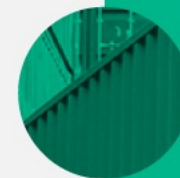
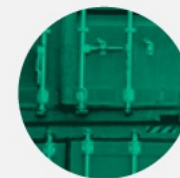


SPECIAL REPORT

# A New Framework for Evaluating Supply Chains and Consumer Inflation

Introducing the Supply Chain Index of Consumer  
Inflation Pressures

APRIL 2022



Morning Consult's Supply Chain Index of Consumer Inflation Pressures aims to measure the degree to which U.S. consumers are impacted by supply chain disruptions and their resulting price effects by evaluating how consumers adapt their purchasing behavior in response.

### Why supply chains matter

Persistent supply chain disruptions continue to play an important role in sustaining elevated inflation in the United States. Rapid price growth is challenging consumers and policymakers alike, dampening sentiment and threatening to weigh down spending and overall economic growth.

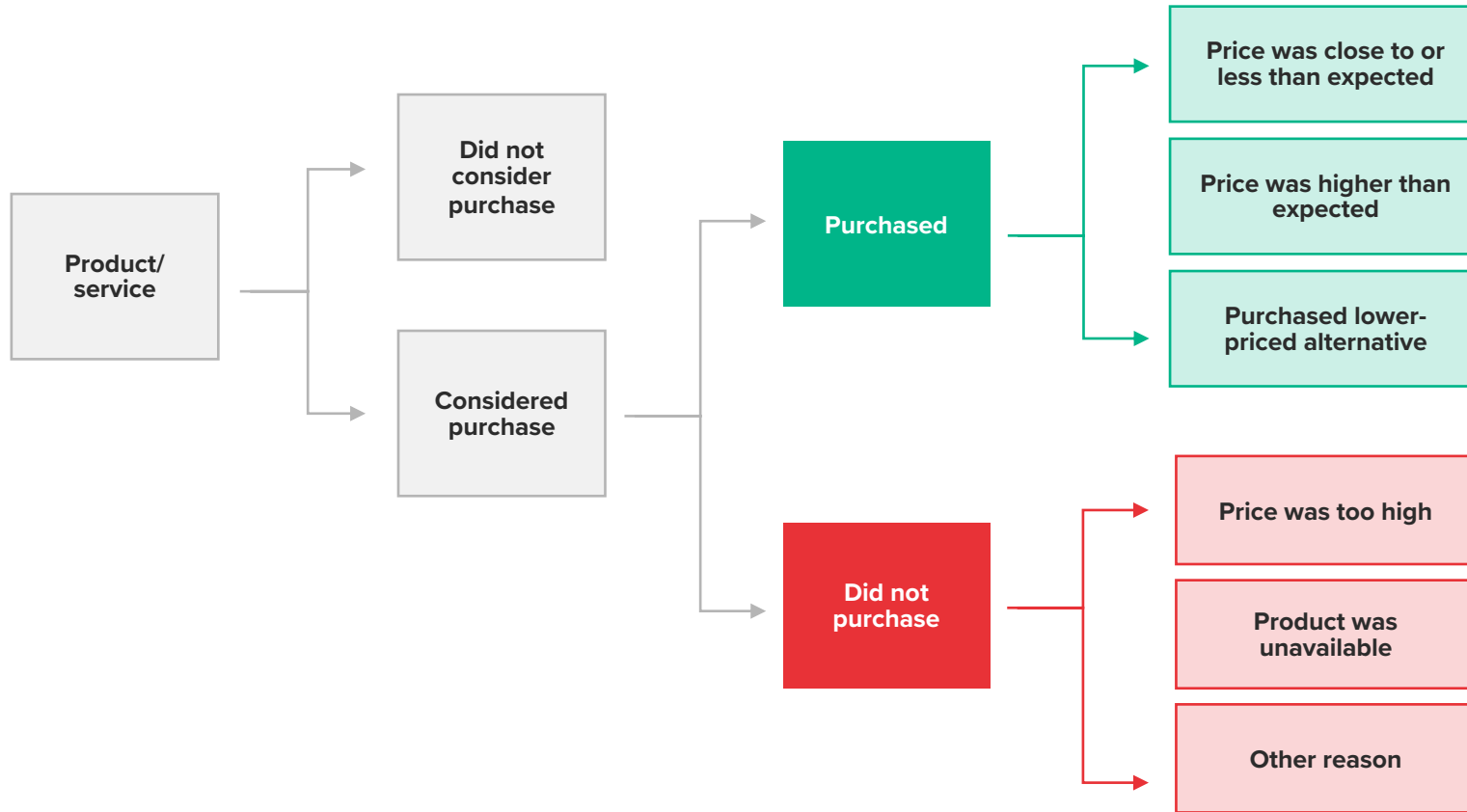
In normal times, supply chain disruptions are not particularly uncommon. But it is rare for these disruptions to be as broad-based, severe and persistent as they have been over the course of the ongoing pandemic. As a result, shortages and their associated impacts have become an increasingly prevalent factor influencing consumer purchasing behavior.

