19 crisis, while the prices of the other products in the survey increased significantly. Focusing on Dijon-mustard might, therefore, have confounded the effects of perceived importance and perceived unfairness due to the experience with price increases. In column 4, therefore, we exclude observations pertaining to the questions about chicken, because after excluding Dijon mustard, this is the product that is perceived as the least important out of the products that we surveyed.

We find that after excluding observations related to chicken (in addition to Dijon mustard), the coefficient of the importance score becomes marginally significant ($\beta = 0.01, p < 0.10$). The coefficient of the interaction between the importance score and the Israeli sample, on the other hand, becomes statistically significant ($\beta = 0.03, p < 0.01$). Moreover, the coefficient of the dummy for Israeli participants is not statistically significant ($\beta = 0.04, p > 0.34$).

Thus, when we exclude products perceived as relatively less important, the differences between U.S. and Israeli participants become small and statistically insignificant, and Israeli participants are affected by the importance score more than U.S. participants are.

These results should be interpreted cautiously because when we exclude the observations on questions related to Dijon mustard and chicken, we reduce both the sample size and the variability in the importance scores.[11] However, these findings are in line with the explanation we offer above for the differences between the US and Israeli participants. The U.S. participants tend to perceive a price increase as fairer if the product is perceived as unimportant, and as more unfair if the product is perceived as important. Israeli participants also consider the product's importance when considering the fairness of a price increase, but when the products are perceived as unimportant, they seem to be affected by norms prescribing a harsh response to an unfair action by a retailer.

4. Conclusion

We report the results of surveys we conducted in the U.S. and Israel, to assess people's attitudes towards price increases during the pandemic. Consistent with the principle of dual entitlement, we find that respondents perceive supply-driven price increases as more acceptable than demand-driven price increases. In the U.S., price increases are more likely to be perceived as unfair for goods that are perceived as more important.

In Israel, most respondents view price increases in the pandemic as unfair regardless of the reason. This could be related to the deep-rooted sentiments among Israelis that they live in an expensive country, and thus any price increase is unacceptable to them.

Indeed, prices in Israel are on average 20% higher than those in the OECD countries (Avishay-Rizi and Ater 2021).[12] The *Economist* magazine, comparing the cost of living in

[11] In Appendix D, we show that even after excluding the observations related to Dijon-mustard and to chicken, there is still enough variation in participants' evaluations of products' importance. We also find that the importance score of all products, except eggs, varies between 0 and 5. The importance score of eggs varies between 1 and 4. The standard deviations of the importance score reported in Appendix D show reasonable within-respondent variations, which are essential for the estimations in columns 3 and 4 of Table 3. In addition, we find that the within participant variation in the answers on the importance score is quite high. 56% of the participants had a difference of 3 or more between the importance score of the product with the highest and lowest scores.

[12] Source: https://fs.knesset.gov.il/globaldocs/MMM/b42f5020-4ceb-e911-810f-00155d0af32a/2_b42f5020-4ceb-e911-810f-00155d0af32a_11_13731.pdf (in Hebrew), accessed on June 28, 2024. The high cost of living in Israel led to unusually intense public protests in 2011, which became known as the "cottage cheese protests" (Hendel, Lach, and Spiegel 2017).

dozens of cities across the globe, ranked Tel Aviv in 2021 as the most expensive city in the world.[13] Moreover, the August 2023 Annual Report of the OECD presents a comparative price level index, computed as a ratio of purchasing power parities and market exchange rates. At the GDP level, the index measures the differences in the general price levels of the countries covered. The index ranks Israel as the most expensive country among all the OECD member countries.[14]

Although such comparisons are inherently imprecise, they are nevertheless indicative of the high cost of living in Israel, particularly given that it is ranked only 21st among the OECD member countries in terms of households' net adjusted disposable income.[15] Thus, the price level in Israel, both in general and when focusing on its main business hub, Tel Aviv, is high, which along with the low net adjusted disposable income of the households, leads to a relatively low quality of life.[16] For comparison, the OECD ranks the U.S. as 1st in the households' net adjusted disposable income, and 4th in terms of the price level.

