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Food Purchase Decisions of Millennial Households Compared to Other Generations

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Abstract

Do the purchasing decisions of Millennial households, headed by those born after 1980, differ significantly from the rest of the population? This report uses Information Resources, Inc.'s Consumer Network dataset to investigate how Millennial households allocate their food-at-home budget, breaking monthly purchases out by food category. Evidence shows that Millennials exhibit a higher preference for convenience than do other generational cohorts when making food-at-home purchases, with the largest budget shares going to food categories dominated by ready-to-eat foods. Additionally, Millennials spend less money, overall, on food at home and make fewer trips to the grocery store. These findings differ slightly for low-income Millennials and for Millennials who were of working age during the Great Recession (December 2007-June 2009). This latter group demonstrates whether the recession may have fundamentally altered Millennial shopping behavior through its negative impact on employment and earnings.

Keywords: Millennials, diet quality, budget shares, food expenditures, food at home, ready to eat, time allocation, prepared foods

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Food Purchase Decisions of Millennial Households Compared to Other Generations

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What Is the Issue?

Millennials, those born between 1981 and the mid-2000s, are now the largest, most diverse living generation—surpassing Baby Boomers—in the United States. As such, their purchasing behavior heavily influences the current retail landscape. They are more diverse and have higher levels of education (on average) than previous generations. In addition, some of them began establishing careers during the Great Recession (December 2007-June 2009), an economic downturn that likely affected their food spending.

Millennials will be an important driver in the economy for years to come. Their grocery store habits may change as they age, but current differences from older generations could have implications for future food demand. Market analysis has shown that this generation is demanding healthier and fresher food and spending less of their expenditures on food at home (FAH). This report focuses on associations between generation and food purchasing decisions using 2014 as a representative year. It looks at food spending differences by income within generations, using per capita income as a way to control for different household sizes. Additional analysis looks at food purchasing decisions within the Millennial generation by age and income.

What Did the Study Find?

How much are people spending? While each preceding, older generation spends more on FAH than the younger generation after it, there seems to be a distinct difference between the oldest and youngest generations—the spending patterns of Traditionalists (born before 1946) and Baby Boomers (born 1946-65) and those of Gen X'ers (born 1965-80) and Millennials (for this report, born between 1981 and 1996) are very similar. Within each generation, households with higher per capita incomes and higher total per capita food expenditures have higher food-at-home expenditures. Of course, consumers adapt their purchasing behaviors depending on budgetary limits, which are determined not only by income but by family size. For instance, Millennials who are early in their careers may earn less than Gen X'ers but their food budget may stretch farther than higher earning Gen X'ers with larger families and more mouths to feed.

How often do people food shop? Traditionalists make the most foodstore trips per month of all generations, and the frequency of visits is generally lower with each successive generation. Millennials frequent foodstores the least. Higher income (per capita) seems to reduce the frequency of foodstore trips as well. Traditionalists, who spend more on FAH per capita, also frequent foodstores more often. Traditionalists are of retirement age and thus may have the leisure time to frequent foodstores more often.

In addition, younger generations may increasingly prefer to eat outside the home, with reduced foodstore trips only becoming more prominent as per capita income rises; in short, as households

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become richer, food away from home (FAFH) may crowd out FAH consumption. Millennials consume food in a restaurant or bar around 30 percent more often than any other generation.

What foods are people buying? Wealthier households tend to buy more primary/unprocessed ingredients, reducing their purchases of processed foods and starchy carbohydrates like pasta and increasing their purchases of fruit and vegetables. Millennial households with lower per capita income have a greater tendency to make more FAH purchases than do higher income Millennial households.

Among all generations, Millennials devote the smallest share of food expenditures to *grains, white meat, and red meat*. Though Millennials spend less on FAH in total, they allocate more proportionately to *prepared foods, pasta, and sugar/sweets* than any other generation.

When partitioning by income per capita, *fruit expenditure* shares for Millennials essentially matched those of Traditionalists, who allocate the largest share to fruits. Moreover, as Millennials become richer, they apportion more of their FAH budget to vegetables, suggesting that the Millennial generation may have a stronger preference for fruits and vegetables compared to older generations.

How much time do people devote to food consumption and preparation? Millennials spend, on average, 12 minutes less eating and drinking than Traditionalists, who devote the most time toward those activities at 77 minutes per day. However, all four generations spend essentially the same amount of time in secondary eating (i.e., eating a snack while watching a movie).

Millennials, however, spend significantly less time on food preparation, presentation, and cleanup—55 minutes less than Gen X'ers, who spend the most time at 143 minutes. This time observation supports the finding that Millennials purchase more ready-to-eat foods; nearly two-thirds of Millennials reported buying some form of prepared food within the prior 7 days, suggesting a preference for time savings.

By separating Millennials into “recession Millennials,” those who likely entered the job market during the Great Recession (2007-09), and younger “non-recession Millennials,” who likely entered the job market after the recession, we can see whether these two groups have different spending patterns.

- “Recession Millennials” purchase more FAH overall than “non-recession Millennials,” even when they have similar incomes. This difference in purchasing behavior may be attributed to changes in earning trajectories due to the recession.
- However, when comparing higher (per capita) income recession and non-recession Millennials, their food spending patterns (FAH and FAFH) are similar, suggesting that the recession may have only affected lower income and middle-income “recession Millennial” food shopping behaviors. This could be because higher income Millennials were less affected by the recession or were wealthy enough to maintain food purchasing patterns.

How Was the Study Conducted?

We used two datasets to conduct our analysis. The Information Resource Inc.'s (IRI) 2014 Consumer Network data sample includes over 116,000 distinct households from across the United States. This report focuses on a smaller subset (consisting of around 28,000 households) that includes not only UPC-coded purchases but purchases of random-weight items like fresh fruits and vegetables. The data also provide rich demographic information that allows the panel to be sorted by generation. After sorting, the types of purchases made were analyzed by classifying them into 1 of 22 broad food categories.

To complement our food purchase findings, we also provide statistics from the American Time Use Survey (ATUS) and the Healthy Eating Module, 2014, on time use associated with food consumption, preparation, and purchase. The survey includes data for nearly 25,000 individuals selected randomly from a subset of households that participated in the Current Population Survey (CPS). The ATUS is a U.S. Bureau of Labor Statistics survey, while the Healthy Eating Module is maintained by USDA's Economic Research Service. The data provide a recall of the individual's time use for the previous day as well as demographic and geographical data.

Introduction

Consumer food choices and dietary quality are central to the study of health outcomes and their related costs, longevity, and food security. As an extension of previous research investigating the healthfulness of consumers' grocery purchases (Volpe and Okrent, 2012; Hiza et al., 2013) and diet quality among working-age adults (Todd, 2014), this report explores how food purchasing decisions and time allocation related to food acquisition/preparation differ based on the head of household's generational cohort. Specifically, our approach assesses consumers' shopping baskets based on their expenditure shares in key food categories, such as fruits, vegetables, prepared foods, and meats. Further, our study explores the time spent on activities related to food consumption.

Considerable research has been devoted to logging what foods Americans are eating and how this affects overall diet quality (Kennedy et al., 1999; Hiza et al., 2013). Okrent and Kumcu (2016) found that over a quarter of food-at-home (FAH) purchases were for ready-to-eat or ready-to-cook food items. Other research has focused on the increasing prevalence of food-away-from-home (FAFH) consumption and how this trend has contributed to deteriorating diet quality (Mancino and Kinsey, 2008; Todd et al., 2010; Mancino et al., 2010). While increased FAFH consumption may be contributing to reduced diet quality, the majority of the average household's food budget is still allocated to FAH purchases. According to the U.S. Bureau of Labor Statistics' Consumer Expenditure Survey, the average U.S. consumer unit spent \$4,015 on FAH and \$3,008 on FAFH in 2015. During the most recent recession (2007-09), the reduction in FAFH consumption accounted for an estimated 20 percent of the overall improvement in diet quality (Todd, 2014).

While we analyze all households, this report focuses on Millennial shopping behaviors. Millennials are now the largest living generation—surpassing Baby Boomers—in the United States, and their purchasing behavior greatly influences the current retail landscape (U.S. Census Bureau, 2015). Understanding Millennial food purchasing decisions is important because they are a direct reflection of diet quality, which can affect future health outcomes. In addition, Millennials are a unique generation to study in that they are more racially diverse, more highly educated, and more technologically literate than earlier generations (Council of Economic Advisors, 2014). Of further interest, many older Millennials were seeking employment for the first time during the Great Recession of 2007-09, and the relative lack of employment opportunities may have caused persistent, negative income effects (Kahn, 2010). In fact, some research has found that Millennials were still not establishing careers or their own households even after the recovery (Fry, 2013). This could delay such milestone purchases as first-time homes. Real wages for “recession Millennials” have also stayed relatively stagnant compared to Baby Boomers at the same age, despite being more educated on average (Carter, 2014).

It is reasonable to expect that Millennials would exhibit different shopping behavior than other generations. Millennials place more importance on convenience and experiential attributes. For example, Millennials shop more frequently at gas stations; use same-day delivery services; and are more likely to buy organic food, hot sauce, energy drinks, and artisanal alcohol beverages (Tuttle, 2015). These preferences will continue to shape the consumer landscape as Millennial buying power increases in prominence.

While the scope of this analysis does not allow us to distinguish generational effects from age effects—for instance, we can expect Millennial shopping behavior to change as that generation ages—the differences are still instructive. To the extent that there are pronounced differences

in current shopping behavior across generations, they could indicate an enduring effect on food demand. We know that as individuals age and household size grows, such life events have an impact on what households purchase. For example, having more children living in a household has been found to increase the amount of time spent preparing food at home (Mancino and Newman, 2007), and having more children has been found to exert a positive influence on the mother's consumption of a healthy diet (Dubowitz et al., 2007). However, we also know that food consumption behavior and diets change over time, and a cross-generational perspective on how these food behaviors differ at a point in time can be instructive for understanding future food market trends.

Data

Our analysis uses two datasets to compare Millennial food purchasing and consumption behaviors to previous generations. Information Resources, Inc.'s (IRI) 2014 Consumer Network data decompose household per capita expenditures by food category, frequency of foodstore trips each month, and store format. IRI data provide information on what was purchased, how much was purchased, how much it cost, and where it was bought. The 2014 sample includes over 116,000 distinct households from across the United States. However, because we wanted to capture all purchases—including all random-weight items, such as fresh fruits, vegetables, and meats—we restrict our analysis to the random-weight (RW) panel of households, numbering roughly 28,000.¹ RW households are those households included in the static panel—a subset of households that reported food purchases every month—that recorded random-weight purchases in addition to Universal Product Code (UPC) items.² The data are also supplemented with demographic information on each household.

Using the demographic data, we construct generational cohort dummy variables: *Millennial*, *GenX*, *BabyBoomer*, and *Traditionalist*. These binary variables were generated by classifying the age of each household head responsible for the grocery shopping. We follow the birth ranges designated to each generation by the Council of Economic Advisers (2014). Households are assigned to one of four generational cohorts based on the age of the household head responsible for the grocery shopping:

- ***Traditionalists*** (also referred to as the Silent Generation)—born before 1946
- ***Baby Boomers***—born between 1946 and 1964
- ***Gen X'ers***—born between 1965 and 1980
- ***Millennials***—born between 1981 and 1996

While the Millennial cohort stretches from 1981 to early 2003, this study ends with 1996 as those born between 1997 and 2003 were not yet 18 years of age in 2014. After applying survey weights to make the sample representative of the U.S. population, Millennial households compose roughly 20 percent of the total IRI panel. Census data, on the other hand, show Millennials accounting for 26 percent of the total population in 2014. Since we classify the household by the age of the primary shopper, our data may be disproportionately lacking in Millennial households because many Millennials might still live with their parents, who are the primary shoppers. For the same reason, Baby Boomers may be overrepresented and Traditionalists underrepresented. The Generation X sample is very similar to the U.S. population share (U.S. Census, 2015).

It should be noted that to truly identify a pure idiosyncratic cohort effect, concepts highlighted by age-period-cohort (APC) models popularized in the sociology and demography literature (Fienberg and Mason, 1985; Hobcraft et al., 1985; O'Brien, 2014) should be considered. When correctly specified, APC models demonstrate that each cohort experiences events uniquely as a result of physiological factors (age effect), current environmental conditions (period effect), and past experi-

¹ IRI determined which households provided reliable food purchasing data, and each household was assigned a weight accordingly. We weighted our statistics such that they are nationally representative.

² All random-weight purchases are self-recorded by the households as they cannot scan a UPC. In the 2014 dataset, each household records the total price for each item.

ences (cohort effect). While we do not conduct an APC analysis in this study, the compound effect of age and cohort factors is informative and illuminates consumer behavior differences across these bundled categories. Table 1 breaks out the makeup of each generation by demographics and purchasing patterns.

Table 1
Summary statistics by generational cohort using 2014 IRI data

	Millennials		Gen X'ers		Baby Boomers		Traditionalists	
Number	23,953		114,324		265,122		76,511	
Variable	Mean	SE	Mean	SE	Mean	SE	Mean	SE
Household size	2.9	0.0088	3.25	0.0043	2.22	0.0022	1.72	0.0028
Household income per capita (\$)	23,502.38	106.0000	24,828.74	50.2053	30,287.40	35.9619	29,695.60	62.1385
Child	0.48	0.0032	0.63	0.0014	0.31	0.0009	0.11	0.0011
Number of children	0.89	0.0072	1.34	0.0037	0.50	0.0016	0.14	0.0015
Daughters	0.41	0.0046	0.65	0.0025	0.23	0.0010	0.06	0.0009
Sons	0.48	0.0049	0.69	0.0026	0.27	0.0011	0.08	0.0011
Shoppers' age	29.91	0.0183	40.65	0.0126	58.20	0.0102	73.65	0.0185
Shoppers' sex	0.86	0.0022	0.78	0.0012	0.73	0.0009	0.68	0.0017
Poverty	0.1	0.0017	0.06	0.0006	0.06	0.0004	0.04	0.0006
Trips	5.33	0.0215	6.27	0.0116	7.33	0.0082	7.78	0.0156
Format count	2.4	0.0078	2.66	0.0038	2.86	0.0025	2.93	0.0046
Supercenter	0.2	0.0026	0.19	0.0012	0.18	0.0008	0.16	0.0013
Supermarket	0.63	0.0031	0.61	0.0014	0.63	0.0009	0.65	0.0017
Club store	0.06	0.0016	0.1	0.0009	0.09	0.0005	0.08	0.0010
Drug store	0.01	0.0006	0.01	0.0003	0.01	0.0002	0.01	0.0004
Convenience store	0.01	0.0005	0.01	0.0002	0.00	0.0001	0.00	0.0002
Mass merchandiser	0.04	0.0012	0.03	0.0005	0.02	0.0003	0.02	0.0005
Other store type	0.04	0.0013	0.04	0.0006	0.05	0.0004	0.06	0.0009
Coupon total	6.07	0.0960	7.85	0.0529	7.84	0.0359	7.51	0.0662
Deal total	15.66	0.1365	18.99	0.0742	17.28	0.0435	14.92	0.0704
Number of distinct stores	3.23	0.0124	3.7	0.0063	4.13	0.0044	4.30	0.0082
Dollar store	0.02	0.0007	0.02	0.0004	0.03	0.0003	0.02	0.0005
<i>Total monthly dollars spent per household by food category per capita</i>								
Fruit	5.34	0.0507	5.17	0.0219	7.35	0.0195	9.79	0.0424
Vegetables	5.91	0.0502	5.64	0.0225	8.29	0.0180	9.86	0.0356
Beans	0.51	0.0075	0.49	0.0036	0.67	0.0030	0.76	0.0059

—continued

Table 1

Summary statistics by generational cohort using 2014 IRI data—continued

	Millennials		Gen X'ers		Baby Boomers		Traditionalists	
Sample size	23,953		114,324		265,122		76,511	
Variable	Mean	SE	Mean	SE	Mean	SE	Mean	SE
Noncarbonated beverages	6.71	0.0571	7.68	0.0311	10.49	0.0278	11.26	0.0489
Carbonated beverages	0.97	0.0107	0.96	0.0047	1.36	0.0040	1.63	0.0077
Fish	7.12	0.0525	8.35	0.0282	10.88	0.0235	10.96	0.0423
Eggs	7.64	0.0702	8.85	0.0544	11.77	0.0344	13.48	0.0855
White meat	6.28	0.0429	7.36	0.0534	10.55	0.0217	12.67	0.0410
Red meat	3.05	0.0725	3.74	0.0411	7.49	0.0457	8.50	0.0884
Snacks	7.50	0.0522	7.79	0.0260	11.03	0.0216	12.45	0.0410
Prepared foods	7.14	0.0497	7.05	0.0240	9.77	0.0192	10.37	0.0367
Grains	9.45	0.0827	11.06	0.0424	16.74	0.0378	17.56	0.0712
Pasta	3.57	0.0290	3.58	0.0135	3.93	0.0120	4.18	0.0195
Nuts	1.06	0.0125	1.00	0.0057	0.97	0.0042	0.85	0.0069
Bakery	2.42	0.0204	2.62	0.0105	3.21	0.0084	3.64	0.0160
Alcohol	0.87	0.0152	0.96	0.0073	1.50	0.0069	1.76	0.0150
Milk	1.80	0.0292	1.96	0.0145	3.44	0.0153	4.12	0.0318
Yogurt	3.32	0.0371	4.08	0.0208	6.53	0.0205	7.12	0.0391
Dairy	2.47	0.0323	3.00	0.0195	4.55	0.0166	3.82	0.0263
Other	4.21	0.0407	4.41	0.0206	5.16	0.0153	4.44	0.0270
Sugar and sweets	1.92	0.0234	1.87	0.0111	2.35	0.0093	2.55	0.0201
Baby foods	1.11	0.0367	0.54	0.0114	0.17	0.0046	0.13	0.0069
Total monthly expenditure	93.89	0.4542	102.31	0.2413	144.37	0.1858	158.70	0.3435
<i>Expenditure share per household by food category</i>								
Fruit	5.71%	0.0004	5.17%	0.0002	5.11%	0.0001	6.28%	0.0002
Vegetables	5.99%	0.0004	5.36%	0.0002	5.75%	0.0001	6.26%	0.0002
Beans	0.53%	0.0001	0.49%	0.0000	0.48%	0.0000	0.50%	0.0001
Noncarbonated beverages	7.01%	0.0005	7.48%	0.0002	7.32%	0.0002	7.16%	0.0003
Carbonated beverages	1.11%	0.0002	1.00%	0.0001	1.03%	0.0000	1.12%	0.0001
Fish	7.74%	0.0005	8.48%	0.0002	7.84%	0.0001	7.18%	0.0002
Eggs	8.17%	0.0006	8.38%	0.0003	7.91%	0.0002	7.99%	0.0004
White meat	7.19%	0.0004	7.62%	0.0002	7.70%	0.0001	8.46%	0.0002
Red meat	2.52%	0.0005	2.85%	0.0002	4.06%	0.0002	4.32%	0.0004
Snacks	8.06%	0.0005	7.68%	0.0002	7.69%	0.0001	8.02%	0.0002
Prepared foods	7.48%	0.0004	6.85%	0.0002	6.85%	0.0001	6.60%	0.0002