### How Morning Consult's index is unique

Many prominent supply chain indicators, such as the ISM Supplier Deliveries Index, capture shifts in supply chain dynamics from the perspective of a business's purchasing manager. Morning Consult's index complements these measures by offering unique insight into the degree to which consumers are experiencing the effects of supply chain disruptions. Evaluating the impact of product unavailability, substitution and price sensitivity adds a critical missing piece to the analysis of supply chains. By linking supply-side pressures to their effects on consumer demand for various product categories, we can better understand their implications for consumer spending.

# A new framework for measuring the impact of supply chain disruptions on consumers

## OUR NEW FRAMEWORK



In March 2022, Morning Consult's monthly [supply chain and inflation tracking survey](#) was amended to include new questions geared toward capturing consumer responses to supply chain disruptions and rising prices. This new framework seeks to measure product unavailability, price sensitivity and substitution effects.

# A Supply Chain Index of Consumer Inflation Pressures

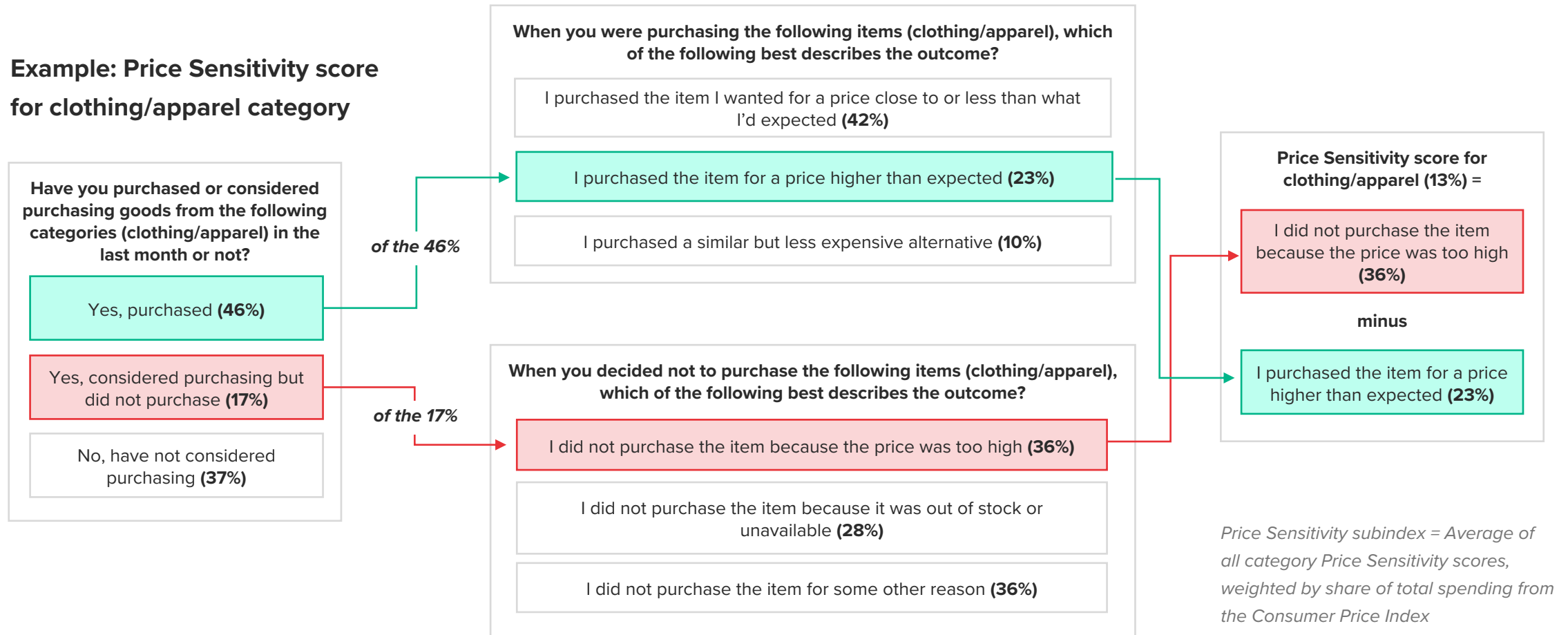
## The Five Subindexes That Comprise the Overall Index