Recently, the public sentiments about the cost of living in Israel got so troubling that the Ministry of Economics introduced a regulation requiring "Israeli retailers to place… signs showing the (cheap) international price of a product alongside the price of the same product in the local store… The motivation for the ["shaming"] regulation… was to generate pressure [on retailers] to reduce prices" (Ater and Avishay-Rizi 2022, p. 2).

Future research should study the role of price level in fairness perception further, to improve our understanding of how the principle of dual entitlement is interpreted in different markets depending on consumers' experience with prices. Another venue for future research is the effect of norms on fairness perceptions. Our results suggest that although Israeli participants care about the importance of a good when assessing the fairness of a price increase, their assessment is likely affected by other norms as well.

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[13] Sources: https://www.economist.com/graphic-detail/2021/11/30/tel-aviv-is-the-worlds-most-expensive-city, accessed on June 28, 2024, and https://www.haaretz.com/israel-news/2023-08-27/ty-article/.premium/israels-cost-of-living-is-highest-in-the-oecd/0000018a-378e-d18c-adfa-77dfc6670000, accessed on June 28, 2024.

[14] Source: OECD (2024), Price Level Indices (Indicator), DOI: 10.1787/c0266784-en, available at: https://data.oecd.org/price/price-level-indices.htm, accessed on June 30, 2024.

[15] Source: https://www.oecdbetterlifeindex.org/topics/income/, accessed on June 28, 2024.

[16] We should note that about 25% of Israel's 10 million population lives in the Tel Aviv metro area, i.e., in "the most expensive city of the most expensive country." This underscores further the importance of Tel Aviv's high cost of living for a large share of Israel's population.

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Appendix

Price Gouging or Market Forces?
Fairness Perceptions of Price Hikes during the Pandemic

Appendix A. The Survey Questionnaire

Notes on the questionnaire

The section titles were not included in the questionnaire and thus they were not shown to the participants. We add them here (using a red-colored font) to clarify the questionnaire structure. In the section on the fairness of price increase questions, each participant saw only one scenario for each product. Thus, each participant saw one question on a price increase of face masks, one question on a price increase of hand sanitizers, one question on a price increase of toilet paper, one question on a price increase of chicken, and one question on a price increase of Dijon mustard. The order of the questions and the scenarios were assigned randomly so that each participant saw at most two questions with the same scenario.

Introduction of the Survey

Researchers at the University of Kentucky invite you to take part in a survey on consumer perceptions.

We invite you to assist us in learning about consumer perceptions of product prices. You may not get personal benefit from taking part in this research study, but your responses may help us understand more about purchasing decisions. Some people get satisfaction knowing they have contributed to research that may benefit others.

The survey will take about 5 minutes to complete. There are no known risks to participating in this study. Your response to the survey is confidential. This means no names will appear or be used on research documents. Names will not be used in presentations or publications either. The research team will not know that any information provided came from you, not even whether you participated in the study or not.

Your information collected for this study will NOT be used or shared for future research studies, not even if we remove the identifiable information like your age, gender, or race. The software being used to collect your answers does collect your IP address. These are

used to avoid duplicate answers, and the IP's are deleted from the data that the research team will use to make their analyses.

We hope to receive completed questionnaires from all participants. Your answers are important to us. You have a choice whether or not to complete the survey. You are also free to skip the questions if you do not want to answer them. If you do participate, you are free to stop at any time. If you decide to stop participating after you begin the survey, you can leave early and still get a completion code by contacting the research team at the email listed below.

