

EB 2020-15
December 2020



Extension Bulletin

Department of Applied Economics and Management
Cornell University, Ithaca, New York, 14853-7801 USA

The Covid-19 Shopper: Shopping Habits during Covid-19

Kristen S. Park, Adam Brumberg, Koichi Yonezawa

It is the Policy of Cornell University actively to support equality of educational and employment opportunity. No person shall be denied admission to any educational program or activity or be denied employment on the basis of any legally prohibited discrimination involving, but not limited to, such factors as race, color, creed, religion, national or ethnic origin, sex, age or handicap. The University is committed to the maintenance of affirmative action programs which will assure the continuation of such equality of opportunity.

Introduction

Shopping for groceries and preparing food are experiences common to most Americans. During the current Covid-19 pandemic, we hypothesize that those activities have changed. The current situation that has resulted from the Covid-19 is unprecedented. People have lived under stay-at-home orders, several places where consumers obtain foods, such as restaurants and schools, closed, food supply chains have been disrupted, processing plants and farms have been disrupted due to Covid-19 outbreaks among workers. And nowhere, at the time of the study, was the pandemic in greater effect than the Northeast states of New York, New Jersey, Connecticut, Massachusetts, and Pennsylvania.

Learning how these experiences have affected consumers in terms of their food shopping and food preparation habits will help guide actions by food industries, policy makers, and institutions immediately to support the welfare of consumers. In addition, this knowledge will add to the existing knowledge of how consumers respond to extreme disruptions and will help guide the industry during future events.

Our research questions are: 1) have shopping and food preparation habits changed since the advent of the Covid-19 lock down? 2) how have shopping and food preparation habits changed since the advent of the Covid-19 lock down? 3) how has the shopping experience changed since the advent of the Covid-19 lock down? and 4) how likely are consumers to resume pre-Covid-19 habits once the pandemic subsides?

This extension bulletin is one in a series of three that examine the results of one survey conducted May 21-26, 2020. Themes of these three bulletins are 1) online grocery shopping, 2) grocery shopping habits, and 3) food preparation habits.

Review of the Online Food Environment:

The 5-state study region started implementing statewide shutdowns starting with New York State on March 21 with the other states soon following suit. When the survey launched May 21, consumers had been under stay-at-home orders for approximately 2 months (Table 1).

Table 1. Statewide Lockdown Orders

State	Order dates	Link to order	Official name of order
Connecticut	March 23 - May 20	Link	Stay Safe, Stay Home
Massachusetts	March 24 - May 18	Link	Stay-at-home
New Jersey	March 21 - June 9	Link	Stay-at-home
New York	March 20 - June 27	Link	New York State on PAUSE
Pennsylvania	April 1 - June 4	Link	Stay-at-home

Source: [https://ballotpedia.org/States_that_issued_lockdown_and_stay-at-home_orders_in_response_to_the_coronavirus_\(COVID-19\)_pandemic,_2020](https://ballotpedia.org/States_that_issued_lockdown_and_stay-at-home_orders_in_response_to_the_coronavirus_(COVID-19)_pandemic,_2020)

Before the pandemic, online grocery sales were quickly increasing. Nielsen's Brandbank reported average 2019 online sales as being 4% of total grocery sales (Dunning 2020). Online sales increased throughout the year, and in December of 2019, Brick Meets Click, a consultant group that studies digital effects on the grocery sector, reported that online grocery sales accounted for 6.3% of the total amount spent on groceries in the U.S. (Melton 2019). They predicted online sales to increase to approximately 7.0% of the market in 2020.

In March 2020 society changed. Stay-at-home orders were issued by several states, and although grocery stores remained open as essential businesses, the emergence of the pandemic and consequent stay-at-home orders caused online grocery sales to accelerate sharply. Many consumers expressed their concerns for safety and shopped in the safety of their homes while retailers fast-tracked emerging online shopping operations to meet the demand (Redman, 2020).

The increase in online shopping outpaced retailers' and manufacturers' expectations. As they made decisions about managing the growth in online sales for their products, they were interested in learning more about the online shopping behavior. Who is currently using online grocery shopping, and who are potential users? Will current online shoppers maintain their online shopping spend post-Covid-19; will they demand the same products online; will their expectations for promotions and services change?