<b>Product Unavailability</b>	<i>Did not purchase because product was unavailable minus Purchased for price close to or less than expected</i>
<b>Price Sensitivity</b>	<i>Did not purchase because price was too high minus Purchased for higher-than-expected price</i>
<b>Substitutability</b>	<i>Purchased lower-priced alternative minus Did not purchase</i>
<b>Purchasing Difficulty</b>	<i>Reported difficulty finding certain items minus Did not report difficulty finding certain items</i>
<b>Delivery Delays</b>	<i>Deliveries were slower than last month minus Deliveries were faster than last month</i>

We plan to combine the information from this framework with aspects of our existing survey into a singular Supply Chain Index of Consumer Inflation Pressures. Underlying this diffusion index will be the five subindexes shown at left, each constructed as the difference between two alternative outcomes.

# Process for converting survey responses into subindexes tracking consumer behavior

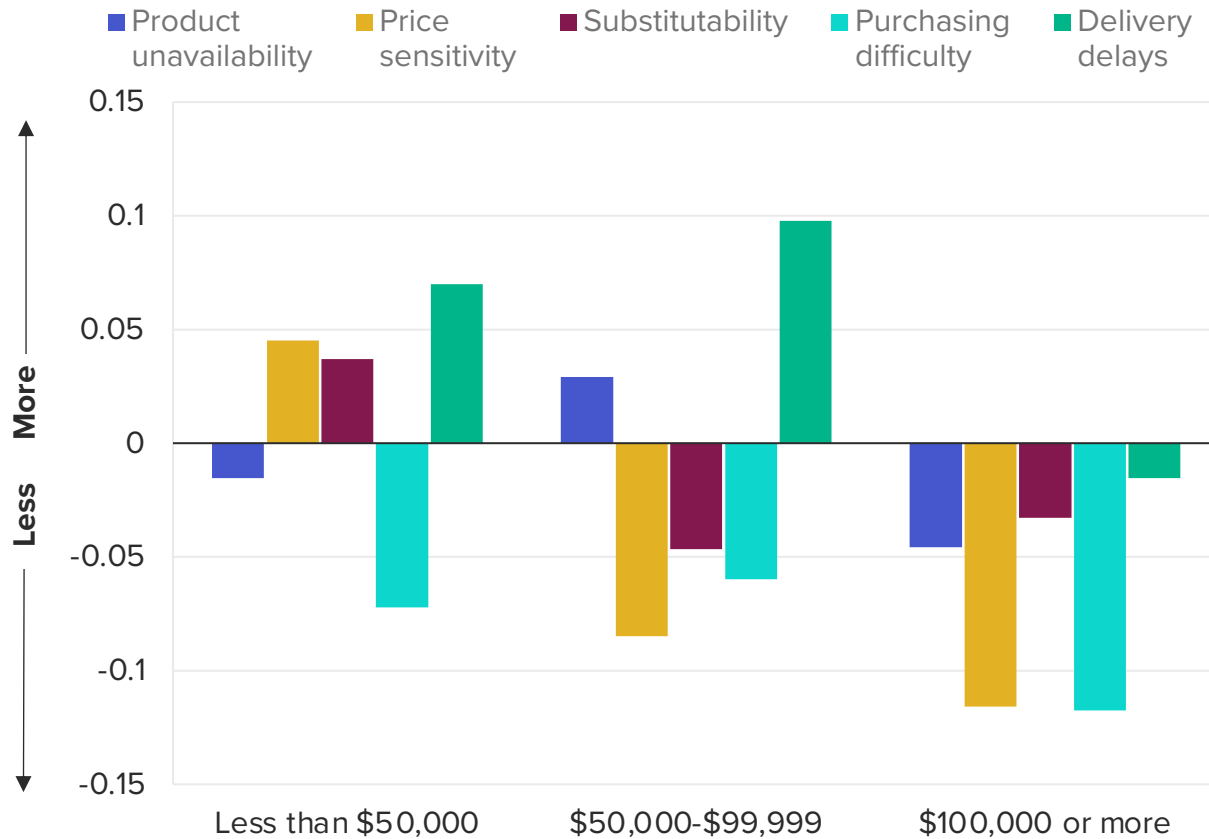
## Example: Price Sensitivity score for clothing/apparel category