—continued

Table 1

Summary statistics by generational cohort using 2014 IRI data—continued

	Millennials		Gen X'ers		Baby Boomers		Traditionalists	
Sample size	23,953		114,324		265,122		76,511	
Variable	Mean	SE	Mean	SE	Mean	SE	Mean	SE
Grains	9.58%	0.0006	10.37%	0.0003	11.34%	0.0002	10.68%	0.0003
Pasta	4.05%	0.0003	3.79%	0.0001	2.96%	0.0001	2.87%	0.0001
Nuts	1.19%	0.0002	1.02%	0.0001	0.71%	0.0000	0.55%	0.0001
Bakery	3.10%	0.0003	3.03%	0.0001	2.57%	0.0001	2.66%	0.0001
Alcohol	0.92%	0.0002	0.93%	0.0001	1.05%	0.0001	1.12%	0.0001
Milk	1.70%	0.0003	1.74%	0.0001	2.15%	0.0001	2.32%	0.0002
Yogurt	3.93%	0.0005	4.29%	0.0002	4.75%	0.0001	4.73%	0.0002
Dairy	2.73%	0.0004	3.04%	0.0002	3.29%	0.0001	2.56%	0.0002
Other	4.28%	0.0004	4.13%	0.0002	3.55%	0.0001	2.70%	0.0002
Sugar and sweets	2.08%	0.0002	1.85%	0.0001	1.63%	0.0001	1.64%	0.0001
Baby foods	1.25%	0.0004	0.58%	0.0001	0.12%	0.00003	0.08%	0.00004
Total number of items that were national brand	52.21	0.2783	61.74	0.1464	57.83	0.0834	50.17	0.1316
Percent of purchases that were national brands	0.59	0.0012	0.61	0.0005	0.59	0.0003	0.56	0.0006
Percent of purchases that were private label	0.19	0.0010	0.19	0.0004	0.19	0.0003	0.20	0.0005
Total number of items that were private label	17.08	0.1224	19.54	0.0655	18.50	0.0379	17.31	0.0613
Percent of food items that were processed	0.5	0.0010	0.51	0.0004	0.49	0.0003	0.48	0.0005
Total number of food items that were considered processed by household	42.18	0.2048	49.23	0.1066	46.10	0.0604	41.34	0.0963
Total number of items the household purchased	86.01	0.4024	100.19	0.2125	96.29	0.1223	87.96	0.1967

SE = standard error. Source: USDA, Economic Research Service using data from IRI, 2014.

After creating generational groups and further disaggregating our data by income deciles, we make comparisons within the Millennial group and also across generational groups. To determine whether the group differences were statistically different from each other, we conduct t-tests on all the comparative statistics across income deciles and generation. For cross-generational comparisons, we compare the relevant generation-income statistic to the equivalent Millennial-income statistic. For within-Millennial comparisons, we also conducted t-tests comparing non-recession Millennials with recession Millennials.

While total income plays an important role in determining the household food budget, it does not fully inform us about the purchasing parity from household to household. Household size also plays an important role in determining the household food budget. For example, Millennial households early in their careers may earn less than their Gen X'er counterparts and so spend less on food overall, but Gen X households also have larger families on average and may spend less money on food per person than a smaller household. To ensure household-to-household comparability, our analysis uses per capita measures of income to partition households into 10 income deciles.³

In addition to IRI data, we also produce statistics using the American Time Use Survey (ATUS) and its supplement, the Healthy Eating Module, to examine if there are generational differences in time allocated to food consumption that coincide with purchasing behaviors revealed by the IRI data. Data from ATUS are procured and maintained by the U.S. Bureau of Labor Statistics (BLS), while the Healthy Eating Module is maintained by USDA's Economic Research Service (ERS). In this analysis, we use 2014 data from ATUS and the Healthy Eating Module, which include nearly 25,000 individuals, each selected randomly from a pool of individuals who had participated in the Current Population Survey (CPS). Data are collected based on a 24-hour recall of time allocation for all activities the previous day. ATUS also documents demographic and geographic information of its participants, which we use to assign individuals to their generation group (table 2).

Table 2
Summary statistics by generational cohort using American Time Use Survey and Healthy Eating Module, 2014

	Millennials	Gen X'ers	Baby Boomers	Traditionalists
Number	58,646	24,042	55,849	42,442
Variable	<i>Percent of eating location* by generation</i>			
Respondent's home or yard	35.96	38.87	41.10	49.47
Respondent's workplace	7.49	7.16	7.39	1.83
Someone else's home	3.44	4.08	3.00	3.02
Restaurant or bar	2.30	1.61	1.82	1.75
	<i>Time allocation by activity (in minutes) by generation</i>			
Total amount of time spent in primary eating	66	66	69	76
Total amount of time spent in secondary eating	28	24	27	29
Food preparation, presentation, cleanup	88	143	136	101
Total hours worked per week	20	25	32	24
Percent of individuals who purchased prepared food from a deli, carry-out, delivery food, or fast food within the last 7 days	62.3%	56.4%	59%	46.7%

*Note: We only display a partial list of locations. For a comprehensive list of all locations, please contact the authors.

Source: U.S. Bureau of Labor Statistics, American Time Use Survey, 2014.

³ The IRI demographic data report household income in ranges, with the exception of those earning over \$99,999 per year. The dataset lists these households as earning greater than \$99,999. To arrive at the household income per capita, we took the mean of each income range and divided it by the number of individuals in the household. However, since we did not have a range for those earning more than \$99,999 (14 percent of households), we left their income as \$99,999 per year and again divided by the number of members living in the household. We realize this is a limitation of our data.

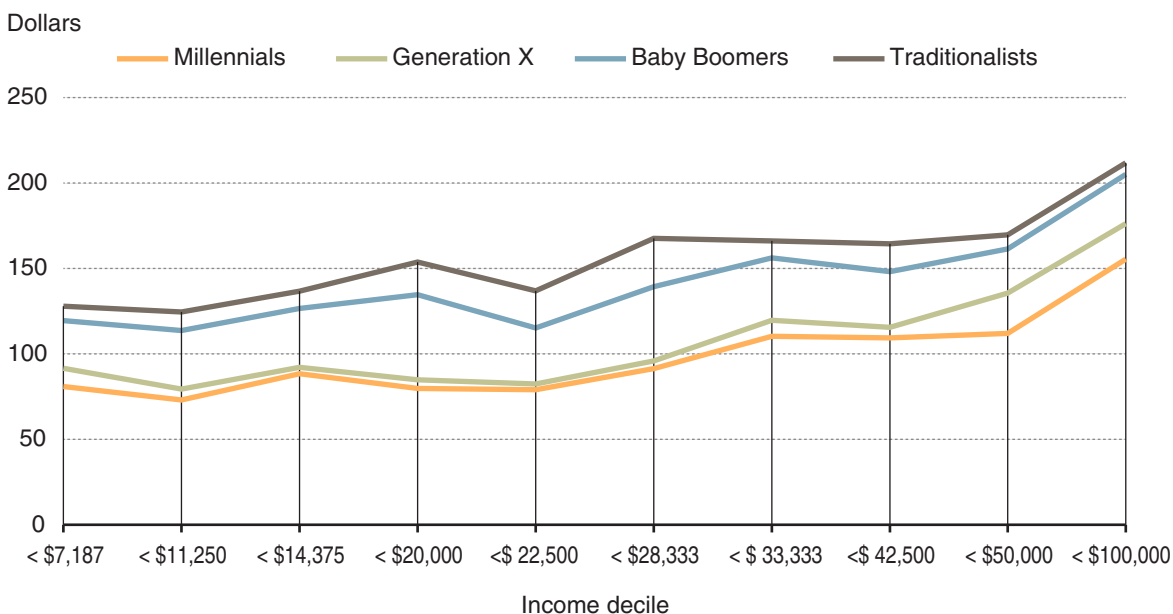
This report adds to the existing literature by focusing on food shopping behaviors of Millennials and comparing that behavior with other generations, uncovering policy-relevant findings that should appeal to a wide range of food marketing analysts, USDA food and nutrition experts, and food industry professionals.

How Much Are People Spending?

Millennials and Gen X'ers spend the least money on food at home (FAH) per capita across all income levels.⁴ As income increases, there is a slight positive and statistically significant effect on per capita FAH expenditure for some income deciles (figure 1).⁵ While each preceding, older generation spends more on FAH than the younger generation after it, there seems to be a distinct difference between the oldest and youngest generations—the spending patterns of Traditionalists and Baby Boomers and those of Gen X'ers and Millennials are very similar. The differences may reflect a structural change in food consumption where individuals of all ages have slowly shifted toward more food consumption outside of the home, with younger generations exhibiting the strongest preferences for food away from home (FAFH) and consequently reducing total demand for FAH. Data from the Consumer Expenditure Survey (CES), conducted by the U.S. Bureau of Labor Statistics, seem to confirm this: while all individuals have increased FAFH expenditures over the past 30 years, Millennials allocate the highest proportion of their food budget to FAFH (Thompson, 2016).⁶

Figure 1

Total average monthly food-at-home (FAH) expenditures per capita, by generational cohort and per capita income decile, 2014



Source: USDA, Economic Research Service using Information Resources, Inc. data, 2014.

⁴ In addition to conducting t-tests that compare expenditure shares by income across generations, we also conduct t-tests to compare expenditure share differences *within* each generation across income deciles. We find evidence of potential income effects, which may affect expenditure share and should be explored further in a regression analysis. For example, when looking at Millennials each expenditure share on fruit per income decile was highly significant, with an upward trend for fruit expenditure as income rises. When comparing expenditures on fruit by income decile, middle-income households show a plateau in expenditure share, but the differences are significant at the highest income deciles and significantly lower below the median income.

⁵ The findings are insignificant between the 40th and 50th, 70th and 80th, and 80th and 90th income deciles.

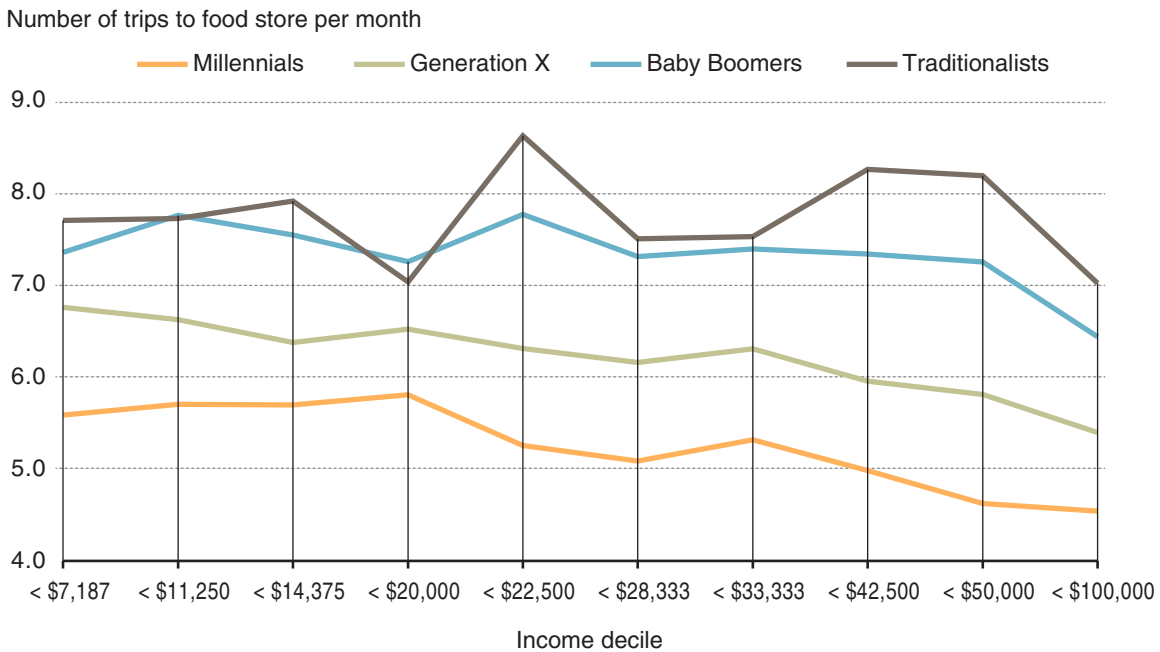
⁶ The data we use do not include food-away-from-home purchases. However, the U.S. Bureau of Labor Statistics' Consumer Expenditure Survey shows that Millennials spent, on average, 46 percent of their food dollars (per month) away from home in 2014, whereas the average American consumer spent 42 percent away from home.

How Often Do People Food Shop?

Traditionalists (with the exception of households at the 40th income percentile, earning less than \$20,000 per capita) make the most foodstore trips per month of all generations, and frequency generally decreases with each successive generation (figure 2). Millennials frequent foodstores the least. Higher per capita income seems to reduce the frequency of foodstore trips as well. These observations align with consumer per capita expenditure patterns: Millennials spend less on groceries, so their patronizing foodstores less frequently makes sense. It is equally sensible that Traditionalists, who spend more on FAH per capita, also frequent foodstores more often. Traditionalists are of retirement age and thus may have the leisure time to frequent foodstores more often. In addition, younger generations may increasingly prefer to eat outside the home, and the reduction in foodstore trips only becomes more prominent as per capita income rises; in short, as households become richer, FAFH may crowd out FAH consumption.

Figure 2

Monthly trips to food stores, by generational cohort and income per capita decile, 2014



Source: USDA, Economic Research Service using Information Resources, Inc. data, 2014.

Expenditure Shares by Food Category

Using purchase data from IRI, we categorize food into 22 broad categories: fruits, vegetables, beans, nuts and seeds, milk, yogurt, other dairy, white meat, red meat, fish and seafood, eggs, grains, pasta, bakery items, snacks, prepared foods, sugar and sweets, carbonated beverages, noncarbonated beverages, other foods, baby food, and alcohol.⁷ Each food purchase is already categorized in the IRI data by product type, and we use these groupings to categorize foods into the aforementioned categories.

Categorizing most purchases (such as fruits, vegetables, milk, etc.) is fairly straightforward. However, we created our own definitions for the snacks and prepared foods categories. For food items that did not clearly fit into the bakery items, sugar and sweets, and “other foods” categories (all categories that include many ready-to-eat items), we devised our own sorting method to designate whether an item was considered a prepared food or snack. Particularly, we define a prepared food as any item that requires minimal to no preparation after purchase—either it is ready to eat or heat and serve. Essentially, if the respondent is paying a premium for the level of preparation, the item is considered a prepared food. For example, a canned soup that is ready to eat would be considered a prepared food, whereas fresh chicken would not since the consumer would still have to do some level of preparation before he or she could eat the item. Other examples of prepared foods include deli sandwiches, prepared chicken, frozen pizza, and prepared pasta salad from the deli. We defined snack items as items that are not consumed as the main part of a meal. Examples include chips, cookies, and crackers.

Once foods were separated into categories, we calculated monthly expenditure shares by category and household type. We further segment each generation by income decile to determine if there are changes in expenditure shares as per capita income changes, using t-tests for statistical significance. Tables 3-6 show results across income for each generation; results are statistically significant across income decile and generational cohort. Millennial shoppers generally purchase a larger share of prepared foods, pasta, and sugar/sweets than the other generational cohorts (figure 3). Millennials devote the smallest share of food expenditures to grains, white meat, and red meat. Though Millennials spend less on FAH in total, they allocate more proportionately to prepared foods, pasta, and sugar/sweets than any other generation. This supports recent findings that over a quarter of a household’s FAH food budget is spent on ready-to-consume and ready-to-eat foods (Okrent and Kumcu, 2016).

⁷ For a full list of the foods included in each category, see table A1 in Appendix A.