Please be aware, we make every effort to keep your data safe when we get it from Qualtrics, the online survey company. Because of the nature of online surveys, as anything on the Internet, we cannot guarantee the confidentiality of the data while still on Qualtrics' servers. We cannot safeguard it while en route to either them or us either. It is also possible the raw data collected for research purposes will be used by Qualtrics. They may use it for marketing or reporting purposes. This depends on the company's Terms of Service and Privacy policies. If you have questions about the study, please feel free to ask. Our contact information is given below.

If you have complaints, suggestions, or questions about your rights, contact the staff in the University of Kentucky. Reach the Office of Research Integrity at 859-257-9428 or toll-free at 1-866-400-9428. Thank you in advance for your assistance with this important project.

Sincerely,

Dr. Daniel Chavez and Dr. Allan Chen

Department of Marketing and Supply Chain

University of Kentucky

PHONE: 859-257-8936

E-MAIL: daniel.chavez@uky.edu

Assessing the fairness of price increases

Face masks – Price increase due to an unknown reason:

A store had been selling a box of fifty face masks for $4.89. Following the outbreak of COVID-19, the store raises prices to $6.39. Please rate this action as:

Completely Fair Acceptable Unfair Very unfair

Face masks – Price increase due to a demand shock:

A store had been selling a box of fifty face masks for $4.89. Following the outbreak of COVID-19, the demand for face masks has greatly increased. The store raises prices to $6.39. Please rate this action as:

Completely Fair Acceptable Unfair Very unfair

Face masks – Price increase due to a supply shock:

A store had been selling a box of fifty face masks for $4.89. Following the outbreak of COVID-19, several factories producing the masks were temporarily closed. The store raises prices to $6.39. Please rate this action as:

Completely Fair Acceptable Unfair Very unfair

Hand sanitizer – Price increase due to an unknown reason:

A store had been selling a package of a dozen 8 oz hand sanitizers for $44.29. Following the outbreak of COVID-19, the store raises the price to $57.59. Please rate this action as:

Completely Fair Acceptable Unfair Very unfair

Hand sanitizer – Price increase due to a demand shock:

A store had been selling a package of a dozen 8 oz hand sanitizers for $44.29. Following the outbreak of COVID-19, the demand for hand sanitizers has been greatly increased. The store raises the price to $57.59. Please rate this action as:

Completely Fair Acceptable Unfair Very unfair

Hand sanitizer – Price increase due to a supply shock:

A store had been selling a package of a dozen 8 oz hand sanitizers for $44.29. Following the outbreak of COVID-19, several factories producing hand sanitizers were temporarily closed. The store raises the price to $57.59. Please rate this action as:

Completely Fair Acceptable Unfair Very unfair

Toilet-Paper – Price increase due to an unknown reason:

A store had been selling a pack of 18 toilet paper rolls for $17.99. Following the outbreak of COVID-19, the store raises the price to $23.39. Please rate this action as:

Completely Fair Acceptable Unfair Very unfair

Toilet-Paper – Price increase due to a demand shock:

A store had been selling a pack of 18 toilet paper rolls for $17.99. Following the outbreak of COVID-19, the demand for toilet paper has increased. The store raises the price to $23.39. Please rate this action as:

Completely Fair Acceptable Unfair Very unfair

Toilet-Paper – Price increase due to a supply shock:

A store had been selling a pack of 18 toilet paper rolls for $17.99. Following the outbreak of COVID-19, several factories producing toilet paper were temporarily closed. The store raises the price to $23.39. Please rate this action as:

Completely Fair Acceptable Unfair Very unfair

Chicken – Price increase due to an unknown reason:

A store was selling fresh whole chicken for $0.99 per pound. Following the outbreak of COVID-19, the store raises the price to $1.29 per pound. Please rate this action as:

Completely Fair Acceptable Unfair Very unfair

Chicken – Price increase due to a demand shock:

A store was selling fresh whole chicken for $0.99 per pound. Following the outbreak of COVID-19, the demand for meat has increased. The store raises the price to $1.29 per pound. Please rate this action as:

Completely Fair Acceptable Unfair Very unfair

Chicken – Price increase due to a supply shock:

A store was selling fresh whole chicken for $0.99 per pound. Following the outbreak of COVID-19, there has been temporary shutdown of several meat processing facilities. The store raises the price to $1.29 per pound. Please rate this action as:

Completely Fair Acceptable Unfair Very unfair

Dijon Mustard – Price increase due to an unknown reason:

A store had been selling 8 oz Original Dijon Mustard for $2.29. Following the outbreak of COVID-19, the store raises the prices to $2.99. Please rate this action as:

Completely Fair Acceptable Unfair Very unfair

Dijon Mustard – Price increase due to a demand shock:

A store had been selling 8 oz Original Dijon Mustard for $2.29. Following the outbreak of COVID-19, the demand for mustard has increased. The store raises the prices to $2.99. Please rate this action as:

Completely Fair Acceptable Unfair Very unfair

Dijon Mustard – Price increase due to a supply shock:

A store had been selling 8 oz Original Dijon Mustard for $2.29. Following the outbreak of COVID-19, several producers were temporarily closed. The store raises the prices to $2.99. Please rate this action as:

Completely Fair Acceptable Unfair Very unfair

Demographics

Age:

_____

Gender:

Male Female

Marital status:

Single Married Divorced Widowed Other

Racial or ethnic identification:

Caucasian (other than Hispanic)

Black or African American

American Indian or Alaska Native

Asian or Pacific Islander

Hispanic

Other

What is the highest level of school you have completed or the highest degree you have received?

Less than high school degree

High school graduate (high school diploma or equivalent including GED)

Some college but no degree

Associate degree in college (2-year)

Bachelor's degree in college (4-year)

Master's degree

Doctoral degree

Professional degree (JD, MD)

Did either of your parents graduate from college?

No

Yes, both parents

Yes, mother only

Yes, father only

Do you work?

No

Yes, part-time

Yes, full time

Have you taken any courses in economics?

No

Yes, 1–2

Yes, 3–4

Yes, more than 4

Do you describe yourself as:

Democrat

Republican

Independent

Other / I do not know

How often do you hang out with your friends (hours per week)?

1 2 3 4 5 6 or more

Do you recycle any of the following: **plastic, paper, newspaper, glass, batteries, and aluminum?**

Yes

No

Did you volunteer in any setting during the last 12 months?

Yes

No

Note on the Questionnaire We Used in Israel

In the questionnaire we used in Israel, the questions concerning toilet paper were replaced with questions related to eggs. The latter were phrased as follows:

Eggs – Price increase due to an unknown reason:

The price of a package of 12 eggs is capped by the government at NIS 11.30. Before the Passover, it was possible to buy a package of eggs on roadsides for NIS 15. Please rate this action as:

Completely Fair Acceptable Unfair Very unfair

Eggs – Price increase due to a demand shock:

The price of a package of 12 eggs is capped by the government at NIS 11.30. Before the Passover, there was an increase in demand leading to egg shortages in stores. On the roadsides, it was possible to buy a package of eggs for NIS 15. Please rate this action as:

Completely Fair Acceptable Unfair Very unfair

Eggs – Price increase due to a supply shock:

The price of a package of 12 eggs is capped by the government at NIS 11.30. Because it was impossible to increase production, there was a shortage of eggs in stores before the Passover. On the roadsides, it was possible to buy a package of eggs for NIS 15. Please rate this action as:

Completely Fair Acceptable Unfair Very unfair

Appendix B. Robustness check – different populations in the Israeli sample

In Israel, we collected data via social media forums, and by posting a note on a webpage of a business news website. Because the responses of participants might differ according to the recruitment method and the platform used, as a test of robustness we separate the Israeli data into two subgroups, and we estimate the same regressions as in Table 3 of the main text separately for each of the two subgroups. We report the estimation results in Table B1.