# Subindexes by income groups

Supply Chain Index of Consumer Inflation Pressures, subindexes by income



We find that the impact of supply chain disruptions on spending patterns differs considerably by income. Higher-earning households tend to have more spending capacity. This relative flexibility in terms of ability to spend enables access to a wider range of potential purchases, since price is less of a limiting factor. More options increase the likelihood that a given item is available and affordable.

As might be expected, adults earning less than \$50,000 per year expressed greater price sensitivity than their higher-earning counterparts and were also more inclined to say that they sought out lower-priced alternatives when faced with higher prices due to supply chain disruptions.

Interestingly, however, middle-income adults (\$50,000 to \$99,999 in annual earnings) were the most likely to report limited product availability and delays in delivery times.

Adults earning \$100,000 per year or more reported lower price sensitivity, better product unavailability and fewer product purchasing difficulties, potentially reflecting better access to less disrupted distribution channels than their lower-earning peers.

# Category coverage by subindex

We can also use this framework to evaluate supply conditions for individual categories of products and services. The table here summarizes the coverage of our survey on this dimension. Given the particulars of the questions underlying our framework, there is some variation in coverage across subindexes. Product Unavailability, Price Sensitivity and Substitutability have identical coverage and are discussed in more detail on the next few slides.

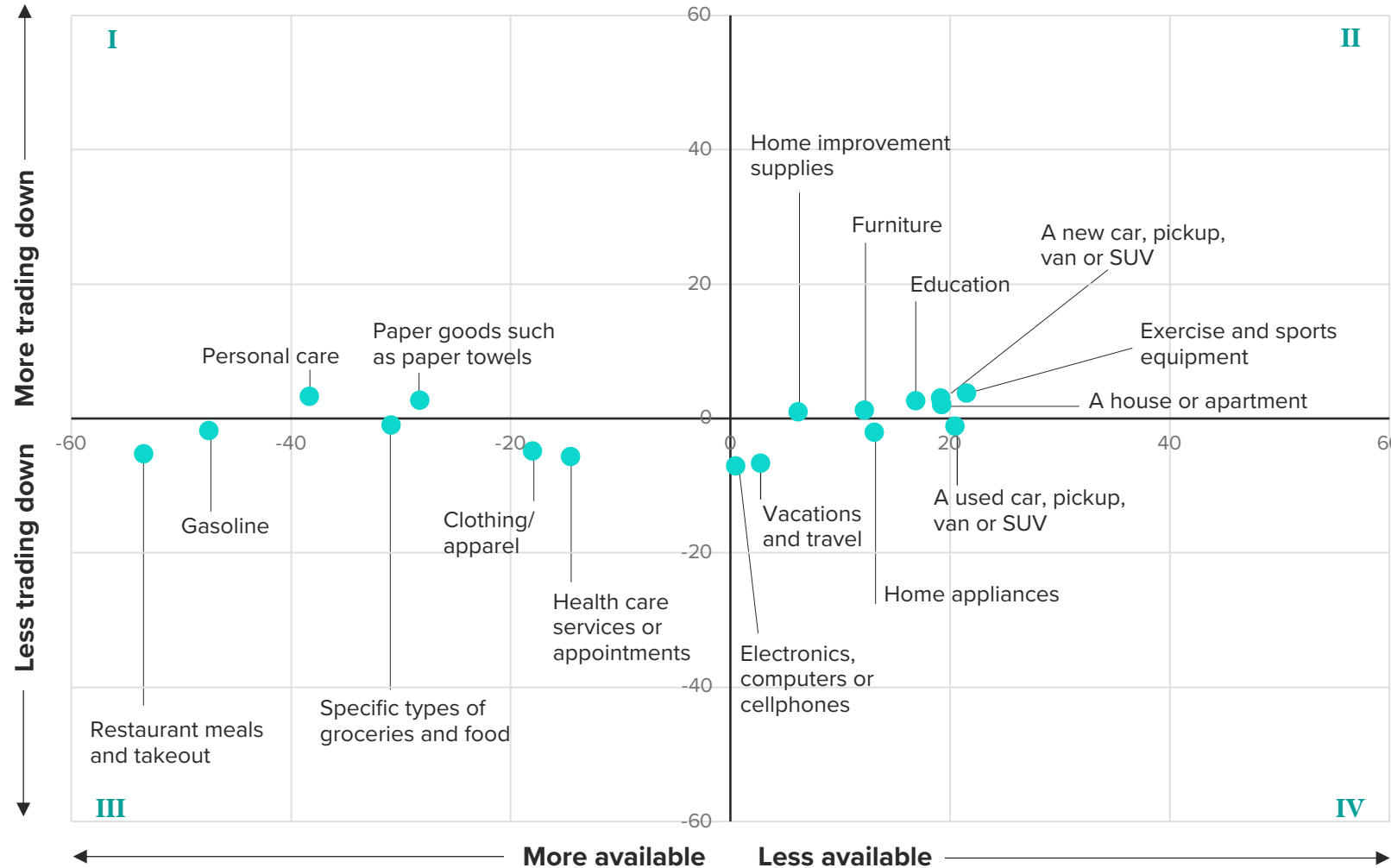
Visualizing product category-level index scores is helpful as a validation exercise, as it allows us to evaluate whether our metrics are performing in a way that makes sense, given the characteristics of various goods and services. For example, we would expect to see relatively higher price sensitivity for discretionary items than for essential goods and services, and less “trading down” for product categories without a natural substitute.