Table 3

Summary statistics by generation and income per capita decile*, 2014

	Millennials									
	Income per capita decile									
	< \$7,187					< \$11,250				
	All	Non-Rec.	Rec.	Diff.	SE	All	Non-Rec.	Rec.	Diff.	SE
Total monthly expenditure per capita (\$)	80.88	81.78	79.83	1.955	(2.327)	73.09	70.58	76.2	-5.620	(1.830)
Number of trips	5.59	5.875	5.248	0.627	(0.135)	5.70	5.854	5.514	0.340	(0.130)
Total monthly dollars spent per household by food category per capita										
Fruit	3.39	3.742	2.985	0.757	(0.172)	3.64	3.566	3.738	-0.172	(0.185)
Grains	8.83	9.113	8.512	0.601	(0.393)	7.76	7.299	8.322	-1.022	(0.324)
Pasta	3.48	3.573	3.368	0.205	(0.159)	3.21	3.027	3.445	-0.418	(0.140)
Prepared foods	6.50	6.574	6.42	0.155	(0.267)	5.52	5.36	5.711	-0.351	(0.200)
Red meat	1.71	2.242	1.102	1.141	(0.286)	1.02	0.817	1.282	-0.465	(0.131)
Sugar and sweets	1.15	1.009	1.305	-0.296	(0.0892)	1.53	1.563	1.498	0.0653	(0.100)
Vegetables	3.85	3.918	3.769	0.148	(0.178)	3.44	3.628	3.216	0.413	(0.144)
White meat	6.04	6.132	5.926	0.206	(0.232)	5.76	5.504	6.077	-0.573	(0.200)
Expenditure share per household by food category										
Fruit	4.5%	4.8%	3.9%	0.00930	(0.00221)	5.0%	4.8%	5.1%	-0.00326	(0.00239)
Grains	11.0%	11.4%	10.7%	0.00690	(0.00386)	10.2%	9.7%	10.7%	-0.00907	(0.00342)
Milk	1.5%	4.7%	4.2%	0.00446	(0.00199)	1.5%	4.5%	4.4%	0.000367	(0.00182)
Pasta	4.5%	7.6%	7.7%	-0.00124	(0.00220)	4.5%	7.2%	7.7%	-0.00440	(0.00251)
Prepared foods	7.7%	1.7%	1.1%	0.00651	(0.00192)	7.5%	1.1%	1.6%	-0.00463	(0.00184)
Sugar and sweets	1.5%	1.3%	1.5%	-0.00195	(0.00105)	2.0%	2.1%	1.7%	0.00316	(0.00110)
Vegetables	4.8%	4.7%	4.7%	0.0000503	(0.00186)	4.7%	4.9%	4.4%	0.00530	(0.00194)
White meat	7.8%	7.8%	7.8%	0.000290	(0.00239)	8.3%	8.2%	8.3%	-0.00105	(0.00261)

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Table 3

Summary statistics by generation and income per capita decile*, 2014—continued

	Millennials									
	Income per capita decile									
	<\$14,375					<\$20,000				
	All	Non-Rec.	Rec.	Diff.	SE	All	Non-Rec.	Rec.	Diff.	SE
Total monthly expenditure per capita (\$)	88.42	79.66	95.69	-16.03	(2.054)	79.83	74.7	87.99	-13.28	(3.102)
Number of trips	5.69	5.765	5.637	0.128	(0.131)	5.80	5.739	5.909	-0.169	(0.186)
Total monthly dollars spent per household by food category per capita										
Fruit	4.64	3.97	5.197	-1.227	(0.194)	4.68	4.278	5.33	-1.053	(0.356)
Grains	9.38	8.496	10.12	-1.624	(0.360)	7.67	7.363	8.15	-0.787	(0.464)
Pasta	3.42	3.251	3.568	-0.317	(0.140)	3.08	2.879	3.394	-0.515	(0.198)
Prepared foods	6.65	6.08	7.13	-1.050	(0.236)	6.55	5.757	7.804	-2.047	(0.384)
Red meat	1.91	1.707	2.082	-0.374	(0.249)	1.96	1.464	2.746	-1.282	(0.321)
Sugar and sweets	1.56	1.399	1.701	-0.302	(0.0928)	1.81	1.936	1.614	0.321	(0.138)
Vegetables	5.10	4.062	5.968	-1.905	(0.195)	4.94	4.11	6.261	-2.151	(0.364)
White meat	6.38	5.996	6.699	-0.702	(0.240)	5.83	5.744	5.958	-0.214	(0.330)
Expenditure share per household by food category										
Fruit	5.4%	5.1%	5.5%	-0.00368	(0.00215)	6.0%	6.1%	5.7%	0.00430	(0.00366)
Grains	10.0%	10.2%	9.8%	0.00392	(0.00322)	9.5%	9.6%	9.2%	0.00409	(0.00439)
Milk	1.8%	4.1%	3.8%	0.00302	(0.00161)	1.4%	4.4%	3.7%	0.00699	(0.00225)
Pasta	4.0%	7.6%	7.2%	0.00399	(0.00224)	4.1%	7.7%	8.3%	-0.00572	(0.00330)
Prepared foods	7.5%	1.9%	1.9%	-0.000655	(0.00232)	8.0%	1.8%	3.4%	-0.0156	(0.00393)
Sugar and sweets	1.9%	1.7%	2.0%	-0.00218	(0.00110)	2.3%	2.6%	1.8%	0.00802	(0.00172)
Vegetables	5.8%	5.1%	6.2%	-0.0108	(0.00185)	5.9%	5.5%	6.5%	-0.0108	(0.00285)
White meat	7.6%	8.0%	7.2%	0.00823	(0.00249)	7.4%	7.7%	6.9%	0.00863	(0.00314)

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Table 3

Summary statistics by generation and income per capita decile*, 2014—continued

	Millennials									
	Income per capita decile									
	<\$22,500					<\$28,333				
	All	Non-Rec.	Rec.	Diff.	SE	All	Non-Rec.	Rec.	Diff.	SE
Total monthly expenditure per capita (\$)	79.07	73.23	87.55	-14.32	(2.305)	91.37	93.08	89.23	3.850	(4.038)
Number of trips	5.26	4.932	5.725	-0.794	(0.130)	5.08	5.199	4.939	0.260	(0.132)
Total monthly dollars spent per household by food category per capita										
Fruit	4.72	4.581	4.933	-0.352	(0.242)	5.22	6.396	3.737	2.659	(0.392)
Grains	8.78	8.519	9.16	-0.641	(0.433)	10.17	7.863	13.06	-5.199	(1.434)
Pasta	3.00	3.084	2.88	0.204	(0.143)	3.04	3.266	2.758	0.508	(0.189)
Prepared foods	5.83	5.127	6.849	-1.723	(0.238)	6.17	6.709	5.487	1.222	(0.354)
Red meat	2.20	1.242	3.603	-2.361	(0.390)	3.16	2.92	3.47	-0.550	(0.491)
Sugar and sweets	1.81	1.883	1.713	0.170	(0.125)	1.83	2.145	1.438	0.708	(0.199)
Vegetables	4.62	3.982	5.55	-1.569	(0.252)	5.80	6.141	5.369	0.771	(0.423)
White meat	5.63	5.452	5.883	-0.431	(0.213)	5.97	6.288	5.581	0.707	(0.407)
Expenditure share per household by food category										
Fruit	6.3%	6.6%	5.7%	0.00866	(0.00253)	5.9%	6.6%	4.9%	0.0178	(0.00369)
Grains	10.0%	10.2%	9.6%	0.00550	(0.00335)	9.0%	7.6%	10.7%	-0.0304	(0.00596)
Milk	1.6%	4.4%	3.4%	0.00995	(0.00168)	1.8%	3.8%	3.5%	0.00246	(0.00234)
Pasta	4.1%	6.9%	7.6%	-0.00629	(0.00218)	3.7%	6.9%	6.4%	0.00538	(0.00303)
Prepared foods	7.2%	1.7%	3.0%	-0.0127	(0.00280)	6.7%	2.9%	3.7%	-0.00723	(0.00490)
Sugar and sweets	2.3%	2.7%	1.7%	0.0102	(0.00134)	2.1%	2.4%	1.7%	0.00683	(0.00170)
Vegetables	5.6%	5.3%	6.0%	-0.00776	(0.00218)	6.1%	6.2%	5.8%	0.00411	(0.00339)
White meat	7.6%	7.8%	7.3%	0.00462	(0.00277)	6.9%	6.9%	6.8%	0.00134	(0.00318)

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Table 3

Summary statistics by generation and income per capita decile*, 2014—continued

	Millennials									
	Income per capita decile									
	<\$33,333					<\$42,500				
	All	Non-Rec.	Rec.	Diff.	SE	All	Non-Rec.	Rec.	Diff.	SE
Total monthly expenditure per capita (\$)	110.30	106.2	114.8	-8.600	(3.299)	109.45	113.6	105.6	8.062	(2.597)
Number of trips	5.32	5.482	5.131	0.352	(0.127)	4.98	5.151	4.827	0.324	(0.100)
Total monthly dollars spent per household by food category per capita										
Fruit	6.87	7.225	6.475	0.750	(0.463)	6.13	6.115	6.136	-0.0212	(0.243)
Grains	9.72	9.455	10.02	-0.560	(0.493)	10.39	10.84	9.973	0.869	(0.449)
Pasta	3.94	3.872	4.017	-0.145	(0.209)	3.95	3.86	4.026	-0.166	(0.170)
Prepared foods	8.38	7.765	9.078	-1.313	(0.353)	8.24	8.22	8.26	-0.0398	(0.287)
Red meat	3.45	2.86	4.102	-1.241	(0.534)	4.22	4.348	4.099	0.249	(0.439)
Sugar and sweets	2.09	1.896	2.315	-0.419	(0.159)	2.57	2.454	2.67	-0.217	(0.140)
Vegetables	7.66	7.298	8.057	-0.759	(0.394)	7.52	7.756	7.298	0.458	(0.295)
White meat	6.46	6.285	6.66	-0.375	(0.287)	6.94	6.963	6.92	0.0435	(0.253)
Expenditure share per household by food category										
Fruit	6.0%	6.4%	5.6%	0.00780	(0.00271)	6.0%	5.6%	6.3%	-0.00747	(0.00220)
Grains	8.7%	8.7%	8.7%	-0.000531	(0.00375)	8.8%	8.8%	8.6%	0.00169	(0.00301)
Milk	1.4%	3.8%	3.9%	-0.000312	(0.00224)	2.0%	3.7%	3.7%	0.000476	(0.00157)
Pasta	3.9%	7.1%	8.0%	-0.00969	(0.00275)	3.7%	7.1%	7.7%	-0.00596	(0.00243)
Prepared foods	7.6%	2.6%	2.6%	-0.000264	(0.00313)	7.5%	3.4%	3.0%	0.00393	(0.00282)
Sugar and sweets	2.1%	1.8%	2.2%	-0.00426	(0.00151)	2.4%	2.3%	2.5%	-0.00257	(0.00132)
Vegetables	6.7%	6.6%	6.7%	-0.000856	(0.00261)	6.7%	6.7%	6.7%	0.000861	(0.00218)
White meat	6.2%	6.5%	5.8%	0.00705	(0.00248)	6.6%	6.4%	6.6%	-0.00274	(0.00207)

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Table 3

Summary statistics by generation and income per capita decile*, 2014—continued

	Millennials									
	Income per capita decile									
	<\$50,000					<\$100,000				
	All	Non-Rec.	Rec.	Diff.	SE	All	Non-Rec.	Rec.	Diff.	SE
Total monthly expenditure per capita (\$)	111.99	113.4	110	3.413	(4.169)	155.49	158.6	152.5	6.093	(8.696)
Number of trips	4.62	4.72	4.495	0.224	(0.147)	4.54	4.513	4.568	-0.0548	(0.192)
Total monthly dollars spent per household by food category per capita										
Fruit	7.62	7.009	8.453	-1.444	(0.554)	12.12	11.85	12.38	-0.533	(1.239)
Grains	10.75	9.976	11.82	-1.839	(0.809)	13.61	14.43	12.83	1.596	(1.581)
Pasta	4.47	4.693	4.168	0.526	(0.300)	4.54	4.468	4.599	-0.131	(0.445)
Prepared foods	8.82	8.735	8.938	-0.203	(0.516)	11.47	11.75	11.21	0.543	(0.919)
Red meat	6.52	6.523	6.52	0.00274	(0.983)	9.60	11.56	7.738	3.821	(1.834)
Sugar and sweets	2.65	3.075	2.063	1.011	(0.243)	3.70	3.023	4.344	-1.321	(0.435)
Vegetables	9.13	8.811	9.555	-0.744	(0.569)	12.68	12.17	13.17	-0.994	(1.063)
White meat	6.35	6.345	6.355	-0.0103	(0.356)	8.22	8.024	8.414	-0.390	(0.744)
Expenditure share per household by food category										
Fruit	6.7%	6.0%	7.5%	-0.0155	(0.00448)	8.2%	7.7%	8.7%	-0.0104	(0.00723)
Grains	8.7%	8.0%	9.5%	-0.0158	(0.00522)	7.4%	6.8%	7.8%	-0.00940	(0.00603)
Milk	2.4%	4.0%	3.6%	0.00369	(0.00256)	2.1%	2.6%	3.4%	-0.00809	(0.00317)
Pasta	3.9%	7.5%	7.9%	-0.00382	(0.00399)	3.1%	7.2%	7.3%	-0.000713	(0.00529)
Prepared foods	7.8%	4.3%	4.8%	-0.00529	(0.00613)	7.3%	4.8%	4.0%	0.00859	(0.00777)
Sugar and sweets	2.3%	2.6%	1.9%	0.00710	(0.00200)	2.5%	2.1%	2.8%	-0.00714	(0.00315)
Vegetables	7.9%	7.5%	8.4%	-0.00930	(0.00417)	8.1%	7.2%	8.8%	-0.0158	(0.00620)
White meat	6.3%	6.3%	6.1%	0.00183	(0.00398)	5.3%	5.4%	5.2%	0.00136	(0.00441)

In table 2, the column denoted by the "All" rows for Millennials represents the average expenditure share for all Millennials. The difference (Diff.) and standard errors rows for the Millennials column test whether recession and non-recession Millennials' expenditure shares were statistically different.

Table 4

Summary statistics by generation and income per capita decile*, 2014

	Generation X					
	Income per capita decile					
	<\$7,187			<\$11,250		
	Mean	Diff.	SE	Mean	Diff.	SE
Total monthly expenditure per capita (\$)	91.62	10.75	(1.367)	79.37	6.278	(1.074)
Number of trips	6.756	1.171	(0.0795)	6.622	0.920	(0.0743)
Dollars spent by food category per capita						
Fruit	3.322	-0.0695	(0.103)	3.336	-0.306	(0.101)
Grains	11.7	2.862	(0.251)	9.226	1.470	(0.186)
Pasta	3.544	0.0655	(0.0906)	3.174	-0.0401	(0.0774)
Prepared foods	6.59	0.0869	(0.153)	5.579	0.0625	(0.116)
Red meat	1.915	0.200	(0.185)	1.934	0.909	(0.104)
Sugar and sweets	1.078	-0.0677	(0.0493)	1.312	-0.222	(0.0604)
Vegetables	4.037	0.188	(0.103)	3.594	0.150	(0.0827)
White meat	7.014	0.977	(0.137)	6.496	0.736	(0.118)
Expenditure share by food category						
Fruit	3.7%	-0.00728	(0.00122)	4.5%	-0.00389	(0.00128)
Grains	12.1%	0.0103	(0.00216)	11.2%	0.00993	(0.00187)
Milk	4.0%	-0.00440	(0.00110)	4.3%	-0.00188	(0.00100)
Pasta	7.1%	-0.00472	(0.00124)	6.8%	-0.00680	(0.00129)
Prepared foods	1.7%	0.00272	(0.00116)	1.9%	0.00553	(0.00107)
Sugar and sweets	1.2%	-0.00265	(0.000569)	1.6%	-0.00285	(0.000619)
Vegetables	4.4%	-0.00338	(0.00103)	4.7%	0.000843	(0.00107)
White meat	8.1%	0.00301	(0.00135)	8.3%	0.0000629	(0.00141)

—continued

Table 4

Summary statistics by generation and income per capita decile*, 2014—continued

	Generation X					
	Income per capita decile					
	< \$14,375			< \$20,000		
	Mean	Diff.	SE	Mean	Diff.	SE
Total monthly expenditure per capita (\$)	92.22	3.805	(1.284)	84.97	5.144	(1.620)
Number of trips	6.373	0.678	(0.0728)	6.519	0.714	(0.0991)
Dollars spent by food category per capita						
Fruit	4.519	-0.122	(0.120)	4.168	-0.516	(0.173)
Grains	10.75	1.367	(0.211)	9.347	1.681	(0.252)
Pasta	3.56	0.136	(0.0798)	3.227	0.149	(0.0959)
Prepared foods	6.478	-0.176	(0.135)	5.754	-0.792	(0.186)
Red meat	2.428	0.517	(0.147)	2.477	0.518	(0.169)
Sugar and sweets	1.567	0.00332	(0.0538)	1.494	-0.318	(0.0744)
Vegetables	4.908	-0.196	(0.116)	4.188	-0.751	(0.173)
White meat	7.375	0.995	(0.432)	6.404	0.577	(0.171)
Expenditure share by food category						
Fruit	4.9%	-0.00441	(0.00118)	5.1%	-0.00819	(0.00192)
Grains	11.0%	0.0106	(0.00178)	10.4%	0.00903	(0.00230)
Milk	4.1%	0.000933	(0.000889)	3.9%	-0.00187	(0.00122)
Pasta	7.0%	-0.00425	(0.00121)	6.6%	-0.0129	(0.00170)
Prepared foods	2.2%	0.00293	(0.00130)	2.3%	-0.000954	(0.00196)
Sugar and sweets	1.7%	-0.00174	(0.000611)	1.8%	-0.00520	(0.000933)
Vegetables	5.2%	-0.00537	(0.00105)	4.9%	-0.00974	(0.00147)
White meat	7.7%	0.00120	(0.00135)	7.8%	0.00453	(0.00169)

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Table 4

Summary statistics by generation and income per capita decile*, 2014—continued

	Generation X					
	Income per capita decile					
	< \$22,500			< \$28,333		
	Mean	Diff.	SE	Mean	Diff.	SE
Total monthly expenditure per capita (\$)	82.42	3.355	(1.208)	95.93	4.564	(2.156)
Number of trips	6.309	1.054	(0.0696)	6.156	1.072	(0.0735)
Dollars spent by food category per capita						
Fruit	4.415	-0.310	(0.123)	5.538	0.320	(0.224)
Grains	9.114	0.333	(0.230)	10.1	-0.0698	(0.660)
Pasta	3.2	0.199	(0.0762)	3.213	0.172	(0.103)
Prepared foods	5.656	-0.173	(0.122)	6.372	0.204	(0.191)
Red meat	2.245	0.0400	(0.184)	3.206	0.0424	(0.263)
Sugar and sweets	1.773	-0.0407	(0.0640)	2.076	0.244	(0.112)
Vegetables	4.247	-0.374	(0.122)	5.199	-0.600	(0.228)
White meat	6.327	0.699	(0.113)	6.936	0.961	(0.211)
Expenditure share by food category						
Fruit	5.5%	-0.00696	(0.00135)	5.9%	0.000661	(0.00194)
Grains	10.5%	0.00432	(0.00182)	9.9%	0.00927	(0.00293)
Milk	4.1%	0.000176	(0.000921)	3.5%	-0.00204	(0.00123)
Pasta	6.8%	-0.00415	(0.00116)	6.7%	0.000262	(0.00157)
Prepared foods	2.3%	0.000346	(0.00143)	2.7%	-0.00582	(0.00245)
Sugar and sweets	2.1%	-0.00171	(0.000741)	2.2%	0.000613	(0.000926)
Vegetables	5.1%	-0.00488	(0.00111)	5.4%	-0.00704	(0.00175)
White meat	7.9%	0.00358	(0.00146)	7.6%	0.00792	(0.00166)