In columns 1 and 3, the independent variables are the importance score, a dummy for the Israeli sample, an interaction between the Israeli sample and the importance score, dummies for goods, and dummies for the reason for the price increase. It turns out that we had only 45 participants who took part in the survey via the business internet website, compared to 998 participants who took part in the survey via social media forums.

We find that the results for the subgroup that took part in the survey via social media forums (column 1) are in line with what we find when we use the full set of data: the US participants are affected by the importance score ($\beta = 0.03, p < 0.01$), and they are more likely to respond that a price increase is unfair if the price increase is motivated by a demand shock ($\beta = 0.12, p < 0.01$) or an unknown reason ($\beta = 0.13, p < 0.01$). Israeli participants are less affected by the importance score than the US participants, and this difference is marginally significant ($\beta = 0.02, p < 0.10$)

The estimation results when we use responses of the participants that took part in the survey via the business news webpage are less precise, perhaps because of the small sample size. Consistent with the findings in column 1, we find that the participants are more likely to respond that a price increase is unfair if the price increase is motivated by a demand shock ($\beta = 0.10, p < 0.01$) or an unknown reason ($\beta = 0.13, p < 0.01$). The US participants are affected by the importance score ($\beta = 0.01, p < 0.10$). The coefficient of the interaction between the importance score and the Israeli sample is negative, but it is not statistically significant ($\beta = -0.03, p > 0.19$).

Table B1. Perception of price increase unfairness and the goods' importance: Israeli data

	Social media forums		Business news website	
	(1)	(2)	(3)	(4)
Importance score	0.03***	0.03***	0.01*	0.01*
	(0.006)	(0.006)	(0.006)	(0.006)
Israeli sample	0.33***	0.34***	0.33***	0.34***
	(0.028)	(0.029)	(0.086)	(0.089)
Importance score ×	-0.02*	-0.02*	-0.03	-0.03
Israeli sample	(0.008)	(0.008)	(0.027)	(0.027)
Facemasks	-0.00	-0.00	0.11***	0.10***
	(0.015)	(0.016)	(0.021)	(0.021)
Hand-sanitizers	0.12***	0.12***	0.26***	0.26***
	(0.015)	(0.015)	(0.021)	(0.022)
Toilet-paper	0.18***	0.18***	0.26***	0.26***
	(0.020)	(0.020)	(0.024)	(0.024)
Eggs	0.06***	0.06***	0.17**	0.17**
	(0.018)	(0.018)	(0.074)	(0.074)
Chicken	-0.04***	-0.04***	-0.04**	-0.04**
	(0.014)	(0.014)	(0.019)	(0.019)
Unknown reason for	0.13***	0.13***	0.13***	0.13***
price increase	(0.010)	(0.010)	(0.013)	(0.013)
Price increase due to	0.12***	0.12***	0.10***	0.10***
demand	(0.009)	(0.009)	(0.012)	(0.012)
Age		0.00		0.00
		(0.001)		(0.001)
Married		-0.02		-0.01
		(0.016)		(0.023)
Employed		-0.02		-0.00
		(0.016)		(0.026)
Academic		-0.03*		-0.04*
		(0.016)		(0.024)
Taken economic		-0.02		-0.05**
course		(0.015)		(0.023)
Constant	0.30***	0.29***	0.30	0.31***
	(0.021)	(0.032)	(0.021)	(0.047)
$Overall\ R^2$	0.12	0.12	0.09	0.10
N	9,030	9,030	4,723	4,723