Plotting category-level index scores relative to one another also allows for deeper insights on supply chain disruptions and inflation, such as comparing how product unavailability and substitutability, product unavailability and price sensitivity, or substitutability and price sensitivity relate to one another for a given type of good or service.

Survey category	Product Unavailability	Price Sensitivity	Substitutability	Purchasing Difficulty	Delivery Delays
Home appliances	0.3%	0.3%	0.3%	0.5%	1.7%
Electronics, computers or cellphones	1.4%	1.4%	1.4%	2.0%	7.3%
Furniture	1.3%	1.3%	1.3%	1.8%	6.6%
Clothing/apparel	3.2%	3.2%	3.2%	4.5%	16.8%
Specific types of groceries and food, such as coffee, meat or prepackaged goods	10.8%	10.8%	10.8%	15.0%	55.8%
Supplies for home repairs, improvements or renovations	1.2%	1.2%	1.2%	1.7%	6.4%
Exercise and sports equipment	0.7%	0.7%	0.7%	1.0%	3.9%
Paper goods, such as paper towels or toilet paper	0.3%	0.3%	0.3%	0.4%	1.4%
A new car, pickup, van or sport utility vehicle	5.4%	5.4%	5.4%	7.5%	--
A used car, pickup, van or sport utility vehicle	5.5%	5.5%	5.5%	7.6%	--
A house or apartment	41.8%	41.8%	41.8%	58.0%	--
Gasoline	4.9%	4.9%	4.9%	--	--
Restaurant meals and takeout	6.9%	6.9%	6.9%	--	--
Vacations and travel	2.0%	2.0%	2.0%	--	--
Personal care items and services	1.6%	1.6%	1.6%	--	--
Education or tuition	3.4%	3.4%	3.4%	--	--
Health care services	9.2%	9.2%	9.2%	--	--

Weights derived from CPI relative spending importance, rebased so that the total for each index equals 100%.