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Table 4

Summary statistics by generation and income per capita decile*, 2014—continued

	Generation X					
	Income per capita decile					
	< \$33,333			< \$42,500		
	Mean	Diff.	SE	Mean	Diff.	SE
Total monthly expenditure per capita (\$)	119.8	9.519	(1.848)	115.6	6.125	(1.440)
Number of trips	6.305	0.988	(0.0740)	5.954	0.972	(0.0579)
Dollars spent by food category per capita						
Fruit	5.676	-1.196	(0.250)	6.166	0.0405	(0.138)
Grains	12.7	2.980	(0.301)	12.12	1.731	(0.254)
Pasta	3.902	-0.0388	(0.117)	3.725	-0.221	(0.0935)
Prepared foods	8.619	0.235	(0.202)	8.058	-0.183	(0.160)
Red meat	4.628	1.183	(0.295)	4.984	0.765	(0.247)
Sugar and sweets	2.143	0.0499	(0.0880)	2.089	-0.477	(0.0763)
Vegetables	6.684	-0.972	(0.212)	7.057	-0.461	(0.163)
White meat	8.817	2.355	(0.168)	7.806	0.865	(0.142)
Expenditure share by food category						
Fruit	4.9%	-0.0106	(0.00151)	5.3%	-0.00630	(0.00122)
Grains	9.8%	0.0111	(0.00210)	9.9%	0.0115	(0.00168)
Milk	3.5%	-0.00372	(0.00124)	3.3%	-0.00351	(0.000860)
Pasta	7.0%	-0.00505	(0.00150)	6.8%	-0.00652	(0.00133)
Prepared foods	3.4%	0.00750	(0.00177)	3.8%	0.00655	(0.00159)
Sugar and sweets	1.8%	-0.00224	(0.000822)	1.8%	-0.00586	(0.000709)
Vegetables	5.5%	-0.0116	(0.00141)	5.8%	-0.00874	(0.00118)
White meat	7.5%	0.0135	(0.00141)	7.1%	0.00593	(0.00117)

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Table 4

Summary statistics by generation and income per capita decile*, 2014—continued

	Generation X					
	Income per capita decile					
	< \$50,000			< \$100,000		
	Mean	Diff.	SE	Mean	Diff.	SE
Total monthly expenditure per capita (\$)	135.6	23.62	(2.321)	176.3	20.84	(4.678)
Number of trips	5.81	1.185	(0.0861)	5.397	0.856	(0.106)
Dollars spent by food category per capita						
Fruit	7.336	-0.282	(0.286)	10.57	-1.556	(0.647)
Grains	13.46	2.709	(0.448)	15	1.391	(0.840)
Pasta	4.198	-0.274	(0.166)	5.058	0.523	(0.247)
Prepared foods	9.087	0.266	(0.285)	11.46	-0.0172	(0.494)
Red meat	9.569	3.047	(0.593)	8.436	-1.162	(0.972)
Sugar and sweets	2.661	0.0131	(0.139)	3.584	-0.118	(0.237)
Vegetables	8.939	-0.186	(0.308)	11.72	-0.959	(0.568)
White meat	8.011	1.662	(0.211)	10.61	2.386	(0.408)
Expenditure share by food category						
Fruit	5.6%	-0.0101	(0.00227)	6.2%	-0.0202	(0.00378)
Grains	9.1%	0.00472	(0.00287)	7.8%	0.00442	(0.00331)
Milk	3.3%	-0.00504	(0.00144)	2.9%	-0.00120	(0.00173)
Pasta	6.6%	-0.0110	(0.00215)	6.3%	-0.00970	(0.00280)
Prepared foods	5.2%	0.00674	(0.00333)	4.1%	-0.00315	(0.00414)
Sugar and sweets	1.9%	-0.00359	(0.00112)	2.1%	-0.00391	(0.00171)
Vegetables	6.6%	-0.0127	(0.00220)	6.5%	-0.0151	(0.00329)
White meat	6.3%	0.000268	(0.00221)	6.5%	0.0115	(0.00245)

*Diff. columns report the difference between the parameter averages subtracted by the corresponding Millennial parameter average by income percentile. SE = standard error.

Source: USDA, Economic Research Service using IRI data, 2014.

Table 5

Summary statistics by generation and income per capita decile*, 2014

	Baby Boomers					
	Income per capita decile					
	<\$7,187			<\$11,250		
	Mean	Diff.	SE	Mean	Diff.	SE
Total monthly expenditure per capita (\$)	119.5	38.66	(1.376)	113.8	40.76	(1.111)
Number of trips	7.352	1.767	(0.0765)	7.756	2.054	(0.0739)
Dollars spent by food category per capita						
Fruit	4.806	1.415	(0.106)	4.836	1.194	(0.117)
Grains	14.76	5.923	(0.238)	15.24	7.482	(0.226)
Pasta	3.599	0.120	(0.0884)	3.585	0.372	(0.0781)
Prepared foods	8.462	1.959	(0.154)	7.86	2.343	(0.118)
Red meat	4.848	3.134	(0.239)	4.078	3.054	(0.143)
Sugar and sweets	1.47	0.324	(0.0545)	1.693	0.159	(0.0609)
Vegetables	5.963	2.113	(0.109)	5.837	2.392	(0.0914)
White meat	9.477	3.440	(0.144)	8.849	3.090	(0.121)
Expenditure share by food category						
Fruit	4.0%	-0.00437	(0.00120)	4.2%	-0.00743	(0.00123)
Grains	12.4%	0.0131	(0.00209)	12.7%	0.0248	(0.00187)
Milk	3.2%	-0.0128	(0.00107)	3.4%	-0.0109	(0.000970)
Pasta	7.1%	-0.00485	(0.00119)	7.1%	-0.00384	(0.00128)
Prepared foods	2.8%	0.0137	(0.00120)	2.8%	0.0146	(0.00110)
Sugar and sweets	1.1%	-0.00280	(0.000563)	1.4%	-0.00514	(0.000622)
Vegetables	5.0%	0.00265	(0.00103)	5.2%	0.00581	(0.00107)
White meat	8.3%	0.00517	(0.00129)	8.0%	-0.00228	(0.00138)

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Table 5

Summary statistics by generation and income per capita decile*, 2014—continued

	Baby Boomers					
	Income per capita decile					
	< \$14,375			< \$20,000		
	Mean	Diff.	SE	Mean	Diff.	SE
Total monthly expenditure per capita (\$)	126.6	38.17	(1.144)	134.7	54.87	(1.745)
Number of trips	7.542	1.847	(0.0695)	7.253	1.449	(0.0983)
Dollars spent by food category per capita						
Fruit	5.385	0.744	(0.108)	6.376	1.692	(0.189)
Grains	16.27	6.887	(0.209)	15.86	8.195	(0.288)
Pasta	3.64	0.216	(0.0751)	3.77	0.692	(0.0998)
Prepared foods	8.976	2.322	(0.130)	9.434	2.887	(0.199)
Red meat	5.263	3.351	(0.161)	4.962	3.004	(0.208)
Sugar and sweets	1.592	0.0282	(0.0519)	1.935	0.123	(0.0793)
Vegetables	6.636	1.532	(0.109)	7.543	2.603	(0.185)
White meat	9.887	3.507	(0.133)	10.94	5.118	(0.250)
Expenditure share by food category						
Fruit	4.3%	-0.0101	(0.00112)	4.7%	-0.0125	(0.00189)
Grains	12.3%	0.0236	(0.00169)	11.4%	0.0187	(0.00230)
Milk	3.0%	-0.00980	(0.000822)	3.0%	-0.0107	(0.00120)
Pasta	7.1%	-0.00302	(0.00115)	6.9%	-0.00980	(0.00170)
Prepared foods	3.4%	0.0148	(0.00128)	3.4%	0.00958	(0.00204)
Sugar and sweets	1.2%	-0.00652	(0.000580)	1.4%	-0.00905	(0.000922)
Vegetables	5.3%	-0.00464	(0.000981)	5.6%	-0.00280	(0.00146)
White meat	8.1%	0.00475	(0.00130)	8.2%	0.00798	(0.00169)

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Table 5

Summary statistics by generation and income per capita decile*, 2014—continued

	Baby Boomers					
	Income per capita decile					
	< \$22,500			< \$28,333		
	Mean	Diff.	SE	Mean	Diff.	SE
Total monthly expenditure per capita (\$)	115.2	36.18	(1.218)	139.3	47.94	(2.136)
Number of trips	7.764	2.508	(0.0687)	7.305	2.221	(0.0704)
Dollars spent by food category per capita						
Fruit	5.346	0.622	(0.123)	6.934	1.716	(0.223)
Grains	14.66	5.878	(0.236)	15.92	5.752	(0.660)
Pasta	3.456	0.455	(0.0752)	3.711	0.670	(0.102)
Prepared foods	8.062	2.233	(0.124)	9.558	3.390	(0.195)
Red meat	4.54	2.335	(0.197)	7.332	4.169	(0.293)
Sugar and sweets	1.724	-0.0903	(0.0637)	2.344	0.513	(0.111)
Vegetables	6.408	1.787	(0.124)	8.007	2.208	(0.230)
White meat	9.068	3.440	(0.118)	10.52	4.546	(0.213)
Expenditure share by food category						
Fruit	4.8%	-0.0143	(0.00130)	5.0%	-0.00827	(0.00190)
Grains	12.1%	0.0211	(0.00179)	11.2%	0.0216	(0.00288)
Milk	3.1%	-0.00906	(0.000883)	2.8%	-0.00864	(0.00118)
Pasta	6.9%	-0.00230	(0.00113)	6.8%	0.000929	(0.00152)
Prepared foods	3.2%	0.00936	(0.00143)	4.2%	0.00911	(0.00246)
Sugar and sweets	1.5%	-0.00784	(0.000715)	1.6%	-0.00469	(0.000893)
Vegetables	5.5%	-0.00111	(0.00108)	5.7%	-0.00382	(0.00172)
White meat	8.0%	0.00432	(0.00144)	7.8%	0.00933	(0.00160)

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Table 5

Summary statistics by generation and income per capita decile*, 2014—continued

	Baby Boomers					
	Income per capita decile					
	< \$33,333			< \$42,500		
	Mean	Diff.	SE	Mean	Diff.	SE
Total monthly expenditure per capita (\$)	156.2	45.92	(1.735)	148.1	38.68	(1.333)
Number of trips	7.388	2.072	(0.0677)	7.333	2.351	(0.0527)
Dollars spent by food category per capita						
Fruit	7.893	1.021	(0.244)	7.862	1.737	(0.127)
Grains	17.8	8.077	(0.270)	17.57	7.180	(0.237)
Pasta	4.32	0.379	(0.121)	4.017	0.0699	(0.0876)
Prepared foods	10.35	1.963	(0.186)	10.02	1.774	(0.148)
Red meat	8.037	4.592	(0.293)	7.556	3.338	(0.236)
Sugar and sweets	2.495	0.402	(0.0833)	2.455	-0.112	(0.0721)
Vegetables	8.949	1.294	(0.205)	8.825	1.307	(0.150)
White meat	11.8	5.340	(0.155)	10.58	3.636	(0.134)
Expenditure share by food category						
Fruit	5.2%	-0.00841	(0.00141)	5.4%	-0.00604	(0.00113)
Grains	11.1%	0.0238	(0.00195)	11.4%	0.0260	(0.00154)
Milk	2.8%	-0.0102	(0.00114)	2.9%	-0.00813	(0.000795)
Pasta	6.7%	-0.00860	(0.00139)	6.7%	-0.00705	(0.00125)
Prepared foods	4.2%	0.0154	(0.00166)	4.2%	0.0102	(0.00146)
Sugar and sweets	1.6%	-0.00443	(0.000766)	1.7%	-0.00694	(0.000670)
Vegetables	5.7%	-0.00916	(0.00134)	6.0%	-0.00725	(0.00110)
White meat	7.8%	0.0165	(0.00130)	7.4%	0.00875	(0.00106)

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Table 5

Summary statistics by generation and income per capita decile*, 2014—continued

	Baby Boomers					
	Income per capita decile					
	< \$50,000			< \$100,000		
	Mean	Diff.	SE	Mean	Diff.	SE
Total monthly expenditure per capita (\$)	161.4	49.42	(2.109)	205.1	49.63	(4.447)
Number of trips	7.248	2.623	(0.0786)	6.437	1.896	(0.0999)
Dollars spent by food category per capita						
Fruit	9.263	1.644	(0.270)	12.71	0.590	(0.630)
Grains	18.11	7.353	(0.414)	18.7	5.094	(0.804)
Pasta	4.12	-0.352	(0.156)	4.752	0.217	(0.228)
Prepared foods	10.79	1.974	(0.269)	12.73	1.256	(0.470)
Red meat	11.96	5.441	(0.529)	12.8	3.204	(0.948)
Sugar and sweets	2.909	0.261	(0.132)	4.351	0.650	(0.227)
Vegetables	10.2	1.077	(0.289)	12.41	-0.276	(0.542)
White meat	10.12	3.768	(0.186)	13.78	5.556	(0.389)
Expenditure share by food category						
Fruit	5.9%	-0.00721	(0.00215)	6.4%	-0.0183	(0.00366)
Grains	10.7%	0.0208	(0.00268)	8.5%	0.0121	(0.00311)
Milk	2.7%	-0.0111	(0.00133)	2.5%	-0.00555	(0.00163)
Pasta	6.7%	-0.0103	(0.00205)	6.2%	-0.0112	(0.00268)
Prepared foods	5.7%	0.0118	(0.00312)	5.0%	0.00583	(0.00398)
Sugar and sweets	1.8%	-0.00436	(0.00105)	2.2%	-0.00316	(0.00162)
Vegetables	6.3%	-0.0156	(0.00207)	6.1%	-0.0190	(0.00318)
White meat	6.6%	0.00365	(0.00207)	7.2%	0.0187	(0.00227)

*Diff. columns report the difference between the parameter averages subtracted by the corresponding Millennial parameter average by income percentile. SE = standard error.

Source: USDA, Economic Research Service using IRI data, 2014.

Table 6

Summary statistics by generation and income per capita decile*, 2014

	Traditionalists					
	Income per capita decile					
	<\$7,187			<\$11,250		
	Mean	Diff.	SE	Mean	Diff.	SE
Total monthly expenditure per capita (\$)	128	47.11	(2.056)	124.5	51.44	(1.609)
Number of trips	7.699	2.114	(0.106)	7.721	2.019	(0.102)
Dollars spent by food category per capita						
Fruit	6.659	3.268	(0.214)	6.686	3.044	(0.177)
Grains	14.59	5.752	(0.427)	15.18	7.423	(0.324)
Pasta	4.086	0.608	(0.190)	3.311	0.0973	(0.0996)
Prepared foods	9.01	2.507	(0.227)	8.516	2.999	(0.188)
Red meat	4.367	2.653	(0.392)	4.69	3.665	(0.287)
Sugar and sweets	1.578	0.432	(0.0814)	1.776	0.242	(0.0893)
Vegetables	7.814	3.964	(0.194)	7.941	4.497	(0.177)
White meat	10.26	4.227	(0.252)	10.83	5.068	(0.191)
Expenditure share by food category						
Fruit	5.0%	0.00577	(0.00160)	5.3%	0.00373	(0.00156)
Grains	11.2%	0.00112	(0.00265)	11.9%	0.0167	(0.00241)
Milk	3.3%	-0.0120	(0.00132)	2.9%	-0.0157	(0.00112)
Pasta	7.4%	-0.00252	(0.00168)	6.7%	-0.00745	(0.00153)
Prepared foods	2.4%	0.00977	(0.00176)	3.2%	0.0184	(0.00193)
Sugar and sweets	1.2%	-0.00260	(0.000731)	1.4%	-0.00539	(0.000819)
Vegetables	6.0%	0.0128	(0.00145)	6.3%	0.0164	(0.00145)
White meat	8.6%	0.00829	(0.00174)	9.2%	0.00951	(0.00178)

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Table 6

Summary statistics by generation and income per capita decile*, 2014—continued

	Traditionalists					
	Income per capita decile					
	< \$14,375			< \$20,000		
	Mean	Diff.	SE	Mean	Diff.	SE
Total monthly expenditure per capita (\$)	136.7	48.30	(1.267)	153.8	73.99	(2.071)
Number of trips	7.91	2.215	(0.0771)	7.032	1.228	(0.114)
Dollars spent by food category per capita						
Fruit	7.357	2.717	(0.127)	9.383	4.699	(0.257)
Grains	15.87	6.487	(0.236)	16.41	8.743	(0.390)
Pasta	3.828	0.404	(0.0833)	4.397	1.319	(0.140)
Prepared foods	9.261	2.607	(0.144)	10.44	3.895	(0.247)
Red meat	6.177	4.265	(0.228)	7.318	5.359	(0.497)
Sugar and sweets	2.037	0.473	(0.0791)	2.993	1.182	(0.163)
Vegetables	8.14	3.036	(0.127)	9.506	4.567	(0.227)
White meat	11.63	5.245	(0.156)	13.16	7.334	(0.257)
Expenditure share by food category						
Fruit	5.5%	0.00149	(0.00119)	6.1%	0.00122	(0.00211)
Grains	11.3%	0.0136	(0.00182)	10.2%	0.00691	(0.00263)
Milk	3.0%	-0.00993	(0.000876)	3.0%	-0.0108	(0.00138)
Pasta	6.8%	-0.00635	(0.00122)	6.9%	-0.00972	(0.00194)
Prepared foods	3.8%	0.0190	(0.00154)	3.4%	0.00983	(0.00252)
Sugar and sweets	1.4%	-0.00441	(0.000654)	1.8%	-0.00461	(0.00114)
Vegetables	5.9%	0.00224	(0.00107)	6.2%	0.00292	(0.00165)
White meat	8.8%	0.0117	(0.00138)	9.0%	0.0157	(0.00199)