Methodology

We surveyed shoppers in Connecticut, Massachusetts, New Jersey, New York, and Pennsylvania, a region in the U.S. that was one of the most heavily affected at that time by the Covid-19 disease. A survey panel was recruited by Qualtrics, and survey data were collected May 21-26, 2020.

Respondents self-described the type of area in which they lived as being rural, urban, or suburban, with 26.7% indicating that they lived in a rural area, 37.2% from a suburban area, and 36.2% from an urban area (Table 1). The Census Bureau has definitions for urban and rural areas. Using these definitions, 87.3% of the population in the five state region surveyed lives in urban areas and 12.7% in rural areas. Therefore, our survey over represents the rural population in the region.

Table 1. Respondents Living in Urban versus Rural Areas

	% Urban or Suburban	% Rural
Respondents	73.4	26.7
5-state weighted average ¹	88.3	12.7

¹ Iowa Community Indicators Program

Demographics

Responses to the demographic questions in the survey are presented in Table 2. One psychographic question was included to try to provide additional strength to the analyses. This question asked respondents about how much information or news they follow about covid-19. The purpose of the question was to describe to what degree respondents were worried about the

disease and, therefore, how they might be changing their normal shopping and food preparation habits.

Table 2. Respondent Demographics

Variable	Description	% of respondents
Primary shopper	I am solely or primarily responsible for grocery shopping	69.2
	I typically do at least one-half of the grocery shopping	26.0
	I typically do some, but less than one-half of the grocery shopping	4.2
	I typically do not do any grocery shopping	0.3
	Don't know or am not sure	0.3
Current Employment	I am still employed at the rate of employment prior to the Covid-19 crisis	37.2
	I am still working but not as much as prior to the Covid-19 crisis	13.9
	I am currently furloughed	7.8
	I became unemployed after the Covid-19 crisis hit and am not receiving unemployment	4.7
	I am currently on unemployment due to the Covid-19 crisis	7.2
	I am currently retired	18.5
News regarding Covid-19	Other, please describe	10.7
	I follow as much information about Covid-19 as I can	29.4
	I follow information about Covid-19 every day	44.2
	I follow information about Covid-19 on occasion	23.3
Marital status	None, I do not follow information about Covid-19	2.8
	Single	38.9
	Married	55.1
Household	Other	6.0
	Household size (number)	2.6
Children	Number of children under 18 (number)	0.55
Education	Less than High School	1.0
	High School/GED	20.4
	Some College	16.7
	2-Year College Degree	9.5
	4-Year College Degree	30.1
	Graduate/Professional degree	22.3
Ethnicity	Asian	5.3
	Black/African	6.5
	Caucasian	81.2
	Hispanic/Latinx	5.0
	Indigenous American	0.4
	Pacific Islander	0.3
	Prefer not to answer	0.4

Variable	Description	% of respondents
	Please let us know your preference (describe)	1.0
Household income in 2019 before taxes	I prefer not to say	3.6
	Less than \$20,000	10.6
	\$20,000 - \$39,999	15.4
	\$40,000 - \$59,999	15.1
	\$60,000 - \$79,999	17.2
	\$80,000 - \$99,999	10.8
	\$100,000 - \$119,999	6.3
	\$120,000 - \$139,999	5.1
	\$140,000 - \$159,999	5.1
	\$160,000 - \$179,999	2.3
	\$180,000 - \$199,999	2.9
	\$200,000 or greater	5.5

Results: Shopping during Covid-19

What was happening in stores?

Stores started implementing measures to protect shoppers and workers in mid-March. The measures included shortening store hours to clean and restock shelves and assigning special hours for seniors and/or healthcare workers to shop. Additional measures implemented by some stores included eliminating samples and in-store events and eliminating personal reusable containers or mugs (Walansky 2020).

By the end of March some stores started temperature checks and masks for workers along with sneeze guards at checkout (ABC6 2020 and Wida 2020). Shortly following shortly, stores started implementing essential worker bonuses or wage increases, one-way aisles, limiting the number shoppers in the store at once to decrease store density (Clay 2020 and Dyga 2020).

The Northeast Study Region-Our Findings

Many grocery stores in the region implemented policies to keep their customers and their workers safe from Covid-19. While the vast majority of respondents reported that their primary grocery store was making employees wear masks and asking their customers to wear masks, 16.4% of respondents did not, even though a policy for wearing masks was mandated in all the states surveyed (Table 3). It is possible that either respondents did not observe this in their stores, the mandates were not enforced by all stores, or respondents who shopped online did not observe this.