# Product Unavailability vs. Substitutability

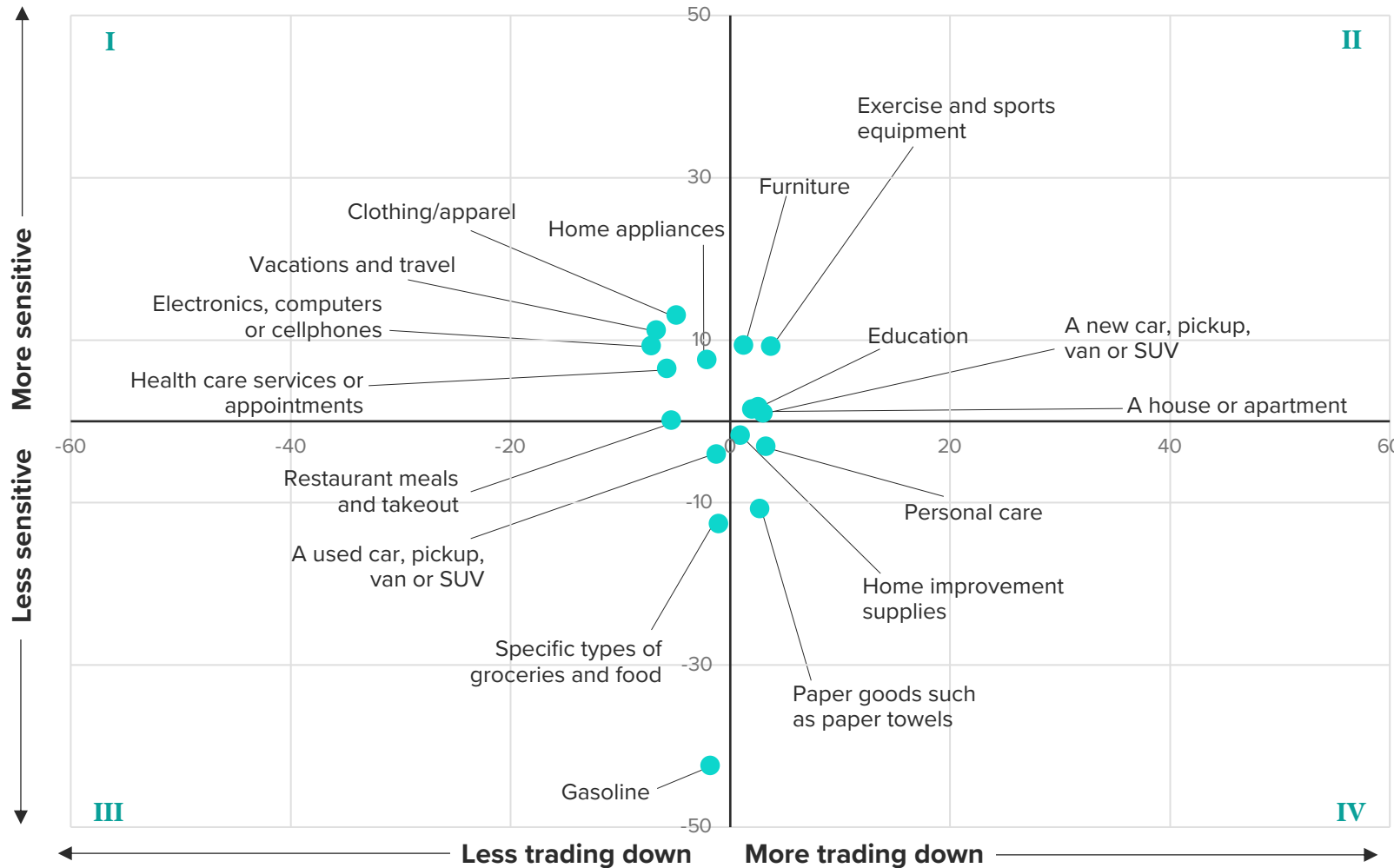


Among products that were more readily available (I & III), consumers were most likely to seek out substitutes for small, everyday purchases like personal care products or paper goods (I) and less likely to find substitutes for essentials like health care services and groceries (III).

On the supply-constrained side (II & IV), consumers were more likely to trade down on large purchases (II). New and used vehicles were rated as similarly scarce, but consumers were more likely to trade down to cheaper alternatives on new than used vehicles. New cars are more easily substitutable than used: The less expensive alternative for a new car is most often a used car, whereas buying a cheaper alternative to a used car might mean accepting an inferior product.