—continued

Table 6

Summary statistics by generation and income per capita decile*, 2014—continued

	Traditionalists					
	Income per capita decile					
	< \$22,500			< \$28,333		
	Mean	Diff.	SE	Mean	Diff.	SE
Total monthly expenditure per capita (\$)	137	57.96	(1.434)	167.6	76.26	(2.363)
Number of trips	8.619	3.364	(0.0809)	7.501	2.417	(0.0788)
Dollars spent by food category per capita						
Fruit	7.771	3.047	(0.146)	10.2	4.983	(0.254)
Grains	18.23	9.446	(0.305)	17.7	7.532	(0.689)
Pasta	4.053	1.052	(0.0909)	4.474	1.433	(0.116)
Prepared foods	9.466	3.637	(0.154)	11.13	4.963	(0.225)
Red meat	4.818	2.613	(0.231)	8.706	5.542	(0.387)
Sugar and sweets	1.956	0.142	(0.0754)	2.873	1.042	(0.129)
Vegetables	8.432	3.811	(0.145)	10.26	4.463	(0.252)
White meat	11.49	5.859	(0.150)	14.19	8.213	(0.260)
Expenditure share by food category						
Fruit	5.9%	-0.00304	(0.00142)	6.4%	0.00558	(0.00200)
Grains	12.5%	0.0250	(0.00201)	10.1%	0.0110	(0.00301)
Milk	3.1%	-0.00970	(0.000963)	2.8%	-0.00886	(0.00123)
Pasta	6.8%	-0.00331	(0.00124)	6.4%	-0.00219	(0.00159)
Prepared foods	3.0%	0.00753	(0.00160)	4.0%	0.00764	(0.00260)
Sugar and sweets	1.5%	-0.00781	(0.000792)	1.7%	-0.00394	(0.000970)
Vegetables	6.2%	0.00611	(0.00119)	6.1%	0.000778	(0.00180)
White meat	8.6%	0.0105	(0.00156)	8.8%	0.0192	(0.00175)

—continued

Table 6

Summary statistics by generation and income per capita decile*, 2014—continued

	Traditionalists					
	Income per capita decile					
	< \$33,333			< \$42,500		
	Mean	Diff.	SE	Mean	Diff.	SE
Total monthly expenditure per capita (\$)	166.1	55.84	(1.873)	164.5	55.01	(1.483)
Number of trips	7.524	2.208	(0.0736)	8.254	3.272	(0.0609)
Dollars spent by food category per capita						
Fruit	10.41	3.539	(0.262)	10.24	4.113	(0.152)
Grains	17.5	7.778	(0.312)	18.37	7.976	(0.272)
Pasta	4.424	0.484	(0.119)	4.216	0.270	(0.0941)
Prepared foods	11.1	2.714	(0.205)	10.45	2.209	(0.162)
Red meat	8.805	5.359	(0.351)	10.04	5.821	(0.293)
Sugar and sweets	2.887	0.794	(0.0978)	2.555	-0.0110	(0.0797)
Vegetables	10.48	2.827	(0.221)	10.18	2.660	(0.164)
White meat	13.54	7.082	(0.182)	12.4	5.463	(0.153)
Expenditure share by food category						
Fruit	6.3%	0.00339	(0.00150)	6.5%	0.00481	(0.00122)
Grains	9.9%	0.0120	(0.00206)	10.9%	0.0209	(0.00167)
Milk	2.8%	-0.0110	(0.00117)	2.8%	-0.00901	(0.000837)
Pasta	6.6%	-0.00946	(0.00146)	6.4%	-0.0109	(0.00129)
Prepared foods	4.2%	0.0155	(0.00181)	5.1%	0.0189	(0.00163)
Sugar and sweets	1.8%	-0.00236	(0.000822)	1.6%	-0.00831	(0.000697)
Vegetables	6.3%	-0.00344	(0.00141)	6.3%	-0.00421	(0.00116)
White meat	8.6%	0.0243	(0.00142)	7.9%	0.0142	(0.00115)

—continued

Table 6

Summary statistics by generation and income per capita decile*, 2014—continued

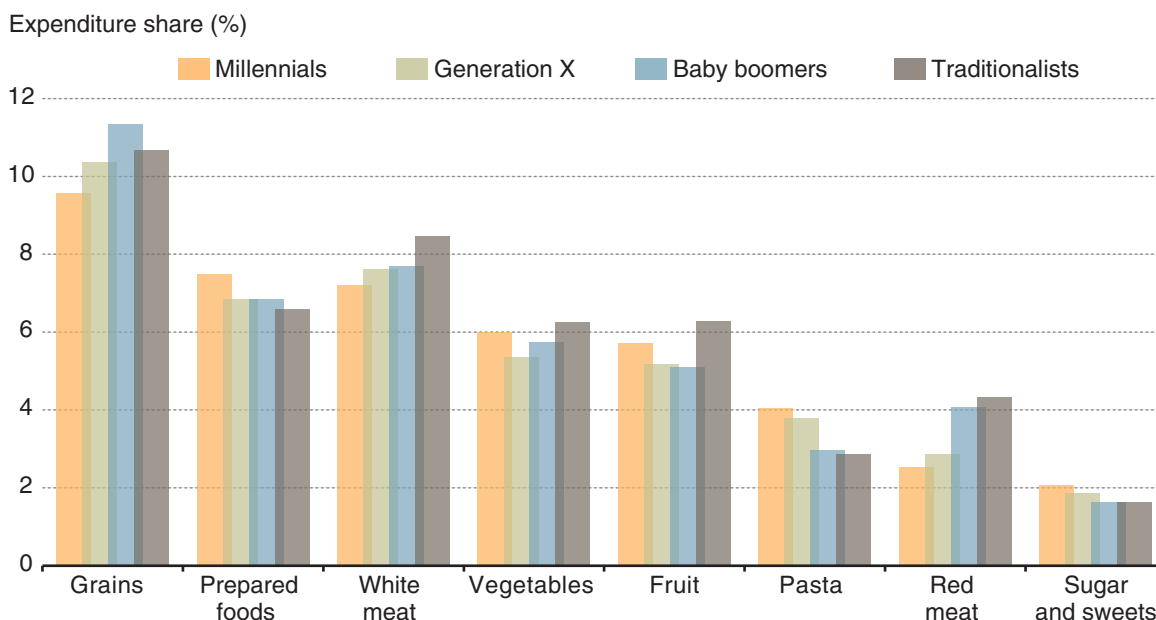
	Traditionalists					
	Income per capita decile					
	< \$50,000			< \$100,000		
	Mean	Diff.	SE	Mean	Diff.	SE
Total monthly expenditure per capita (\$)	169.7	57.67	(2.381)	211.8	56.35	(4.813)
Number of trips	8.184	3.559	(0.0932)	7.018	2.478	(0.112)
Dollars spent by food category per capita						
Fruit	11.27	3.647	(0.312)	15.91	3.784	(0.681)
Grains	19.85	9.096	(0.484)	20.05	6.440	(0.891)
Pasta	3.945	-0.527	(0.165)	4.708	0.173	(0.241)
Prepared foods	10.64	1.820	(0.297)	12.22	0.746	(0.498)
Red meat	12.42	5.902	(0.601)	12.89	3.288	(1.064)
Sugar and sweets	2.498	-0.150	(0.140)	3.719	0.0183	(0.242)
Vegetables	10.9	1.779	(0.312)	13.47	0.787	(0.570)
White meat	12.08	5.732	(0.225)	15.48	7.252	(0.434)
Expenditure share by food category						
Fruit	6.9%	0.00258	(0.00229)	7.7%	-0.00473	(0.00380)
Grains	11.0%	0.0235	(0.00289)	8.7%	0.0133	(0.00330)
Milk	2.5%	-0.0129	(0.00140)	2.4%	-0.00614	(0.00170)
Pasta	6.3%	-0.0143	(0.00215)	5.8%	-0.0152	(0.00277)
Prepared foods	6.3%	0.0178	(0.00338)	5.1%	0.00726	(0.00422)
Sugar and sweets	1.6%	-0.00712	(0.00110)	1.8%	-0.00720	(0.00166)
Vegetables	6.4%	-0.0144	(0.00215)	6.4%	-0.0161	(0.00326)
White meat	7.5%	0.0122	(0.00219)	7.9%	0.0258	(0.00241)

*Diff. columns report the difference between the parameter averages subtracted by the corresponding Millennial parameter average by income percentile. SE = standard error.

Source: USDA, Economic Research Service using IRI data, 2014.

Figure 3

Average household expenditure shares by food category and generational cohort, 2014



Source: USDA, Economic Research Service using Information Resource Inc. data, 2014.

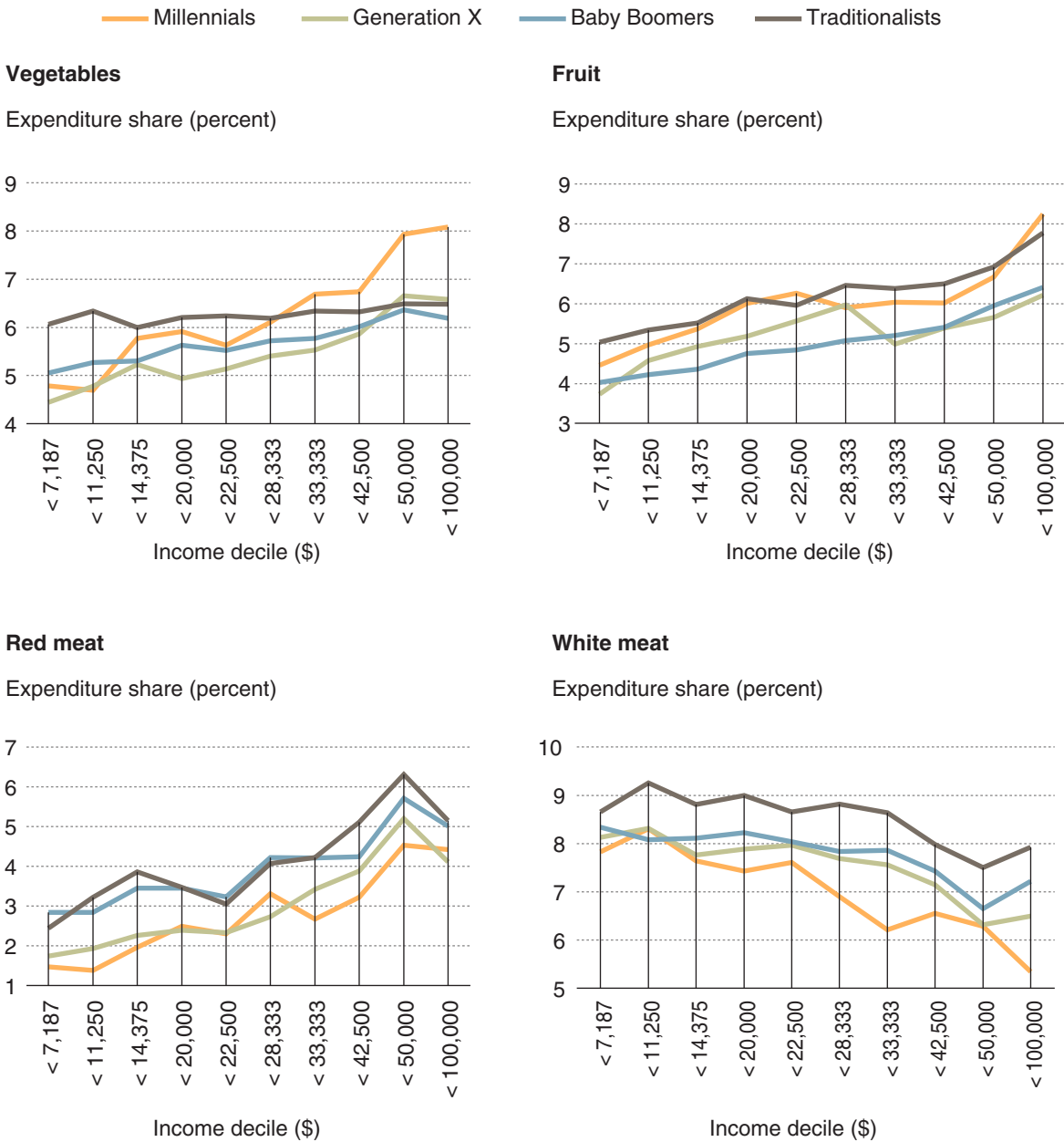
Note: Figure 3 shows the average percentage of the total household budget that was allocated to each selected food group by generation cohort.

Separating expenditure shares by income, some noticeable patterns appear, both for less processed (figure 4a) and more processed foods (figure 4b). For example, wealthier households have higher expenditure shares for vegetables, fruits, and red meat, while the share for white meat decreases with per capita income (table 3). While poorer Millennials assign lower shares of food spending to vegetables, higher income households apportion more of their food budget to vegetables (figure 4a). In fact, the wealthiest Millennials (> \$99,999) dedicate over 1.5 percent more of their food budget to vegetables than Gen X'ers. For Millennials, the expenditure allotment for fruit is similar to Traditionalists across all income levels. Millennials generally allot the lowest shares of their food budgets to red and white meat, though there does seem to be a positive relationship between income and red meat spending and a negative one between income and white meat. There also seem to be consistent generational differences in meat consumption; each expenditure trend for white and red meat decreases with each younger generation (figure 4a). From this, we intuit that Millennials have a stronger preference for fruits and vegetables and less for white and red meat when purchasing FAH compared to older generations.

For foods requiring less preparation for consumption (figure 4b), Millennials allocate the highest budget shares to prepared foods, sugar and sweets, and pasta but the least to grains. The first three categories all require minimal preparation for consumption. Note the slight negative relationship between per capita income and prepared food purchases for the three oldest generations, which is absent in the Millennials trend. Among higher income (per capita) households, across all generations, expenditure shares for sugar and sweets are higher. Grain and pasta purchases exhibit a negative relationship with per capita income; as households become richer, they buy less starchy grains, which are often shelf stable and cheaper, and more perishable foods like meat and complex carbohydrates (like fruits and vegetables).

Overall, Millennials have an increasing appetite for fruits and vegetables as income rises and allocate less to animal proteins, though there is a positive relationship between income and red meat. Millennials also maintain similar expenditure shares for prepared foods and allocate more of their food budgets to sugar and sweets as they become wealthier. They also spend less, proportionately, on grains than older generations and more on pasta (figure 4b).

Figure 4a
Expenditure share of basic ingredients by generational cohort and income per capita decile, 2014

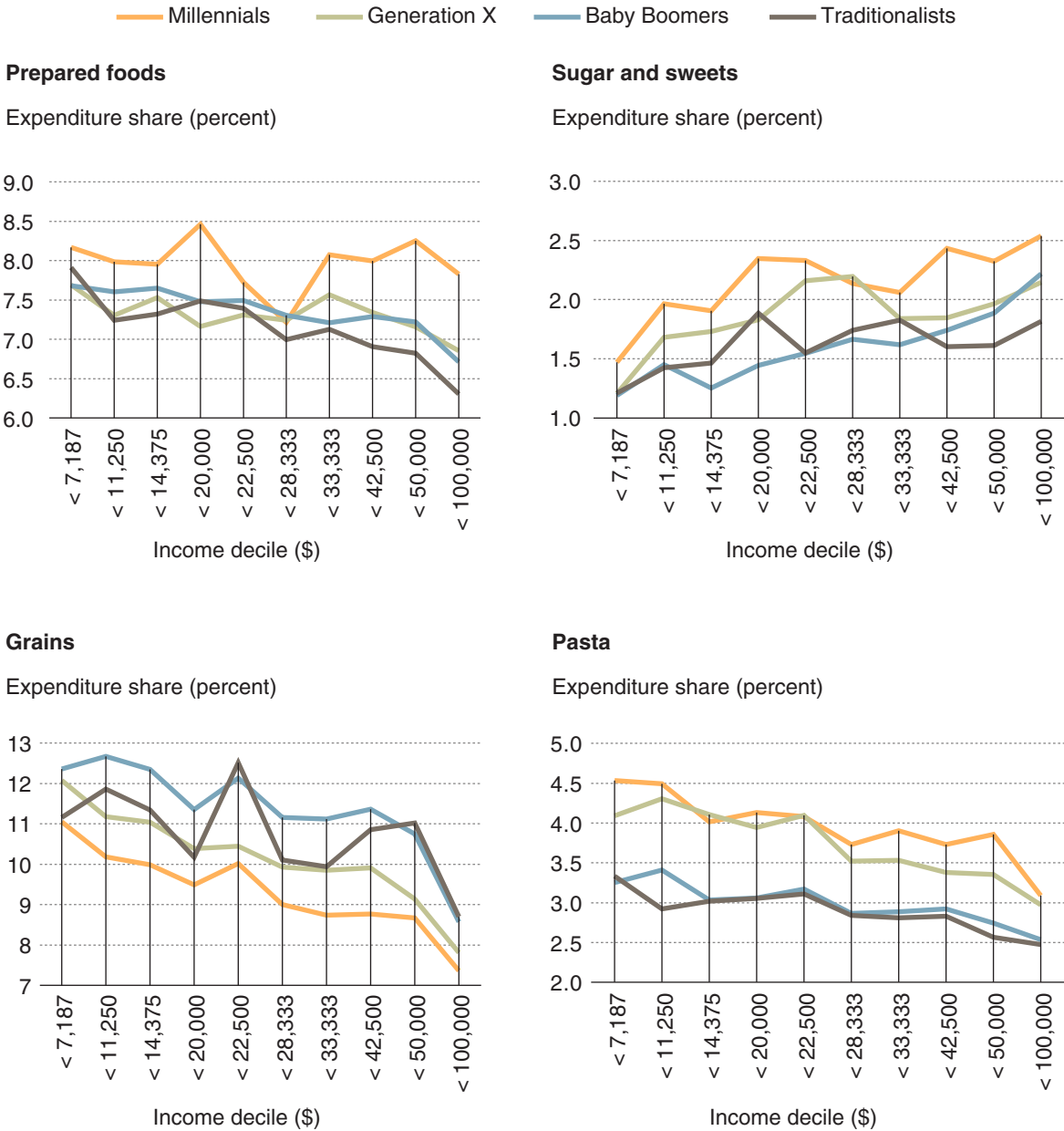


Note: See table 1 for summary statistics. For readability, the axis for each graph has been truncated and/or adjusted; therefore, the scale of each graph is different and should be analyzed independently.

Source: USDA, Economic Research Service using Information Resources, Inc. data, 2014.

Figure 4b

Expenditure share of complex ingredients and processed foods by generational cohort and income per capita decile, 2014



Note: See table 1 for summary statistics. For readability, the axis for each graph has been truncated and/or adjusted, therefore the scale of each graph is different and should be analyzed independently.