A majority of respondents also reported that their store had special hours for selected customers, limits the number of shoppers in the store at one time, installed plastic shields at check out, has one-way traffic in their aisles, wipes down carts between customers, and provides hand sanitizer or wipes for customers to use.

In general, fewer urban respondents reported seeing store policies changed due to CV19 than did rural or suburban respondents. The exception is more urban respondents reported stores taking customer's temperature before entering store.

Table 3. Covid-19 Policies Observed in Food Stores

Food store policies	All respondents % of respondents	Rural % of respondents	Suburban % of respondents	Urban % of respondents
Asks customers to wear masks	83.6	85.6	85.9	79.8
Makes workers wear masks	80.8	83.7	85.2	74.1
Has special hours for selected customers, such as seniors or first responders, to shop	68.2	70.2	75.9	58.9
Limits the number of shoppers in the store at one time	68.1	64.4	72.4	66.3
Installed plastic shields at check out	63.8	71.6	67.9	53.9
Has one-way traffic in their aisles	57.2	64.9	67.2	41.1
Wipes down carts between customers	54.4	60.6	59.0	45.0
Provides hand sanitizer or wipes for customers to use	52.9	54.8	56.6	47.9
Takes customer's temperature before entering store	7.6	3.4	5.2	13.1
Wipes down grocery conveyer belts at check out	44.1	50.5	45.2	38.3
Removed food bars and buffets	40.9	41.8	51.4	29.4
Removed bulk foods	14.0	14.4	15.2	12.4

Out-of-Stocks and Item Limits

Stocking up and hoarding resulted in numerous out-of-stocks first noticed in toilet paper and hand sanitizer but soon swept through other departments and products such as flour, yeast, chocolate chips, pasta, canned products, red meats, and others.

Shoppers make choices when items they are looking for are out-of-stock. Choices generally include, substituting for another brand of the same product, substituting another product, waiting until the next shopping trip, or going to another store to find it. If the shopper goes to another store to find the item these are lost sales.

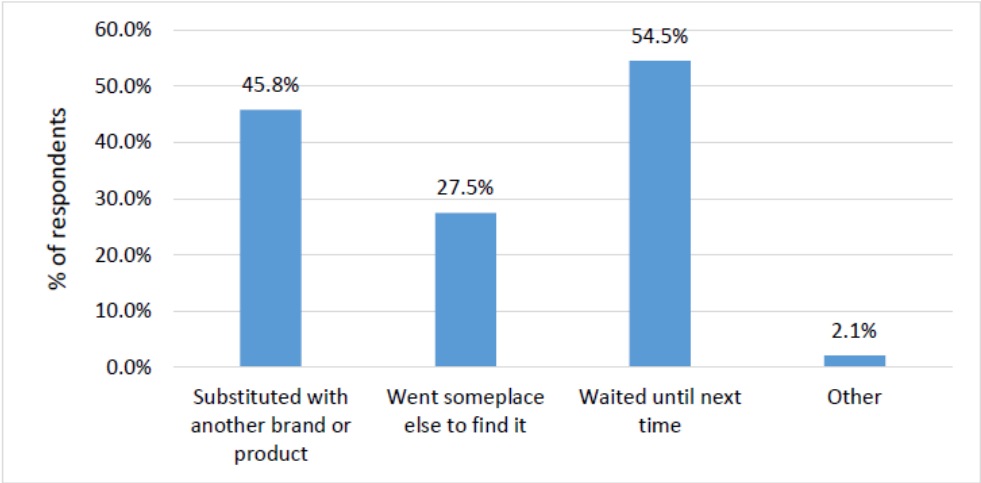
For instance, Emmelhainz, et al. (1991) found the following consumer actions when encountering out-of-stocks:

- 32% purchased a different brand
- 41% purchased different size or variety
- 13% delayed purchase
- 14% went to another store

We asked shoppers how many out-of-stocks they encountered while shopping and what choices they made when they encountered out-of-stocks on items from their shopping list. We found that

86% of respondents said they encountered out of stocks on their shopping lists, and 52% of respondents said the stores were out-of-stock on 1-3 items on their list. In response, 45.8% substituted with another product or brand; 27.5% went elsewhere to find the item(s); and 54.5% waited until next time (Figure 1).