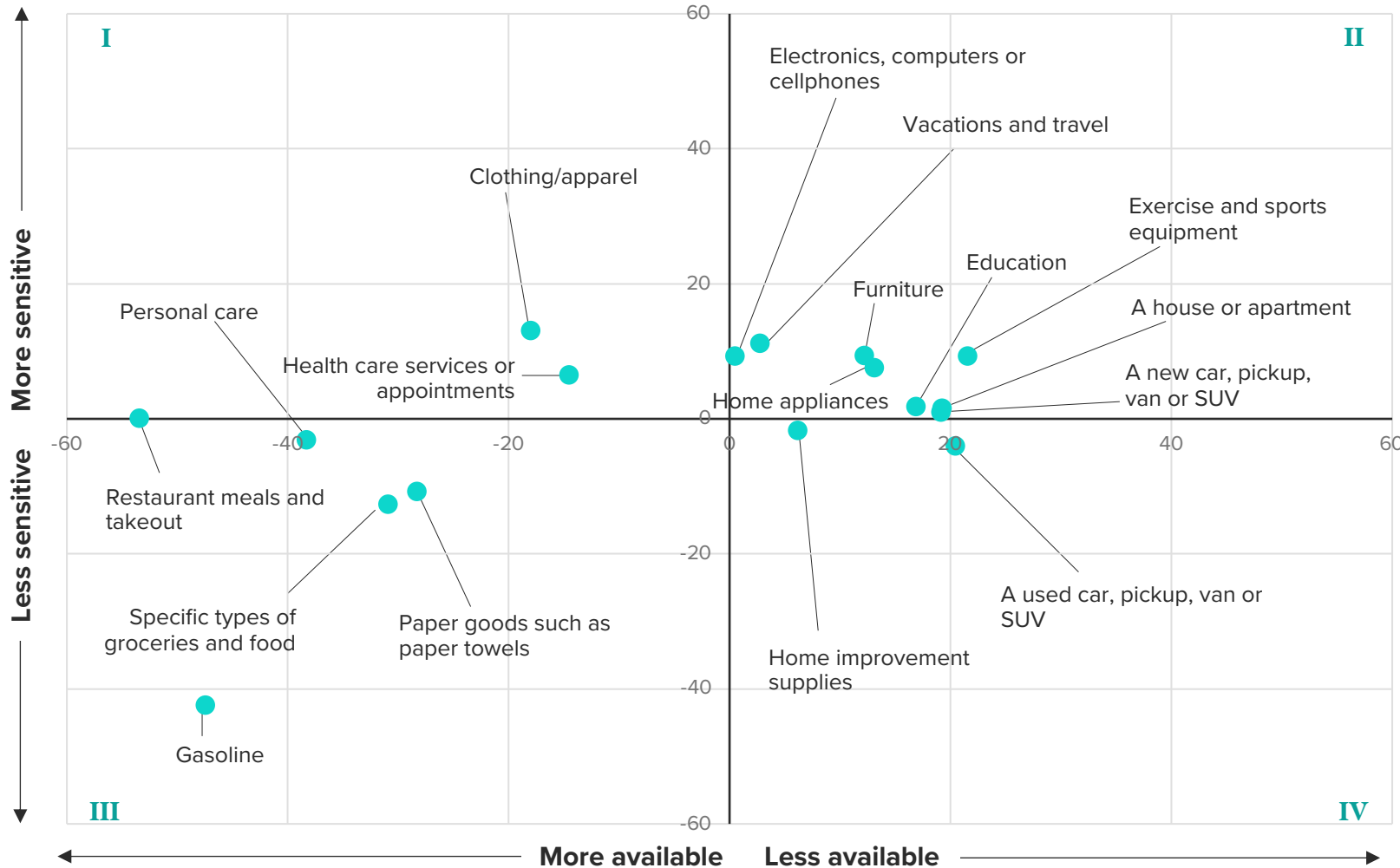
# Substitutability vs. Price Sensitivity



Unsurprisingly, consumers showed higher price sensitivity for discretionary goods and services (I & II). Differentiated products and services without natural substitutes, like vacations or health care, are often difficult to replicate with cheaper alternatives, so high prices for these items are more likely to result in a canceled purchase than a substitute.

Gas demand stood out as highly price inelastic (III & IV). Faced with higher-than-expected prices, car-dependent consumers can drive less to save on gas, but when tanks run empty, they have little choice but to refuel, regardless of sticker shock. Other essentials, like groceries and paper goods, were also less subject to price sensitivity, given their importance to household budgets.

# Product Unavailability vs. Price Sensitivity



Homes, exercise and sports equipment, and new and used vehicles were among the hardest-to-find items in March. Consumers also showed relatively high price sensitivity for these categories (II).