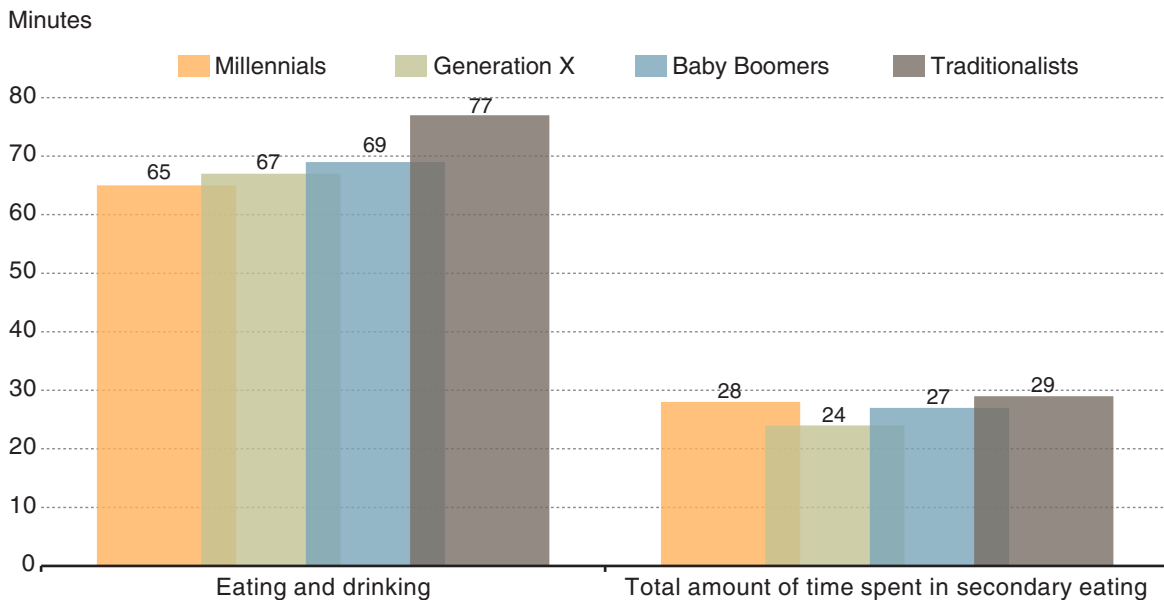
Source: USDA, Economic Research Service using Information Resources, Inc. data, 2014.

How Do Individuals Allocate Their Time Toward Food Consumption and Preparation?

Millennials spend, on average, 12 minutes less eating and drinking than Traditionalists, who devote the most time toward those activities at 77 minutes per day (figure 5). However, all four generations spend essentially the same amount of time in secondary eating.⁸ Millennials may have a higher preference for time savings when it comes to food consumption since they dedicate less time to eating meals than do older generations but allocate equal time to secondary eating or snacking.

Figure 5

Average time allocated to eating-related activities (in minutes) by generational cohort, 2014



Source: USDA, Economic Research Service using Information Resources, Inc. data, 2014.

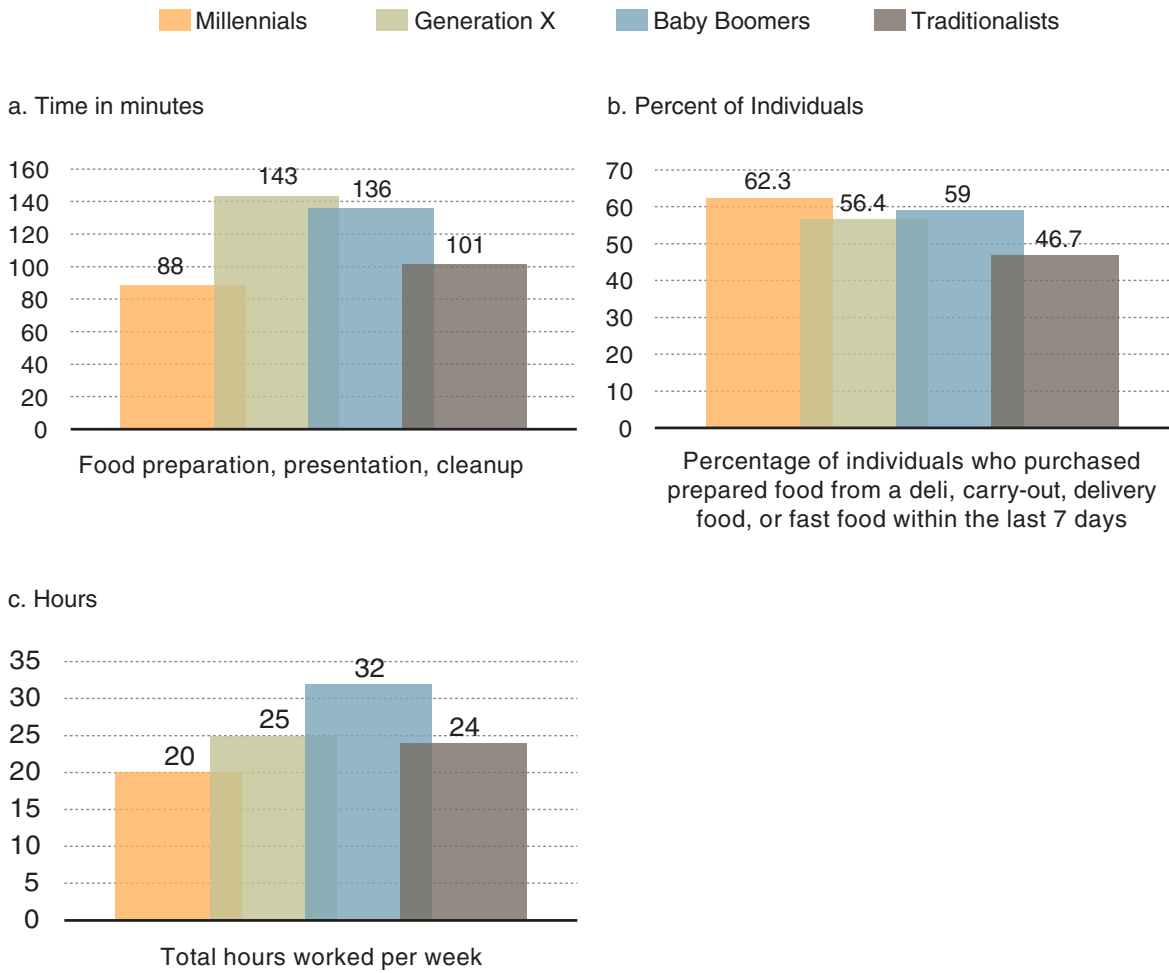
Millennials, however, spend significantly less time on food preparation, presentation, and clean-up—55 minutes less than Gen X’ers, who spend the most time at 143 minutes (figure 6a). This time observation supports the finding that Millennials purchase more ready-to-eat foods; nearly two-thirds of Millennials reported buying some form of prepared food within the prior 7 days, suggesting a preference for time savings. However, of those individuals who participate in the labor force, Millennials worked the least hours (20 per week) of any generational cohort. This seeming anomaly contradicts Aguiar and Hurst (2009), who suggest that increased purchases of ready-to-eat foods may be related to more hours worked.

We also looked at time spent eating and preparing food across per capita income levels for Millennials and found no trend for either activity. In fact, the minutes spent doing both activities essentially stayed the same across per capita income levels. This suggests that Millennial preferences for convenience may be a principal characteristic of the generation.

⁸ In the American Time Use Survey (ATUS), secondary eating is defined as instances where eating is the secondary activity. For example, eating a snack while watching a movie would be considered secondary eating. In ATUS, primary and secondary eating are determined by the individual being surveyed.

Figure 6

Time allocated (in minutes) to food preparation (a), percentage of individuals who purchased prepared food (b), and hours spent working per week (c) by generational cohort, 2014



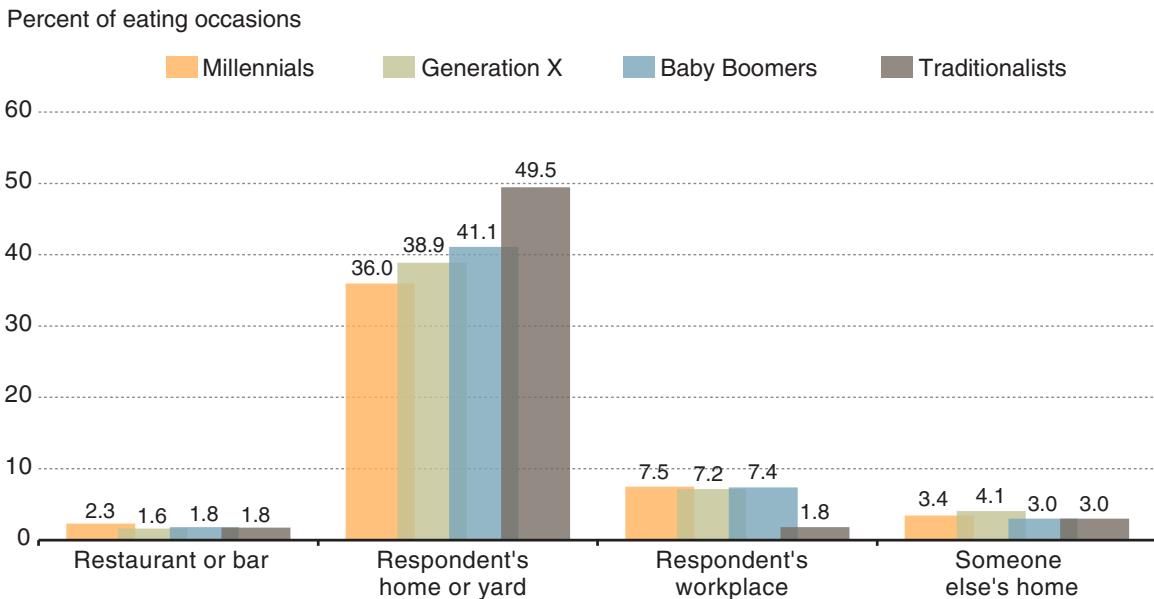
Source: USDA, Economic Research Service using Information Resources Inc., data, 2014.

Where Are People Eating?

Figure 7 shows the percent of eating occasions by location as a percentage of all eating occasions in a 24-hour period. Millennials spend significantly less time eating at home than do any of the older generations. Specifically, Millennials eat over 13 percent less of their meals at home than Traditionalists, who report the highest percentage of food consumption at home. In terms of meals, Millennials eat 2.8 more meals away from home per week than do Traditionalists (assuming an individual eats 3 meals a day, in a given week). Millennials, Gen X'ers, and Baby Boomers eat roughly 7.4 percent of their meals at work, with a precipitous drop for Traditionalists at around 1.8 percent of eating occasions. However, this is expected since Traditionalists are of retirement age and less likely to go to work. All generations eat at someone else's home with similar frequency. Millennials eat in a restaurant or bar around 30 percent more than any of the older generations. With 2.3 percent of meals eaten at a restaurant or bar, this amounts to about one restaurant trip every other week for Millennials and helps to explain lower overall FAH purchases from Millennials in the IRI data.

Figure 7

Percent of total eating occasions by location and generational cohort, 2014



Source: USDA, Economic Research Service using Information Resources, Inc. data, 2014.

Millennials and the Recession

According to the U.S. Bureau of Labor Statistics (2016), the highest rates of post-recession unemployment were during 2009-12. Millennials in particular were significantly affected by the Great Recession (Bell and Blanchflower, 2011). College graduates and first-time job seekers entering the labor market during economic downturns have been found to suffer persistent negative wage effects (Bell and Blanchflower, 2011; Kahn, 2010; Oreopoulos et al., 2012). This phenomenon can alter consumer and food shopping patterns.

To see if fallout from the Great Recession affected food purchases in 2014, we construct a dummy variable indicating whether the head of the household was of college graduation age during 2009-12. These “recession Millennials” were between the ages of 24 and 30 during the 2014 survey year. All other Millennials were grouped as “non-recession Millennials.” To determine if the recession played a role in conditioning Millennial food purchasing behavior, we compare the purchasing patterns of recession Millennials to non-recession Millennials, holding per capita income constant. Both groups were then partitioned by (per capita) income decile.

In 2014, non-recession (younger) Millennials showed lower average monthly per capita food expenditures up until the 60th income decile (< \$28,333) than did recession Millennials. After this point, per capita expenditures for non-recession and recession Millennials generally converge, particularly for the highest income households. FAH purchases are generally less expensive than FAFH purchases. Increased purchases of FAH may be particularly appealing to Millennials hurt by the recession. The fact that food expenditures for recession Millennials are higher than for non-recession Millennials in the lowest per capita income deciles indicates that the recession affected the shopping preferences of recession Millennial households. Recession Millennials may have shifted their spending from FAFH toward FAH to save money.

Wealthier households are less sensitive to food prices and thus are more able to maintain food expenditure levels during economic downturns. Recall that households with higher income spend more on food (figure 1), suggesting that when income rises, individuals either purchase more food or more expensive foods. The latter phenomenon is evident in figures 4a and b, which show increasing expenditure shares for fruit, vegetables, red meat, sugar/sweets, and prepared foods (ostensibly more expensive food items) as per capita income grows.

We acknowledge that age is a determinant of income; household per capita income generally rises as Millennials get older. To mitigate this effect and to reduce the chance that we are capturing changes in shopping behavior due to income differences by age, we compare shopping behaviors of non-recession and recession Millennials by income decile. The smoothing of the data, of course, may obscure average differences between non-recession and recession Millennials within each decile (figure 8).⁹

Interestingly, as per capita income rises, a larger proportion of the household’s budget—regardless of generation—shifts toward more primary/unprocessed ingredients, with the exception of white

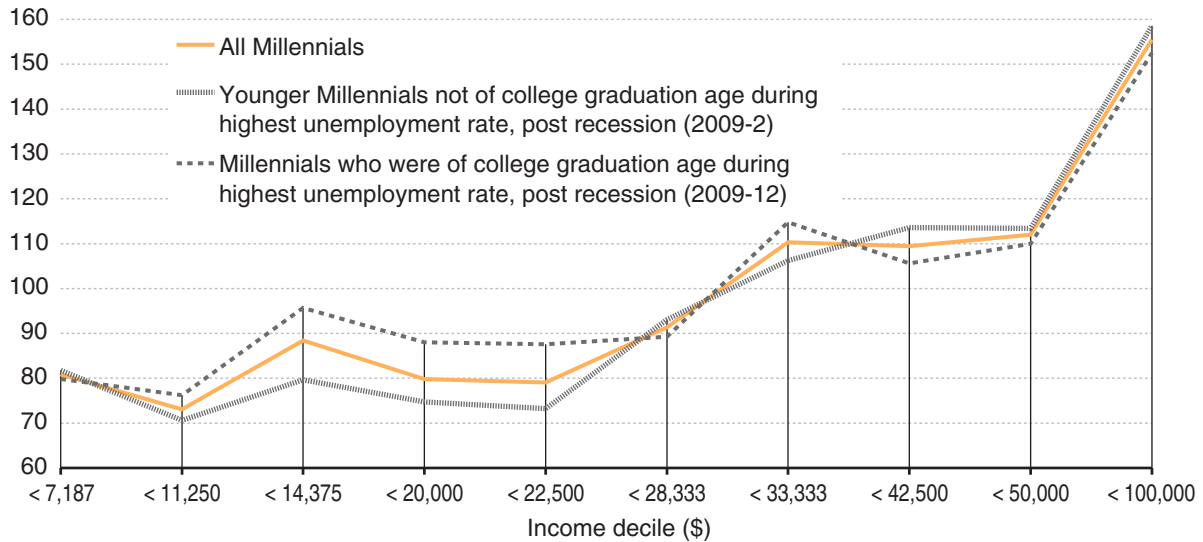
⁹ To further justify our treatment of the data, we test the difference between average income levels of non-recession Millennials and recession Millennials. We found that, on average, income levels were not statistically different between these two groups and averaged around just over \$19,000 per capita. A t-test confirms that per capita income levels between both groups are the same. This suggests that we compare shopping behaviors between the two groups that are not primarily influenced by age and income effects.

meat. Also, our results show that Millennials might have a higher preference for fruits and vegetables and less for white and red meat than earlier generations.

Figure 8

Total per capita monthly food expenditures of Millennials who were of college graduation age during 2009-12, by per capita income decile, 2014

Dollars



Source: USDA, Economic Research Service using Information Resources, Inc. data, 2014.

Separating Millennials into those who were old enough to enter the labor market during the recession and those who were not, some interesting patterns emerge. Fruit, vegetables, and red meat indicate an increasing trend for both per capita dollars and expenditure share (figure 9a). As with total per capita food expenditures, at lower per capita income levels, recession Millennials spend more on these categories, both in levels and in shares, and these numbers converge as income rises. Again, this suggests that the recession may have nudged recession Millennials to purchase more food at home to save money. Higher per capita income Millennial households spend more on white meat (in per capita dollars), but the *share* of expenditure decreases. This suggests that as Millennials become richer—recession Millennials, in particular—they are perhaps buying more white meat but are also buying more and/or more expensive food items, which lowers the expenditure share.

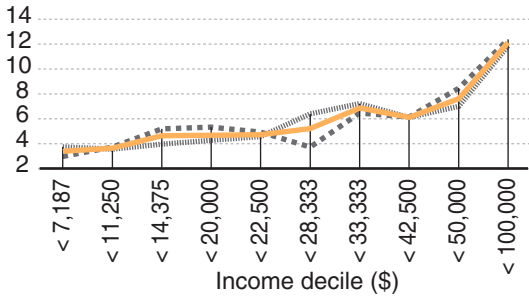
Recession Millennials spent the most on grains per capita in 2014, particularly at lower per capita income levels (figure 9b). The share spent on grain decreases with income. The same patterns hold for pasta. Both categories include foods that are generally cheap, shelf stable, and full of starchy carbohydrates. As Millennial households become wealthier, they seemingly shift from buying grains and pasta to more expensive items like sugar/sweets and prepared foods. Higher (per capita) income households also have larger expenditures on prepared foods for both non-recession and recession Millennials (recession/older Millennials generally have a higher expenditure share across per capita income levels). Other than a dip in expenditure share at the 60th income percentile, the share is relatively steady across income levels. For Millennials then, wealth clearly encourages more consumption of prepared foods. This suggests that recession Millennials prefer the convenience of prepared foods, but are cost sensitive in their preference for prepared food at home over more costly FAFH.