Figure 1. Actions Taken when Finding Out-of-Stocks



In addition to encountering out-of-stocks, shoppers also encountered item limits in stores. This spring, stores frequently limited the number of scarce items that shoppers could purchase at once. These items were usually in limited supply from suppliers such as manufacturers or processors.

Seventy-three percent of respondents encountered shopping limits on items on their list. In response to finding item limits, 16% went to another store to buy more and 41% waited until next time (Figure 2).

Figure 2. Actions Taken when Finding Item Limits



It appears that item limits may not as adversely affect shoppers as out-of-stocks did. In other words, almost 41% were able to buy as many as they needed, and only 16.3% needed to go to another store for more. If there is a greater penalty for out-of-stocks than for item limits, stores may need to be more proactive during national and global events and implement item limits more quickly so out-of-stocks are minimized.

Managing the Shopping Trip

Understanding how shoppers manage their shopping trips will help stores implement policies that help their shoppers navigate their store, whether in-store or online. Perhaps more importantly it will help stores understand the challenges and opportunities their current stores are operating under.

We asked shoppers what they did to manage their shopping trips. Although not all shoppers wore facemasks, 70.8% of respondents did report wearing personal protection such as a face mask (Table 4).

At least 50% of respondents did the following:

- reduced the number of times they shop
- stocked up on items so they do not have to visit the store as often
- reduced the amount of time spent in the store, and
- avoided shopping at busy times.

This information is important because these actions directly impact the ability of stores to communicate with shoppers while they are in the store. The less time shoppers spend in the store, the less time to communicate promotions, new products, meal suggestions, and showcase items to the shopper.

Only 38% reported that they use a store where they feel confident about their precautions; 27% managed their shopping by ordering online; and 13% had groceries delivered.

Many of these customer behaviors may reduce the ability of a store to use normal marketing and operations to engage customers. The implication of several of these shopping behavior changes, for instance number of times go to the store, stock up so I don't have to go to the store as much, etc. is that stores that use "high touch" and "high service" strategies may need to emphasize "easy-in, easy-out", packaged perishables, and availability of online services.

These behaviors may benefit stores with different operational strategies. Limited assortment stores and smaller stores may benefit from shoppers who prefer to move quickly through the store and reduce the time spent in-store.

Table 4. Actions Taken to Manage Your Shopping Trip

What do you do to manage your shopping?	% of respondents
Wear personal protection, such as face mask	70.8
Reduce the number of times I go to the grocery store	59.5
Stock up on items so I don't have to visit the store as frequently	57.9
Reduce the amount of time spent in the store	52.9
Avoid shopping at busy times	52.4
Us a store where I feel confident about their precautions	37.6
Order online	27.0
Get my groceries delivered	13.4