Notes: The table reports the results of random effects regressions with standard errors clustered at the respondents' level. The dependent variable in all columns is a dummy that equals 1 if the respondent assessed a price increase as unacceptable and 0 otherwise. Importance score is the respondent's response to the question: "On a scale from 1–5, how important are_____to you?" The Israeli sample is a dummy variable that equals 1 if the respondent took part in the survey in Israel, and 0 otherwise. Facemasks, hand sanitizers, toilet paper, eggs, and chicken are all product dummies that receive 1 if the product is facemasks, hand-sanitizers, toilet-paper, eggs, and chicken, respectively, and 0 otherwise. An unknown reason for price increase is a dummy that equals 1 if the respondent was not given a reason for the price increase, and 0 otherwise. Price increase due to demand is a dummy that equals 1 if the respondent was told that the reason for the price increase is an increase in demand, and 0 otherwise. Age is the respondent's age. Married is a dummy that equals 1 if the respondent is married and 0 otherwise. Employed is a dummy that equals 1 if the respondent is employed full or part-time and 0 otherwise. Academic is a dummy that equals 1 if the respondent has a BA or higher degree. Taken economic course is a dummy that equals 1 if the participant

has taken at least one college-level economics course. Columns 1 and 2 use information of Israeli participants who took part in the survey via social media forums. Columns 3 and 4 use information on Israeli participants who participated in the survey via a business news website. 45 participants took part in the survey via the business news website. 998 participants took part in the survey via social media forums. * $p < 10\%$, ** $p < 5\%$, *** $p < 1\%$.

Appendix C. Robustness check – excluding questions pertaining to eggs

The questions pertaining to eggs were (inadvertently) phrased differently than the other questions. The other questions mentioned COVID-19 explicitly. The questions pertaining to eggs mentioned the Passover period, which, in Israel, happened during the first lockdown period. It is possible that some participants have, therefore, perceived the increase in the price of eggs as less fair than other price increases because of the association with a holiday period, rather than with the COVID-19 epidemic.

The participants might have also noticed that an increase in the price of eggs is illegal in Israel, because the price of eggs is capped by the government. Nevertheless, the price of eggs increased during the first COVID-19 lockdown because eggs were in short supply, leading to the emergence of an informal ("black") market, where farmers sold eggs directly to consumers.

In this appendix, we show that our results are not driven by the differences between the wording of the questions pertaining to eggs and other questions, nor by the difference between the market for eggs and other markets mentioned in the questions. To do so, we exclude observations on questions pertaining to eggs and re-estimate the regressions that we report in the paper, in Table 3.

The re-estimation results are summarized in Table C1. The dependent variable in all the regressions is a dummy variable that equals 1 if a price increase is viewed as unfair, and 0 otherwise. In all the regressions, we cluster the standard errors at the respondent level.

In column 1, the independent variables are the importance score, dummies for goods, dummies for the reason for the price increase, a dummy for the Israeli sample, and an interaction of the dummy for the Israeli sample with the importance score.

We find that the coefficient of the importance score is positive ($\beta = 0.03, p < 0.01$), suggesting that the U.S. respondents consider the importance of the goods when they assess the fairness of the goods' price increase: the more important the good is, the more likely they are to perceive a price increase as unfair. The coefficient of the interaction of

the importance score with the Israeli sample is negative ($\beta = -0.02, p < 0.05$). The sum of the main effect and the interaction term is statistically significant ($\chi^2 = 16.01, p < 0.01$). Thus, although the Israeli respondents assigned a smaller role to the goods' importance than the US respondents when assessing the fairness of price increases, the importance of goods still mattered to them.

In column 2, we add further controls. We chose these controls using a forward selection algorithm, using AIC as the criterion for determining how many variables to add. The controls that we add include the respondents' age, a dummy for married respondents, a dummy for employed respondents, a dummy for respondents with an academic degree, a dummy for respondents who have taken at least one college-level economics course, a dummy for participants whose mother has an academic degree, and a dummy that equals 1 if the participant is a woman.

Our main results remain unchanged. Adding the control variables does not change the coefficient, nor the significance of the importance score.

To assess the role that the products that were perceived as less important may have played in driving the differences between the Israeli and the U.S. participants, in column 3, we exclude the observations pertaining to questions that dealt with Dijon-mustard, the least important product in both the U.S. and Israeli samples. We find that once we exclude the observations related to Dijon-mustard, the coefficient of the interaction between the importance score and the Israeli sample becomes positive, although it is not statistically significant ($\beta = 0.02, p > 0.10$). In other words, once we exclude the observations pertaining to Dijon-mustard, we find that Israeli participants appear to be as sensitive as the U.S. participants to changes in the importance scores when they assess the fairness of a price change.