Figure 9a

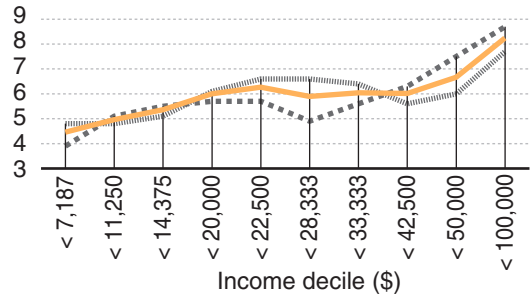
Total per capita monthly average dollar expenditure and expenditure share of non-recession and recession Millennials for basic ingredients by income per capita decile, 2014

— All millennials
 - - - Younger Millennials not of college graduation age during highest unemployment rate, post recession (2009-12)
 - - - - Millennials who were of college graduation age during highest unemployment rate, post recession (2009-12)

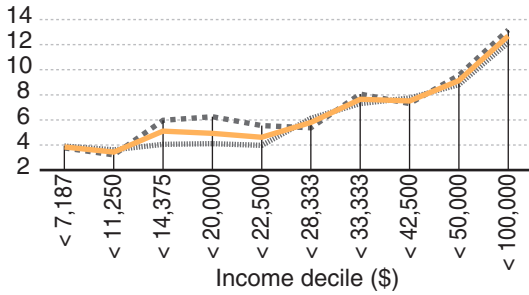
Fruit, dollars



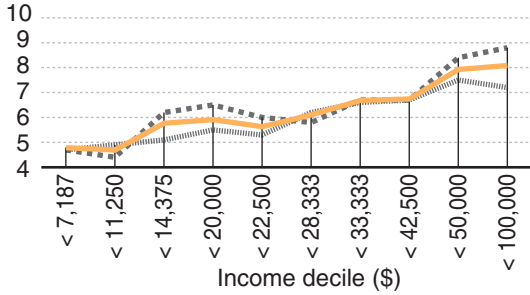
Fruit, expenditure share (%)



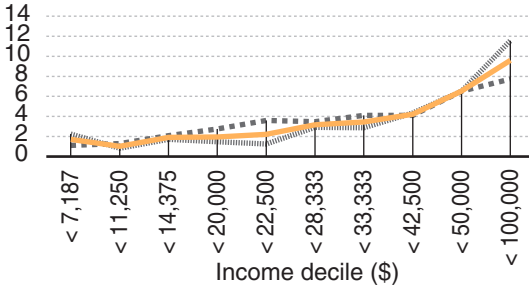
Vegetables, dollars



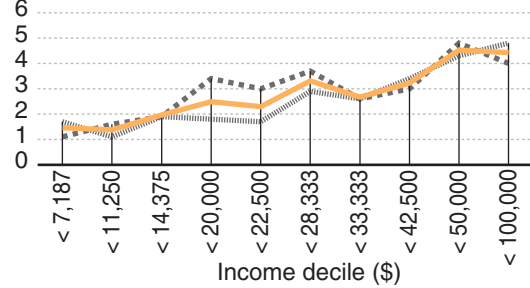
Vegetables, expenditure share (%)



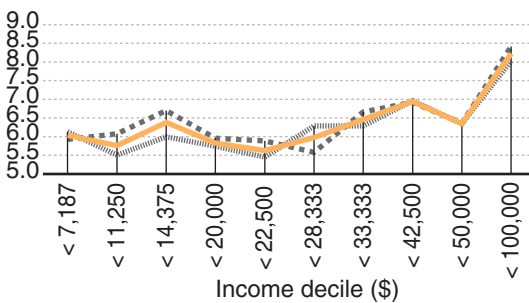
Red meat, dollars



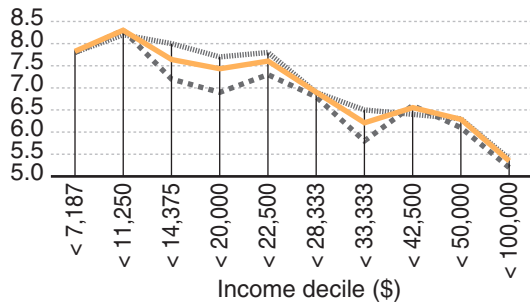
Red meat, expenditure share (%)



White meat, dollars



White meat, expenditure share (%)



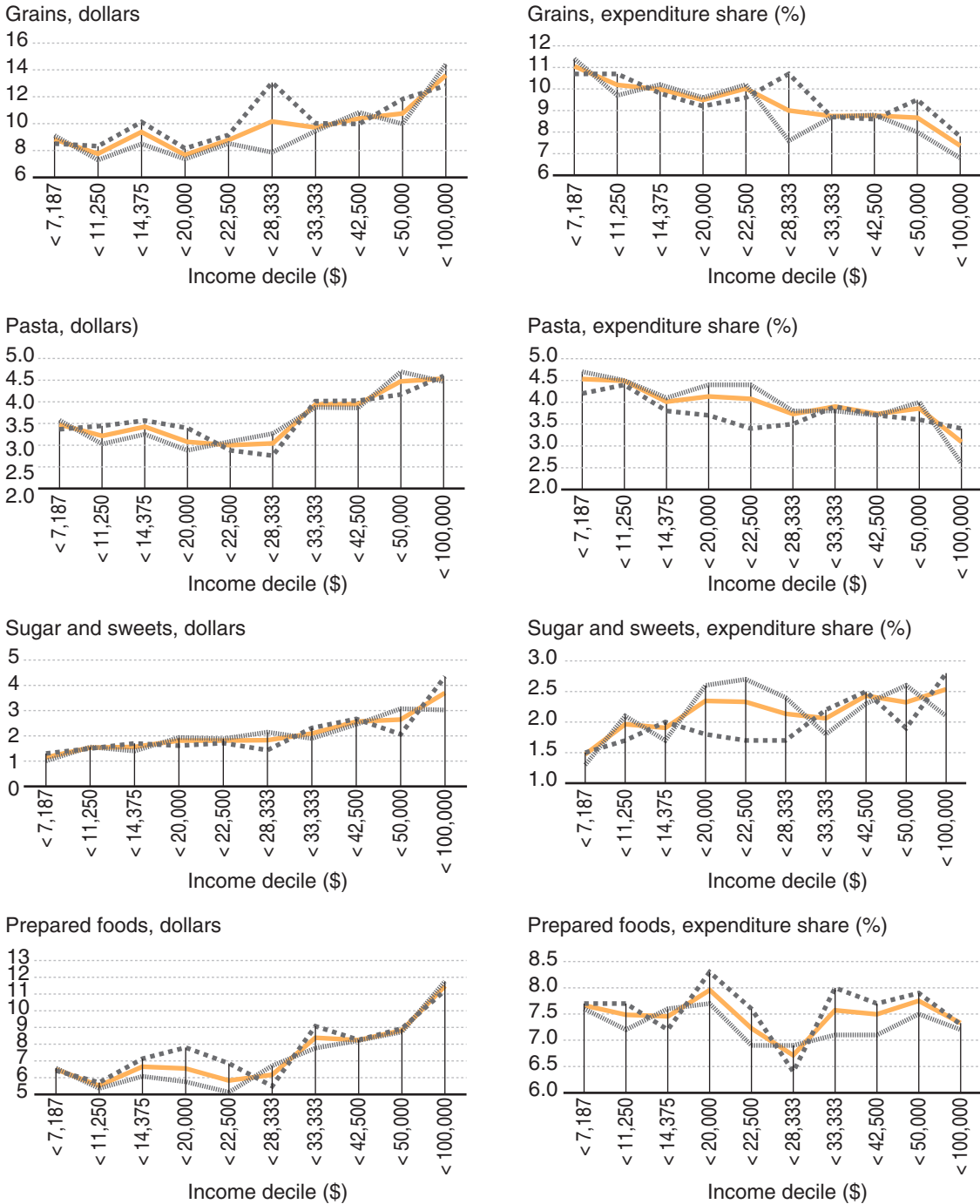
Note: Charts on the left are expenditures in dollars and charts on the right are corresponding expenditure shares. For legibility, the axes are truncated and scaled accordingly.

Source: USDA, Economic Research Service using Information Resources, Inc. data, 2014.

Figure 9b

Total per capita monthly average dollar expenditure and expenditure share of non-recession and recession Millennials for complex ingredients and processed foods by income per capita decile, 2014

— All Millennials
 - - - Younger Millennials not of college graduation age during highest unemployment rate, post recession (2009-12)
 - - - - - Millennials who were of college graduation age during highest unemployment rate, post recession (2009-12)



Note: Charts on the left are expenditures in dollars, and charts on the right are corresponding expenditure shares. For legibility, the axes are truncated and scaled accordingly.

Source: USDA, Economic Research Service using Information Resources, Inc. data, 2014.

Conclusion

On average, higher (per capita) income households spend more on food-at-home (FAH) expenditures per capita, regardless of generational cohort. Additionally, at higher per capita income deciles, an increasing share of the household's food budget goes toward less processed ingredients. For example, wealthier households purchase less processed foods and starchy carbohydrates, like pasta, and more fruits and vegetables compared to all other purchases. The overall healthfulness of household shopping baskets is not definitive, however, since there is also evidence that wealthier households purchase more red meat, sugar and sweets, and—in the case of Millennials—more prepared foods. Still, it is encouraging to see an increase in the food budget share devoted to unprocessed commodities/simple ingredients as per capita income rises. These purchases are generally regarded as healthier foods.

While Millennials spend the least money of all generations on FAH and have the largest expenditure shares for prepared foods, pasta, and sugar/sweets, there were some encouraging consumption patterns as well. When partitioning by income, per capita fruit expenditure shares for Millennials essentially matched those of Traditionalists, who allocate the largest share to fruits. Moreover, as Millennials become richer, they apportion more of their FAH budget to vegetables, suggesting that the Millennial generation may have a stronger preference for fruits and vegetables compared to older generations. Millennials also made fewer trips to the grocery store per month than any older generations, consistent with the finding that Millennials are purchasing less food per capita than older generations.

Partitioning Millennials by both income decile and whether the primary shopper of the household was of college graduation age during 2009-12 (the period after the recession with the highest rates of unemployment), we see that “recession Millennials” spend more on food at home overall, regardless of income, than “non-recession Millennials” who did not enter the labor force during 2009-12. After controlling for income, the difference in shopping behaviors between Millennial groups may be due to a heterogeneous effect on earning trajectories caused by the recession. As per capita income rises, overall per capita food-at-home expenditures for both groups converge, suggesting that the recession may have affected only lower and middle-income recession Millennials' food shopping behaviors either because higher income Millennials were less affected by the recession or were wealthy enough to maintain food purchasing patterns.

Our American Time Use Survey (ATUS) results are consistent with IRI data. Since Millennials purchase the least amount of FAH among generations, it is not surprising that Millennials eat outside the home more often than other generations. Millennials eat approximately 2.8 more meals outside of the home in a week than Traditionalists (the oldest cohort in the report), who were found to eat the most at home. As for eating places, Millennials eat almost 30 percent more often in bars and restaurants than other generations, and they are also more likely to eat on the go while driving.

Millennials spent 12 minutes less per day on eating than Traditionalists in 2014, who spend the most time eating among generations, but all generations spend about equal time on secondary eating. Millennials spent almost 1 hour less in food presentation, preparation, and cleaning despite working the fewest hours per week, on average, of all generations. This reinforces our IRI-backed food expenditure finding that a large portion of FAH purchases are ready-to-eat foods. These findings suggest that Millennials shop differently than their generational predecessors, and some of this behavior could have been influenced by the economic realities brought on by the recess-

sion. Additionally, Millennials' emphasis on convenience is in line with their pattern of higher food-away-from-home (FAFH) consumption, perhaps indicating they have become accustomed to consuming foods requiring minimal preparation effort.

One limitation to this analysis is that the group of Millennials we study is constrained to those designated as the principal shopper of the household. Therefore, this report may underrepresent the Millennial cohort since some are still dependents within a household. This dependency may extend past working age due to the effects of the Great Recession on Millennials' readiness to leave their parents' homes.

This work would benefit from data that include both FAH and FAFH consumption to estimate cohort effects for a more comprehensive depiction of food shopping behaviors. An age-period-cohort framework might be used to estimate cohort effects. Given that Millennials exhibit a greater preference for convenience in grocery store purchases (also reflected in their time allocation preferences), significant generational differences may exist in FAFH consumption.

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Appendix A

Appendix table A1

Listing of each food included in the 22 broad food categories

Category	Foods
Fruits	Apple, apple parfait, applesauce, apricot, assorted fruit, blackberry, blueberry, boysenberry, breakfast prune, cantaloupe, cherry, citrus fruit, coconut, cranberry, currant, date, dried apple, dried apples and bananas, dried apricot, dried banana, dried berry, dried berry and cherry, dried bing cherry, dried blueberry, dried blueberry and apple, dried blueberry and cherry, dried cantaloupe, dried cherry, dried cinnamon apple, dried coconut, dried cranberry, dried cranberry raisin, dried date, dried fig, dried fruit, dried goji berries, dried grape, dried jackfruit, dried kiwi, dried lemon, dried lime, dried mandarin orange, dried mango, dried mixed berry, dried mixed fruit, dried mulberry, dried orange, dried orange blueberry, dried papaya, dried peach, dried pear, dried persimmon, dried pineapple, dried pineapple and mango, dried plantain, dried plum, dried pomegranate and berries, dried prune, dried raspberry, dried salt plum, dried strawberries and mango, dried strawberry, dried strawberry and bananas, dried tangerine, dried tropical fruit, fig, fresh all other fruit, fresh apple, fresh apple with oranges, fresh grapefruit, fresh orange, fresh organic apple, fresh organic grapefruit, fresh organic orange, fruit, gooseberry, grape, grapefruit, guava, jackfruit, kumquat, lemon, lime, lingonberry, lychee, mandarin orange, mango, melon, mixed berry, mixed fruit, mixed melon, papaya, peach, pear, pineapple, plantain, plum, prune, raisin, rambutan, red raspberry, strawberry, watermelon rind, wild blueberries
Vegetables	Alcaparrado, artichoke, asparagus, baby carrots, baby corn, bamboo shoot, banana pepper, beet, beet and onion, beets, bell pepper, broccoli, broccoli/cauliflower, brussel, brussel sprout, cabbage, cabbage leaf, cactus, caper, caper and olive, caperberries, capote caper, carrot, cauliflower, celery, cherry pepper, chili pepper, chipotle pepper, cilantro, corn, corn on the cob, cucumber, dill, dried ginger, dried pea, dried tamarind, dried vegetable, edamame soy bean, eggplant, fresh bok choy, fresh broccoli, fresh cabbage, fresh carrot, fresh cauliflower, fresh celery, fresh cucumber, fresh herb, fresh lettuce, fresh lettuce blend, fresh mixed vegetable, fresh mushroom, fresh onion, fresh organic mixed vegetable, fresh organic onion, fresh organic other vegetable, fresh organic pepper, fresh organic spinach, fresh organic tomato, fresh other vegetable, fresh pea, fresh pepper, fresh radish, fresh red cabbage, fresh spinach, fresh sprout, fresh tofu soybean, fresh tomato, garden mix, garden salad, garlic, garlic and peppers, garlic clove, ginger, green asparagus, green bean, green chile, green chili, green chili pepper, green pea, green peas, green pepper, green tomato, harvard beet, heart of palm, italian pepper, jalapeno pepper, kale, kale leaf, leeks, lemon grass, lettuce, maitake mushroom, mixed pepper, mixed vegetable, molokhia, mushroom, mustard green, okra, onion, organic celery, organic fresh broccoli, organic fresh lettuce, organic fresh mushroom, organic fresh pea, organic salad mix, organic salad mix blend, oyster mushroom, parsley, pattypan squash, pea, pea pod, pepper, pepper and onion, portobello mushroom, pumpkin, radish, radish and chili, red and green pepper, red and yellow pepper, red cabbage, red chili, red chili pepper, red pepper, rhubarb, rutabaga, salad, salad mix, salad mix blend, salad pepper, scallion, serrano pepper, shitake mushroom, snap pea, soy bean, soybean, spinach, sprout, squash, succotash, sweet green pepper, sweet pepper, tindora, turnip, tomato, turnip green, turnip green and turnip, vegetable, water chestnut, wild caperberries, yellow chili, yellow chili pepper, zucchini, basil, grape leaf
Beans	Baked bean, baked kidney bean, bean, bean and wiener, dried bean, dried bean and pea, fresh bean, garbanzo bean, green lentil, lima bean, rice bean, roasted chick pea, and roasted green pea
Nuts and seeds	Baking nut, chestnut, chia seed, flaxseed, flaxseed meal, hemp seed, melon seed, nut, nut butter, nut topping, peanut butter, peanut butter combo, peanut butter spread, peanut spread, pecan, pepita seed, pumpkin seed, sunflower and pumpkin seeds, sunflower kernel, sunflower meat, sunflower nut, sunflower seed, tahini
Milk	Instant milk, milk, milk drink