Several supply-constrained categories registered rapid price growth in March. To the extent consumers can delay these purchases, many appear to be doing so (II). Prices for groceries and gas have also risen sharply, but consumers were less able to avoid them (III).

Certain food items continue to be out of stock in grocery aisles. Although restaurant meals are more available, they are also more expensive. Consumers opting out of restaurant meals mostly did so because of price (I), but those who abandoned grocery purchases more often did so due to product unavailability (III).

## Next step: combining the components into a single index

1

The next step will be to combine the five subindexes described in this report into a single aggregate index. This process will be developed in the coming months as additional data becomes available for analysis.

2

Establishing a combined index requires further analysis of how its component subindexes behave over time. For instance, to account for different levels of variation, the components will likely need to be rebased prior to combination. Our next report will examine the potential methods available to use for this purpose.

3

Once we complete an evaluation of these methods, we will begin reporting on this value. The resulting Supply Chain Index of Consumer Inflation Pressures will track the degree to which supply chain disruptions are impacting consumer purchases over time.

# METHODOLOGY

# Methodology: Supply Chains and Inflation Survey

In recent months, supply chains have been facing numerous challenges, including pandemic-related factory shutdowns, bottlenecks on product components, port congestion, labor tightness and unfavorable weather patterns. These factors have coalesced to constrict supply for a multitude of products, contributing to rising inflation. In response to the ongoing struggles with production and distribution of goods, Morning Consult conducted a survey to evaluate the impact of these shortages on consumers. Each month, respondents are asked questions about which products they're having difficulty procuring, how long they're waiting for deliveries, and how they are responding to supply disruptions and price increases for various goods and services.

- **Start date:** September 2021
- **Frequency:** Monthly (except December 2021)
- **Fielding period:** Midmonth
- **Release date:** End of month
- **Sample size:** 2,200
- **Geographic coverage:** United States



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## LABOR MARKET METRICS Tracking Labor Force Metrics

Unemployment Rate	
Unemployment Rate	Expanded Unemployment Rate
Labour Force Participation Rate	Part-Time (PT) Rate
Employment to Population Ratio	Employee Workforce Ratio



## SPENDING CATEGORIES Spending growth is strongest among the youngest adults



## PERSONAL FINANCES Among U.S. households unable to pay their bills in full in May, about three quarters of respondents were less than \$300 short



## RANK ORDERING COMPARISON Unemployment Rate rank ordering by country: OECD vs. Morning Consult



## EMPLOYMENT Fear of income loss fades in June, signaling robust job growth next month

Overall optimism for rate of employment income over the next 4 weeks continued to rise in June.

As described in the *Morning Consult's* *Job Outlook* report, for most Americans, concern with the economy and potential recession in unemployment they experienced in May and June.

The decrease in apprehensions of pay or income losses among unemployed Americans to look again for employment in June, which is a month not adjacent to the unemployed.

## EMPLOYMENT RATE METHODOLOGY Morning Consult's unemployment rate calculation is a simple





# ECONOMIC INTELLIGENCE

## Data Intelligence on Key Economic Indicators

Morning Consult's SaaS platform tracks key economic indicators, including consumer sentiment, spending, labor conditions and more.

### MCEI DATA INTELLIGENCE CAPABILITIES

Economic Intelligence collects over 15,000 daily responses on key global macroeconomic indicators, including:

- Personal Finances
- Buying Conditions
- Business Conditions
- Employment Status
- Employment Type
- Labor Market Sizing
- Future Price Increases
- GDP Expectations
- Pricing Effect
- Supply Expectations
- Demand Expectations
- Ability to Pay

### Key Use Cases



#### TRACK GLOBAL CONSUMER CONFIDENCE

Track global consumer confidence to better understand and forecast consumer spending.



#### MONITOR LABOR & EMPLOYMENT CONDITIONS

Compare labor market conditions across and within countries to identify job seekers with appropriate skill sets.



#### TRACK INFLATION EXPECTATIONS

Tracking consumer inflation expectations and their impact on spending and buying habits.



#### UNDERSTAND HOUSING MARKET

Tracking supply and demand of housing, including buying, renting and the ability to make payments.

### Available in 44 countries



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CHINA



JAPAN



GERMANY



UK



FRANCE



INDIA



ITALY



BRAZIL



CANADA



S KOREA



RUSSIA



AUSTRALIA



SPAIN



MEXICO