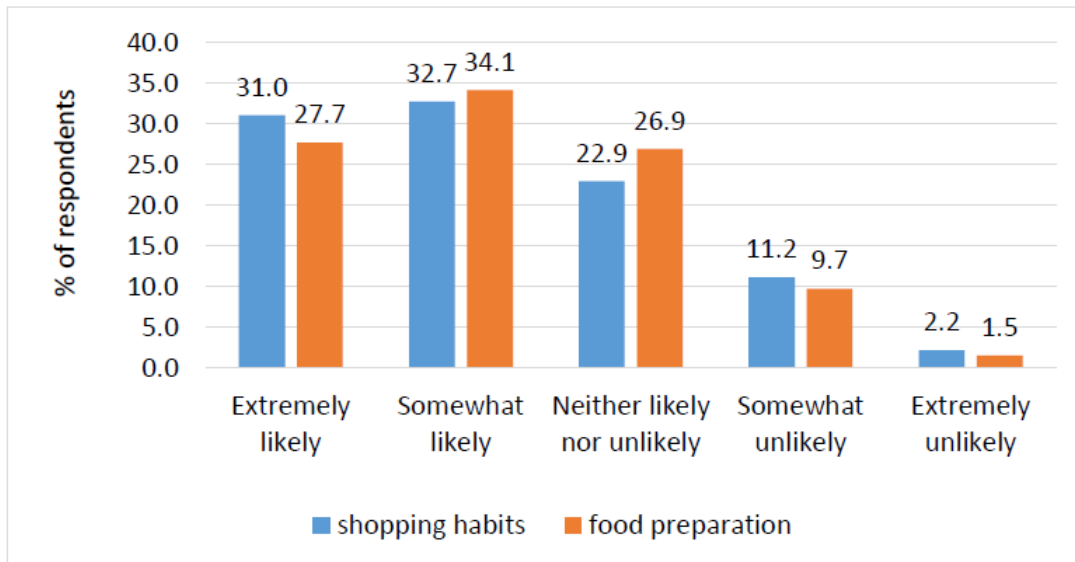
Returning to former habits

Early in the pandemic, companies were wondering when, or if, consumer habits would return to normal. When asked how likely they were to go back to their former, pre-Covid 19 shopping habits once the outbreak subsides, respondents reported they were very likely to return to their former habits. Although 63.7% of respondents said they were extremely or very likely to return to their former shopping habits, nonetheless, 36.7% were either not willing to commit or said they were extremely or very unlikely to return to former shopping habits.

As the pandemic continues and with shopping "habits" still unsettled, the likelihood of fully returning to former habits seems less likely. Retail shopping models are continuing to evolve. Online shopping has become universally accessible with almost all major retailers providing curbside pickup and many providing delivery.

As with shopping habits, people anticipate returning to their old food preparation habits post covid (Figure 3). Food preparation at home, as well as shopping habits will be influenced by the economy, inflation, and food prices as well as the business and institution shut-downs that occurred this spring. These economic factors are still evolving.

Figure 3. Likelihood of Returning to Former Food Shopping and Preparation Habits



IMPLICATIONS

Food Purchases in Relation to Past Crises, 2008 Great Recession and Natural Disasters

Consumers stock up on bread, milk, water, and canned goods in the days before a major storm as well as before price increases, product shortages, or during major product promotions. In addition, stores see buying spikes for staple pantry items after natural disasters that include shelf stable items, such as beans, rice, pasta. They may also see sales increases for indulgence items, although these subsided once a region emerges from the disaster (Shoup 2020).

To forecast shopping behavior on these occasions and manage out-of-stocks, retailers have long gathered data about what consumers purchase before and after natural disasters. They use data such as past sales, weather forecasts, radio announcements to predict the level of buying behavior and the types of items that people will stockpile in advance of extreme weather.

Although past natural disasters have helped stores understand consumer panic-buying behavior, the stay-at-home orders and business shutdowns across the U.S. due to Covid-19 left grocery retailers reeling. The geographic scope of the stay-at-home orders, larger than any natural disaster, plus food service shutdowns (a channel that usually takes 25%-30% of the volume of food), and consumer fear and uncertainty about when things would open back up, elicited unprecedented changes in shopping behavior (Crowe 2020 and Redman 2020).

Food operators should develop tactics to mitigate the factors involved in panic-buying and thus, hopefully, reduce out-of-stocks and the need for item limits. In turn, reductions in panic-buying will reduce the demand shocks at retail and reduce demand shocks upstream in the supply chain.

Yuen, et al. (2020) examined the literature and describe possible reasons for the pandemic panic-buying. They suggest four factors influence panic-buying: 1) people's perception of the threat and the scarcity of products, 2) fear of the unknown caused by negative emotions and uncertainty, 3) coping behavior where panic buying is a way to relieve anxiety and regain

control, and 4) social psychological factors regarding the influence of the person's social network. Deeper examination of these factors and how they can be mitigated would greatly benefit the food system.

Now, as the pandemic exhibits for longer than expected, a recession seems possible. Cho et al. (2018) found that food spending dropped 7% in real terms between 2007-2009 when households responded to the great recession by eating out less and eating at home more. Household may start recessionary grocery shopping soon if they have not already. These include such activities as taking advantage of sales, promotions, and coupons as well as buying lower-cost substitutions, shopping value stores, and buying more private label products.

We might expect a slow recovery from pandemic shopping. When a recovery starts, intense at-home cooking and food preparation might be the first to ease up. Consumers want convenience and extensive food preparation may not be possible when more people go back to normal work situations. People will also want to leave their home and a return to eating out, or finding a way to eat out, will be very attractive.