Interpreting this result as suggesting that the difference between the Israeli and the U.S. participants is driven by products perceived as the least important might be misleading, however. This is because the price of Dijon-mustard was not particularly affected by the COVID-19 crisis, while the prices of the other products in the survey increased significantly. Focusing on Dijon-mustard might, therefore, have confounded the effects of perceived importance and perceived unfairness due to the experience with price increases. In column 4, therefore, we exclude observations pertaining to the

questions about chicken, because after excluding Dijon mustard, this is the product that is perceived as the least important out of the remaining products.

We find that after excluding observations related to chicken, the coefficient of the importance score becomes marginally significant ($\beta = 0.01, p < 0.10$). The coefficient of the interaction between the importance score and the Israeli sample, on the other hand, becomes statistically significant ($\beta = 0.03, p < 0.05$), and the coefficient of the dummy for Israeli participants is not statistically significant ($\beta = 0.05, p > 0.33$).

The results that we obtain after we exclude observations on questions pertaining to eggs are therefore similar to the ones we report in the paper. We conclude that our results are not driven by the phrasing of the questions pertaining to eggs.

Table C1. Perception of price increase unfairness and the goods' importance – excluding eggs from the regressions

	(1)	(2)	(3)	(4)
Dependent Variable:	Dummy = 1 if a price increase is viewed as unfair, 0 otherwise			
Importance score	0.03***	0.03***	0.02***	0.01
	(0.001)	(0.006)	(0.007)	(0.008)
Israeli sample	0.35***	0.36***	0.20***	0.05
	(0.028)	(0.029)	(0.042)	(0.053)
Importance score ×	-0.02**	-0.02***	0.02	0.03**
Israeli sample	(0.008)	(0.008)	(0.012)	(0.015)
Facemasks	0.00	0.01		
	(0.016)	(0.016)		
Hand-sanitizers	0.13***	0.13***	0.013***	0.13***
	(0.014)	(0.015)	(0.011)	(0.011)
Toilet-paper	0.18***	0.18***	0.18***	0.14***
	(0.020)	(0.020)	(0.016)	(0.017)
Chicken	-0.03**	-0.03**	-0.03**	
	(0.014)	(0.014)	(0.013)	
Unknown reason for	0.14***	0.14***	0.13***	0.14***
price increase	(0.010)	(0.010)	(0.011)	(0.010)
Price increase due to	0.12***	0.12***	0.12***	0.11***
demand	(0.010)	(0.010)	(0.011)	(0.012)
Age		0.00	0.00	0.00
		(0.001)	(0.001)	(0.001)
Married		-0.03	-0.03	-0.02
		(0.017)	(0.018)	(0.020)
Employed		-0.02	-0.02	-0.03*
		(0.016)	(0.018)	(0.020)
Academic		-0.02	-0.03*	-0.03*
		(0.016)	(0.017)	(0.020)
Taken economic		-0.02	-0.03	-0.02
course		(0.015)	(0.016)	(0.019)
Mother is an		-0.03*	-0.03**	-0.03*
academic		(0.015)	(0.017)	(0.019)
Woman		0.11***	0.12***	0.13***
		(0.016)	(0.017)	(0.020)
Constant	0.29***	0.22***	0.29***	0.40***
	(0.021)	(0.036)	(0.044)	(0.051)
$Overall\ R^2$	0.11	0.12	0.11	0.08
N	8190	8190	6243	4296

Notes: The table presents the results of regressions with standard errors clustered at the respondent level. The dependent variable in all columns is a dummy variable that equals 1 if the respondent assessed a price increase as unacceptable, and 0 otherwise. Importance score is the respondent's response to the question: "On a scale from 1-5, how important are _____to you?" The Israeli sample is a dummy variable that equals 1 if the respondent took part in the Israeli survey, and 0 otherwise. Importance score × Israeli sample is an interaction term between the importance score and a dummy for respondents participating in the Israeli survey. facemasks, hand sanitizers, toilet paper, and chicken are all product dummy variables that equal 1 if the product is facemasks, hand sanitizers, toilet paper, and chicken, respectively, and 0 otherwise.