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Appendix table A1

Listing of each food included in the 22 broad food categories—continued

Yogurt	Acidophilus yogurt, almond yogurt, coconut milk yogurt, cow and goat milk yogurt, goat milk yogurt, goat milk yogurt drink, greek yogurt, kefir yogurt, sheeps' milk yogurt, soy yogurt, yogurt, yogurt and sorbet, yogurt drink, yogurt fruit drink mix, yogurt mix, yogurt novelty, yogurt shake , yogurt smoothie, yogurt smoothie novelty, kefir
Other dairy	Butter, butter blend, buttermilk, cheese, cheese bites, coconut milk, condensed milk, cooking crème, cottage cheese, cream, cream cheese, cream dessert, cream filled ice novelty, cream gelatin dessert, crème brulee, cultured cream, cultured dairy drink, dairy beverage, dairy blend, dairy cream, dairy dessert, dairy dessert novelty, dairy snack, eggnog, evaporated milk, filled milk, gelato, gelato novelty, goat milk, greek yogurt and sorbet novelty, greek yogurt novelty, greek yogurt smoothie, half and half, ice cream , ice cream and cake novelty, ice cream and sherbet novelty, ice cream and sherbet, ice cream and sorbet novelty, ice cream dessert, ice cream mix, ice cream novelty, ice cream sundae novelty, ice drink novelty, ice milk novelty, ice pop novelty, kefir novelty, mellorine, milk modifier, milk shake, milk shake and smoothie novelty, milk substitute, neufchatel, neufchatel and cream cheese, powdered milk, processed cheese, ricemilk, ricotta cheese, sherbet, sherbet and ice cream, sherbet novelty, sorbet and ice cream, sour cream, soy creamer, soymilk shake, table cream, variety cheese, whipped cream, whipped cream topping, whipped topping, whipped topping mix, whipping cream, yogurt and sorbet
White meat	Chicken, chicken and beef, chicken and turkey, chicken beef pork, cornish hen, drumstick, duck, goat, hen, pate, quail, turducken, turkey
Red meat	Alligator, bacon, bacon chip, bacon pieces, beef, beef and bacon, beef and pork, beef bone, beef frankfurter, beef pork and veal, bison, bison with beef, bratwurst, breakfast ham, breakfast meat, breakfast sausage, buffalo, calf liver, Canadian bacon, chitterlings, chorizo, corned beef, country sausage, dinner sausage, dried beef, elk, escargot, frankfurter, frankfurter and bean, German sausage, ham, head cheese, hotdog, Irish sausage, Italian sausage, kishke, kofta, lamb, longaniza, lunchmeat, lunchmeat and cheese, meat, Mexican sausage, organic beef, pancetta, pepperoni, pig, pork, polish sausage, pork and bean, pork crackling, rabbit, salt pork, sausage, sausage casing, sausage roll, scrapple, smokies, souse, veal , veal and beef, venison, Vienna sausage, wiener
Fish and seafood	Albacore tuna, bonito tuna, fish, fish and seafood, fish cake, salmon, seafood, shellfish, shrimp, skipjack tuna, surf and turf, surimi, tongol tuna, tuna, tuna kit, tuna salad, yellowfin
Eggs	Duck egg, egg, egg substitue, quail egg
Grains	Alfalfa seed, barley, breadcrumb, breeding mix, chex, coating flour, coating mix, corn flake crumb, corn wheat meal, cornmeal, cornstarch, cracker crumb, cracker meal, crouton, farfel, flour, grain, granola, grit, hominy, hominy grit, hot cereal, kasha, masa, matzoh ball, matzoh cracker, matzoh meal, nixtamal, oat bran, polenta, posole, ready to eat cereal, rice, rice and bean mix, rice and rice pilaf mix, rice and sauce mix, rice and vermicelli mix, rice mix, rice pilaf, rye meal, seitan, sorghum, stuffing mix, tortilla, tostada shell, uncooked tortilla, waffle mix, wheat, wheat bran, wheat germ
Pasta	Chinese noodle, chow mein noodle, Japanese noodle, macaroni and cheese, macaroni and cheese mix, noodle, pasta, pasta chip, rice and noodle mix, rice and pasta mix, rice and pasta mix, ziti

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Listing of each food included in the 22 broad food categories—continued

Bakery items	Bagel, baking and bread machine mix, baking mix, batter and breading mix, batter mix, batter mix, Belgium waffle mix, bialy, biscuit, biscuit dough, blintze, bread, bread dumpling mix, bread flake, bread machine mix, bread pudding, breadstick, brownie, brownie and frosting mix, brownie dough, brownie mix, bun, bun roll, burek, burekas, cake, cake and cookie mix, cake kit, cake meal, cake mix, cake mix and frosting, cheesecake, cheesecake mix, chiffon parfait, churros, cobbler, cobbler mix, cookie, cookie dough, cookie mix, cookie spread, corn cake, cornbread mix, cream pie, crepe, crepe mix, croissant, crumpet, cupcake, cupcake kit, cupcake mix, dessert, dessert bar mix, dessert mix, dessert novelty, dessert parfait, dessert salad, dinner roll, donut, dough, dumpling, dumpling mix, dumpling wrapper, éclair, English muffin, flan, flan mix, flautas, focaccia, fritter, fruit cake mix, funnel cake kit, gingerbread mix, gingerbread mix, knish, kolache, latke, latke mix, muffin, muffin mix, muffin top, pancake, pancake and muffin mix, pancake and waffle mix, pancake batter, pancake mix, pastelillo, pastry, pastry bun, pastry mix, pastry shell, pasty, phyllo, pie, pie and pastry filling, pie crust, pie crust mix, pie filling mix, pie mix, pie shell, piroshki, pizza crust, pizza crust mix, pizza dough, pizza puff, pizza shell, pizza skin, potato pancake mix, puff pastry cup, puff pastry sheet, roll, sandwich wrap, scone mix, siopao, snack size baked good, sweet bakery good, tartlet, toaster pastry, tyropita, waffle
Snacks	Apple and potato chip, apple chip, assorted fruit chip, assorted salted snack, bagel snack, bagelette, banana chip, banana novelty, bean chip, boiled custard, bruschetta chip, carrot chip, cassava chip, cheese puff, cheese snack, chicharrones, corn and potato snack, corn chip, corn chip and dip, corn crisp, corn nut, corn pop, corn puff, corn snack, corn snack sticks, corn stick, cracker, cracker and cookie, cracker with spread, crackling, croquette, edamame snack, egg white chip, falafel salted snack, filled cracker, flour snack, fried apple, fried bean, fried chicken skin, fried pork rind, fruit and cream novelty, fruit and juice novelty, fruit and yogurt novelty, fruit cocktail, fruit cocktail and peach, fruit crisp, fruit juice novelty, fruit mix, fruit novelty, fruit snack, fudge novelty, gelatin fruit dessert, gelatin novelty, gelatin parfait, gelatin pudding, glazed fruit, graham cracker, health mix, hummus and sesame chips, hummus chip, Italian ice, Italian ice novelty, jello, jerky, kernel popcorn, lentil salted snack, microwave popcorn, multi grain chip, multigrain crisp, multigrain snack, nacho snack, non dairy dessert, non dairy dessert novelty, nutritional snack, nutritional snack bar, nutritional snack mix, okra snack, onion ring snack, onion salted snack, onion snack, parfait, parfait pudding, pizza snack, plantain chip, popcorn, popcorn and nut, popcorn ball, popcorn cake, popcorn pretzel, popcorn pretzel and nuts, popcorn rice cake, pork rind, pork skin, pretzel, pretzel snack, protein snack, pudding, pudding and pie filling mix, pudding mix, pudding novelty, pudding pie filling, ready to eat popcorn, rice and bean salted snack, rice and corn snack, rice cake, rice chip, rice crisp, rice salted snack, rice snack, rye chip, salted bean snack, salted snack, saltine cracker, sandwich cookie, seafood salted snack, seaweed snack, shrimp chip, smoothie mix, smoothie novelty, snack, snack cake, snack cookie, snack cookie and cracker, snack mix, snack nut, snack roll, snack stick, snack tray, snap pea crisp, snow pea crisp, soft pretzel, soy nut, soy crisp, soy snack, soybean salted snack, sugar wafer, taco chip, tapioca salted snack, taro chip, toasted corn nut, toaster biscuit, tortilla chip, tortilla chip and dip, tortilla chip and salsa, tortilla snack, tostada chip, trail mix, vegetable chip, vegetable crisp, vegetable snack, wasabi snack, wheat snack, whole grain chip, whole grain snack, yogurt peanut, yogurt pretzel, yogurt snack, yucca chip, yucca snack

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Appendix table A1

Listing of each food included in the 22 broad food categories—continued

Prepared foods	<p>Ajvar, antipasto, appetizer, arancini, arepas, artichoke and salad, bagel appetizer, bagel dog, base, beef stew, bengan bharta, breaded vegetable, breakfast burrito, breakfast cookie, breakfast drink, breakfast drink mix, breakfast entrée, breakfast pizza, breakfast quesadilla, breakfast sandwich, breakfast taco, breakfast taquito, breakfast wrap, bruschetta, burger, burrito, burrito appetizer, callaloo, calzone, casserole, cheese appetizer, cheese fries, cheeseburger, chhole, chicken appetizer, chicken sandwich, chicken slider, chile relleno, chili, chili con carne, chili con queso, chili dog, chimichanga, chuck wagon sandwich, citrus salad, club sandwich, coleslaw, collard green, complete salad, complete salad kit, corn bread dressing, corn dog, corndog, cranberry sauce, dim sum appetizer, dinner, dinner kit, dinner mix add meat, dinner mix with meat, dinner or entrée, egg potato salad, egg roll, empanada, empanadilla, enchilada, entrée, falafel, falafel mix, french toast, fresh all other fruit with dip, fresh apple with cheese, fresh apple with dip, fresh carrot with dip, fresh celery with dip, fresh mixed vegetable and dip, fresh salsa, fried chicken cracklins, fried squid, frittata, fruit and yogurt smoothie, fruit salad, garden salad kit, gelatin fruit salad, gelatin parfait salad, guacamole, gyoza, gyro, hamburger, hamburger slider, hard boiled egg, hero sandwich, hoagie sandwich, hors d oeuvre, hush puppy, instant breakfast, instant potato mix, Japanese noodle soup mix, kim chee, kreplack, kugel, kugel mix, lumpia, lumpia wrapper, lunch combination, macaroni salad, manapua, mashed potato, meal kit, meat and cheese appetizer, meat pie, meatball, Mexican food product, noodle soup mix, noodle and vegetable side dish, onion ring, organic complete salad, organic single salad kit, oriental food product, oriental noodle soup mix, panini, panini sandwich, party tray, pasta and vegetable side dish, pasta salad, pasta side dish, phyllo appetizer, phyllo hors d oeuvre, pizza, pizza appetizer, pizza bagel, pizza bites, pizza burger, pizza kit, pizza roll, pizza wrap, pocket sandwich, poor boy sandwich, popover, pot pie, potsticker, prepared vegetable, prepared pasta dish, prepared salad, prepared salad blend, pretzel dog, puff appetizer, pupusa, quesadilla, quiche, quiche appetizer, quiche hors d oeuvre, ramen noodle soup mix, relleno, reuben sandwich, rice side dish, salad kit, samosa, sandwich, sandwich appetizer, seafood appetizer, seafood hors d oeuvre, seafood salad, shao mai, shu mai, shu mai dumpling, side dish, side dish mix, single salad kit, smoothie, sopes, sorullos, souffle, soup, spanakopita, spring roll, stir fry vegetable, stir fry vegetable and noodle, stir fry vegetable and rice, stromboli, stuffed bread, stuffed clam, stuffed grape leaf, stuffed jalapeno pepper, stuffed mushrooms, stuffed pepper, stuffing, submarine grinder sandwich, submarine sandwich, sushi, taco, taco and tortilla, taco appetizer, taco kit, tamale, tamale kit, taquito, tofu entrée, tortilla sandwich, turnover, turnover sandwich, vegetable and brown rice side dish, vegetable and noodle side dish, vegetable and rice pilaf, vegetable and rice side dish, vegetable appetizer, vegetable pancake, vegetable side dish, vegetable wrap, vegetarian burger, white sauerkraut, wonton, wrap</p>
Sugar and sweets	<p>All purpose syrup, beverage and ice dessert syrup, breath mint , candied fruit, candy, candy apple kit, candy bar, cane syrup, caramel apple, chewy candy, chocolate candy, coated apple, coating, coconut candy, corn and cane syrup, corn syrup, custard, custard mix, custard novelty, dessert topping and syrup, edible cake decoration, frosting, fruit curd, fruit flavored syrup, gift box chocolate, gum, halvah, hard candy, icing, marshmallow, marshmallow cream, mint candy, molasses, mousse, mousse mix, novelty candy , nut candy, pancake and waffle syrup, pancake syrup, ribbon cane syrup, sikhye, sorghum molasses syrup, sugar, sugar cane, sugar cane syrup, sugar substitute, syrup, white syrup</p>
Carbonated beverages	<p>Carbonated water, club soda, seltzer water, soda, sparkling cider, sparkling coffee energy drink, sparkling drink, sparkling energy fruit drink, sparkling energy juice drink, sparkling energy water, sparkling enhanced water, sparkling juice, sparkling juice cocktail, sparkling juice drink, sparkling lemonade, sparkling mineral water, sparkling seltzer water, sparkling spring water, spritzer, tonic water, yogurt soda</p>

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Listing of each food included in the 22 broad food categories—continued

Noncarbonated beverages	Artesian, artesian water, barley water, beverage, bubble tea, caffeinated water, cappuccino, cereal beverage, chai tea latte, chai tea latte mix, cider, coconut almond and chia drink, coconut water espresso, coffee, coffee concentrate, corn drink, distilled water, drink, drink concentrate, drink mix, drink smoothie, drinking water, energy coffee, energy drink , energy drink mix, energy fruit smoothie, energy juice, energy juice drink , energy shake, energy shot, energy tea, energy water, enhanced water, fitness water, frappe, grain beverage, horchata, horchata and milk, hot chocolate mix, hot cocoa mix, hot drink mix, ice tea bag, iced cappuccino, iced coffee, iced tea, iced tea concentrate, iced tea mix, iced tea with ginseng, instant coffee, instant iced tea mix, instant tea, instant tofu drink, isotonic drink, juice, juice cocktail, juice cocktail mix, juice concentrate, juice cooler, juice drink, juice drink concentrate, juice smoothie, lemonade, lemonade mix, loose tea, mineral water, nectar drink, non dairy beverage, nondairy shake, nutri water, prepared iced tea, prepared sparkling tea, prepared tea, purified water, ready to drink coffee, rice and quinoa drink, rice drink, shake mix, soy drink, specialty drink, sport drink, sport drink mix, sport quencher, spring water, sunflower drink, tea, tea bag, tea concentrate, tea cooler, tea pod, thirst quencher, vitamin water, water, water ice, whole bean coffee
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Listing of each food included in the 22 broad food categories—continued

Other foods	<p>Agar, ajvar, aromatic bitters, baking powder, baking soda, barbeque sauce, baste and glaze, black pepper, bernaise sauce, bouillon, bread machine yeast, brine mix, broccoli seed, broth, broth base, brown rice syrup, bruschetta topping, butter and oil replacement, calamata, callaloo, canola oil, casserole mix, cheese salsa and dip, cheese sauce, chicken broth, chiffon gelatin, chili fixing, chili hotdog sauce, chili paste, chili sauce, chutney, clam juice, cocktail drink concentrate, cocktail garnish, cocktail mix, cocktail mix additive, cocktail onion, cocktail sauce, coffee additive, coffee and tea flavoring, coffee creamer, coffee flavoring, coffee substitute, coffee whitener, coleslaw salad dressing, condiment, condiment combo, consommé, cooking and salad oil, cooking sauce, cooking spray, corn husk, cream of coconut, crusting blend, crystal white syrup, curd, dessert topping, dietary supplement, dill sauce, dip, dip and salsa, dip and seasoning mix, dip and soup mix, dip mix, dipping oil, dressing, dressing mix, dried cacao, dry chili mix, egg and beet, egg roll wrapper, eggplant caponata, enchilada sauce, extract, fajita seasoning, fat, flavored baking ingredient, flavored ice, food coloring, food flavoring, food flavoring and coloring, food thickener, fruit / vegetable preservative, fruit butter, fruit dip, fruit ice, fruit pectin, fruit salad dressing, fruit sauce, fruit spread, fruit topping, garlic spread, gel , gelatin, gelatin mix, giardiniera, ginger and shiso leaf, glaze, glaze and marinade, glaze and sauce, glaze mix, graham cracker crumb, gravy, gravy and sauce and seasoning mix, gravy mix, gravy mix and roasting bag, greek olive, gyoza wrapper, hollandaise sauce, hommus, honey, horseradish, horseradish sauce, hot sauce, hotdog sauce, hummus, ice cream bowl, ice cream cone, ice cream cone or cup, ice cream cup, ice cream topping, Italian sauce, jam, Japanese horseradish, jelly, kalamata olive, ketchup, kiddie chow, kraut, lard, lemonaise, liquid smoke sauce, malt, maraschino cherry, margarine, marinade, marinade and sauce, marinade and steak sauce, marinade mix, marinara, marmalade, mayonnaise, meat sauce, meat spread, meat substitute, meringue mix, Mexican sauce, miso, mixer, mochi, mole, muffuletta mix, mustard, nectar, noodle sauce mix, oil, olive, olive gigante, olive mix, olive oil, onion petal, oriental cooking oil, oriental marinade, oriental paste, oriental sauce, oriental marinade and sauce, palm seed, pasta sauce, paste, paste, paste, peanut oil, pepper and pickle, pepper and pimento, peppercorn, pepperoncini, picante, picante con queso, picante salsa, picante sauce, pickle, pico de gallo, pimento, pizza sauce, pizza topping, potsticker wrapper, poultry substitute, powder, premixed cocktail, preserve, protein chip, protein supplement, pumpkin kernels, puree, red beet and egg, relish, rennet, ripe olive, roux, roux and gravy mix, rub seasoning, sacha inchi seed, salad dressing, salad dressing mix, salad olive, salad shell, salad topping, salsa, salsa and con queso, salsa con queso, salsa picante, salsa taquera, salsa verde, salt, salt and pepper, salt seasoning, salt substitute, sandwich dressing, sandwich spread, sauce, sauce and glaze, sauce and marinade, sauce mix, sauerkraut, seafood marinade, seafood sauce, seafood spread, seasoned coating mix, seasoning, seasoning and bag, seasoning and coating, seasoning and fry mix, seasoning and oven bag, seasoning blend, seasoning mix, seasoning mix and cooking bag, seasoning mix and roasting bag, shell, shortening, simmer sauce, sloppy joe sauce, sorbet, sorbet novelty, soup and dip mix, soup base, soup kit, soup mix, soup mix and seasoning, soup nut, soup starter, soup stock, soy protein meat substitute, soy sauce, spaghetti sauce, spanish olive, spice, spice rack, spread, spread and dip, spreadable fruit, spring roll wrapper, squash seed, stabilizer, starch, steak fry, steak sauce, taco puff, taco sauce, taco shell, tamale wrapper, tartar sauce, tempeh, tempura batter mix, tofu, tomato and caper, tomato and pickle, tomato paste, tomato sauce, vegenaïse, vegetable meat substitute, vegetable oil or shortening, vegetable oil spread, vegetable peanut and sunflower, vegetable protein meat substitute, vinegar, watermelon seed, won ton wrapper, Worcestershire sauce, xanthan gum, yeast, yeast extract, yogurt dressing</p>
Baby food	<p>Baby cereal, baby food, baby formula, baby juice, baby juice yogurt, infant and toddler formula, infant formula, infant water, toddler formula</p>
Alcohol	<p>Alcoholic cooler, ale, aperitif wine, asti spumante, beer, beer mix, champagne, cooking rice wine, cooking sake, cooking sherry, cooking wine, dessert wine, iced wine, lager, liqueur, liquor, malt beverage, malt liquor, rice cooking wine, ruby port, sake, sherry, sparkling sake, sparkling wine, vermouth, wine, wine beverage</p>