References

- ABC6. 2020. "Walmart to start employee temperature checks before each shift" WOAI/KABB Staff. Tuesday, March 31st 2020.
- Ballotpedia. 2020. "States That Issued Lockdown and Stay-at-Home Orders in Response to the Coronavirus (COVID-19) Pandemic, 2020" June 17, 2020
- Cho, Clare, Jessica E. Todd, and Michelle Saksena. September 2018. "Food Spending of Middle-Income Households Hardest Hit by the Recession. *Amber Waves*. U.S. Department of Agriculture, Economic Research Service.
- Clay, Jarrod. 2020 "Walmart limiting number of customers allowed in stores due to coronavirus" ABCNews3340 WSYX/WTTE. Friday, April 3rd 2020.
- Crowe, Emily. 2020. "How consumer behavior is forever changing the grocery, CPG industry." *SmartBrief*. April 29, 2020.
- Dyga, Stefanie. 2020. "Walmart implements one-way aisles in some stores to limit spread of coronavirus" ABCNews3340 WSYX/WTTE. Sunday, April 26th 2020
- Emmelhainz, Margaret A., James R. Stock, and Larry W. Emmelhainz. 1991. "Consumer Responses to Retail Stock-outs." *Journal of Retailing*. Summer 1991; 67, 2.
- Iowa Community Indicators Program. "Urban Percentage of the Population for States, Historical".
- Kumcu, A., and P. Kaufman. September 2011. "Food Spending Adjustments During Recessionary Times," *Amber Waves*, U.S. Department of Agriculture, Economic Research Service.
- Nevo, A., and A. Wong. 2015. "The Elasticity of Substitution between Time and Market Goods: Evidence from the Great Recession," Working Paper No. 21318, National Bureau of Economic Research, Cambridge, MA U.S. Census Bureau.
- Redman, Russell. 2020. "How the coronavirus crisis is changing grocery shopping." *Supermarket News*. Apr 3, 2020.
- Shoup, Mary Ellen. 2020. "IRI and FMI: What can past crises teach us about grocery shopping behavior during the coronavirus pandemic?" Food Navigator-USA. 01-Apr-2020.
- Walansky, Aly. 2020. "Kroger, Walmart and more grocers limit store hours amid coronavirus outbreak." Today. March 16, 2020, 5:02 PM EDT.
- Wida, Erica Chayes. 2020. "Walmart, Kroger and more install Sneeze Guards to Help Protect Customers Cashiers." Today. March 25, 2020, 5:07 PM EDT.

OTHER A.E.M. EXTENSION BULLETINS

EB No	Title	Fee (if applicable)	Author(s)
2020-15	The Covid-19 Shopper: Shopping Habits during Covid-19		Park, K., Brumberg, A., and Yonezawa, K.
2020-14	The Covid-19 Shopper: Online Shopping		Park, K., Brumberg, A., and Yonezawa, K.
2020-13	Enterprise Tool for Eastern United States Small Vineyard Management		Davis, T. J., and Gómez, M. I.
2020-12	Broccoli Production Enterprise Budgets		Davis, T.J. and Gomez, M. I.
2020-11	Cost of Establishment and Development of Concord Grapes in the Lake Erie Region of New York - 2020		Davis, T.J., Gómez, M.I., and Martin, K.
2020-10	Six Year Trend Analysis 2018, New York State Dairy Farms, Selected Financial and Production Factors		Karszes, J., and Skellie, J.
2020-09	NY FarmNet 2019 Program Evaluation		Parseghian, A., and Downes, K.
2020-08	Dairy Replacement Programs: Costs and Analysis Summer 2019		Karszes, J. and Hill, L.
2020-07	Dairy Farm Business Summary New York State 2018		Karszes, J, Hill, L, Christman, A, and Knoblauch, W.
2020-06	Sensitivity Analysis of Profits for V. Vinifera Grapes in the Finger Lakes Region of New York - 2019		Davis, T., and Gomez, M.
2020-05	Progress of the Dairy Farm Report Selected Financial and Production Factors Dairy Farm Business Summary New York State, 2019 153 Farms		Karszes, J., Hill, L., and Knoblauch, W.
2020-04	Business Tools for NYS Berry Growers		Williams, K., Kalaitzandonakes, M., Gómez, M.
2020-03	Regional Grass Fed Beef Supply Chain		Kalaitzandonakes, M., Gómez, M., and Peters, C.

Paper copies are being replaced by electronic Portable Document Files (PDFs). To request PDFs of AEM publications, write to (be sure to include your e-mail address): Publications, Department of Applied Economics and Management, Warren Hall, Cornell University, Ithaca, NY 14853-7801. If a fee is indicated, please include a check or money order made payable to Cornell University for the amount of your purchase. Visit our Web site (<http://dyson.cornell.edu/outreach/#bulletins>) for a more complete list of recent bulletins.