An unknown reason for a price increase is a dummy variable that equals 1 if the respondent was not given a reason for the price increase, and 0 otherwise. Price increase due to demand is a dummy variable that equals 1 if the respondent was told that the reason for the price increase is an increase in demand and 0 otherwise. Age is the respondent's age. Married is a dummy variable that equals 1 if the respondent is married and 0 otherwise. Employed is a dummy variable that equals 1 if the respondent is employed full or part-time and 0 otherwise. Academic is a dummy variable that equals 1 if the respondent has a BA or higher degree. Taken economic course is a dummy variable that equals 1 if the participant has taken at least one college-level economics course. Mother is an academic is a dummy variable that equals 1 if the participant's mother has a BA or higher degree. Woman is a dummy variable that equals 1 if the respondent is a woman. In column 3, we exclude observations if the product mentioned in the question was Dijon-mustard. In column 4 we exclude observations if the product mentioned in the question was either Dijon-mustard or chicken. The base group in columns 1 and 2 is Dijon Mustard. The base group in columns 3 and 4 is facemasks. All regressions include random effects for participants. * $p < 10\%$, ** $p < 5\%$, *** $p < 1\%$.

Appendix D. Assessing the variation in the responses on the products' importance

In column 3 of Table 3 in the paper, we exclude observations on questions pertaining to Dijon mustard. In column 4, we also exclude observations on questions pertaining to chicken. By doing so, we mechanically remove some of the variation in the importance scores that the respondents assigned to the sampled products. This raises the possibility that some of the results in columns 3 and 4 are spurious, driven by the lack of sufficient variation in the importance scores that the participants assigned to the products that remain in the sample.

To test this, in Table D1 we report the summary statistics of the importance score that the respondents assigned to each product. We find that the greatest variation in the importance score is found in questions related to face masks and hand sanitizers, perhaps because the respondents were uncertain about how effective they are in reducing contamination. We also find that the importance score of all products, except eggs, varies between 0 and 5. The importance score of eggs varies between 1 and 4.

It, therefore, seems that there is a considerable variation in the importance score even after we exclude the observations on questions pertaining to Dijon-mustard and eggs.

Another relevant test, when it comes to looking at the variation in the importance score is looking at the variation within individual participants. If participants tended to give similar responses across products, then removing products with low values of the importance score would lead to removing participants, thus biasing our sample in favour of participants that tended to value the products highly.

To test this, we calculated for each participant the difference between the minimum and the maximum score that s/he has given. Figure D1 depicts the histogram of the distribution of the differences. We find that the mode of the distribution is 3, with 1090 out of 1947 (56%) participants having a difference of 3 or more. Only 270/1947 (14%) had a difference of 1 or less. We therefore conclude that participants tended to value products differently – giving relatively

high scores to some products and low scores to others. It, therefore, seems that we did not bias the distribution by removing the products with the lowest importance scores.

Table D1. Summary statistics of the importance score, by product

Product	Average	Standard deviation	Minimum	Maximum
Facemasks	3.50	1.126	0	5
Hand-sanitizers	3.39	1.138	0	5
Toilet-paper	4.48	0.853	0	5
Eggs	3.37	0.732	1	4
Chicken	3.26	1.030	0	5
Dijon-mustard	1.78	0.940	0	5

Notes: Summary statistics of the importance score, by product.

Figure D1. Histogram of the distribution of the within-participant differences between the minimum and maximum importance scores