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Overview of Food Code Mapping for ERS Food Purchase Groups and the Monthly Food-at-Home Price Database

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This document provides a brief overview of datasets that are being derived from the IRI InfoScan store-based scanner data for use in food economics research. More complete documentation is being prepared and will be available in spring 2022. In addition to the information contained in this document, the complete documentation will describe the methodologies for creating the datasets and provide summaries of the data.

Before reviewing this documentation, users may want to review the background information on the IRI data available on the Economic Research Service (ERS) website “Using Scanner Data” at <https://www.ers.usda.gov/topics/food-markets-prices/food-prices-expenditures-costs/using-scanner-data/>. As documented in Muth et al. (2016), IRI InfoScan store-based scanner data comprise a nonprobability (or convenience) sample of weekly retail sales (revenue and quantity) for products with Universal Product Codes (UPCs) and random-weight (or perishables) products across several types of retailers.

1. Food Code Mappings

Mappings between detailed scanner data product codes and the ERS Food Purchase Groups (EFPGs) allow researchers to easily group products for use in policy-relevant analyses. Earlier versions of the EFPGs were developed for analyzing and reporting estimates from the Food Acquisition and Purchase Survey (FoodAPS) and for reporting average prices in the Quarterly Food-at-Home Price Database.¹ In addition to these applications, they can be used for conducting a broad range of policy-relevant research studies. The EFPGs are based on the food-based groupings used in the *Dietary Guidelines for Americans* and were designed to categorize foods according to characteristics such as ingredients, nutritional content, and convenience level (Tornow et al., 2018). Appendix A provides the list of EFPGs and their definitions.

The mappings of UPCs and random-weight (or perishables) codes in the IRI InfoScan store-based scanner data are available for each individual year from 2016 through 2018.² The approximate number of product codes in each year of the data is 600,000, although a few products lack sufficient product detail to create a reliable mapping and were not coded.

The final datasets for the code mapping are shown in Table 1, and Table 2 provides the codebook for the code mapping files. Files are available in both SAS and CSV format. The files in CSV format can be read by most statistical analysis software.

¹ More information about FoodAPS can be found at <https://www.ers.usda.gov/data-products/foodaps-national-household-food-acquisition-and-purchase-survey/>, and more information about the QFAHPD can be found at <https://www.ers.usda.gov/data-products/quarterly-food-at-home-price-database/>.

² In the IRI data, perishable products include random-weight (e.g., loose potatoes) and fixed-weight products (e.g., bagged potatoes). Most of the random-weight products are perishable. Fixed-weight products are assigned UPCs by the producer or manufacturer and therefore are included with UPCs throughout this report.

Table 1. Datasets for Mapping IRI Product Codes to EFPGs

Each record represents a unique product code (UPC or random-weight code) in the InfoScan data.

Filename (SAS and CSV)	Year	No. of Records
Upc2016_efpgcode	2016	588,952
Upc2017_efpgcode	2017	588,131
Upc2018_efpgcode	2018	583,679

Table 2. Code Mapping Codebook

The datasets for each year are in the same format.

Variable Name	Variable Definition	Type
UPC	IRI UPC (product codes including prepackaged with barcodes and random-weight products)	Text
EFPCode	ERS Food Purchase Group	Numeric
Dictionary	IRI product dictionary type Pos = Point-of-sale dictionary (represents prepackaged products) Per = Perishables dictionary (represents random-weight and fixed-weight perishable products)	Categorical

The code mapping can be used to quickly calculate aggregate estimates by EFPG code. Specifically, programming code can be written to select the relevant IRI InfoScan product codes based on the code mapping file to create aggregates for use in analyses, such as total dollar sales or average prices by EFPG. Users can also aggregate multiple EFPGs as needed for analyses. For example, users may wish to consolidate the 91 EFPGs into the 58 Thrifty Food Plan categories as documented in Carlson et al. (2007).

2. Monthly Food-at-Home Price Database

Data on food prices by food category, geographic area, and time period can also be used in modeling the effects of policies that could influence food consumption, diet quality, and health outcomes. Previously, ERS created the Quarterly Food-at-Home Price Database using Nielsen household-based scanner data to calculate mean prices and standard errors by food groups similar to the EFPGs and geographic area (Todd et al., 2010). The updated version of the database is the Monthly Food-at-Home Price Database (MFAHPD) that uses IRI store-based scanner data.

The MFAHPD provides a set of average prices and price indexes for 14 geographic areas and uses category definitions based on the EFPGs described in Section 1. The geographic areas were defined as the top 10 metropolitan areas and the four Census Divisions (stores outside

of the top 10 metropolitan areas were assigned to their respective Census Divisions).³ The top 10 metropolitan areas were selected based on the number of stores in the Nielsen TDLinX dataset of retail establishments in the United States for consistency with the weights (projection factors) that were developed for the IRI InfoScan data.⁴ The price measures in the MFAHPD include the following:

- Unit prices on a per-100-gram basis (mean, 5th percentile, median, and 95th percentile)
- Bilateral price indexes: Laspeyres, Paasche, Törnqvist, and Fisher Ideal
- Multilateral price indexes: GEKS (Gini, 1931; Eltetö & Köves, 1964; Szulc, 1964) and CCD (Caves et al., 1982)

The simplest measure of the price of a food group is the per-quantity price, for which quantity can be measured by weight (e.g., grams) or volume (e.g., liquid ounce). This measure, which is also known as unit value in the consumer demand literature, is calculated by dividing the food group-level sales by the food group-level quantity. In comparison, a price index is a unitless measure for the cost of a basket of consumption goods or services over time periods, across locations, or over pairs of time periods and locations. Bilateral price indexes have a fixed base period, while multilateral price indexes can be updated using a rolling window with a moving base as data for future years become available.

Price indexes are often preferred to using unit values in economic analyses for several reasons. First, the mix of products within a food group is likely different across stores and over time. A higher unit value may reflect higher market prices or a greater proportion of premium-quality products in the mix. Second, a unit value may not be the best price statistic for tracking inflation because it is not clear how much of the variation in unit values is due to differences in prices of identical products versus differences in product mix. Both may be of interest to policymakers and researchers, but it is important to separate them. Another issue with unit value-based price comparisons is their inability to quantify the effect of variety on the overall cost of living. Table 3 provides guidance to users on selecting a price index to use based on analytical purposes.

³ See <https://www.census.gov/geographies/reference-maps/2010/geo/2010-census-regions-and-divisions-of-the-united-states.html> for a map of how the Census Divisions are defined.

⁴ See Muth et al. (2021) for a description of the TDLinX dataset and procedures used to calculate the weights (projection factors).

Table 3. Guidance for Selecting Price Indexes for Use in Analyses

Users can select from among six price index measures in the MFAHPD.

Price Index	Features	Recommended Uses
Laspeyres	Fixed weight; tracks price variation holding product mix constant; forms the upper bound of the true cost of living	Tracking the cost of a fixed basket of goods (e.g., Consumer Price Index [CPI] tracking)
Paasche	Variable weight; tracks price variation allowing product mix to fully adjust to relative price changes; forms the lower bound of the true cost of living	Tracking user cost accounting for the impact of changes in product mix without holding the standard of living constant; for example, measures how product substitution mitigates the effect of an excise tax on user cost
Fisher Ideal	Geometric mean of Laspeyres and Paasche; superlative by being exact for the quadratic mean of order two unit cost function, which is a second-order approximation to an arbitrarily twice differentiable linear homogenous cost function	Tracking cost of living while holding the standard of living constant (e.g., as prices in demand estimation)
Törnqvist	Tracks the Fisher Ideal index closely (Zhen et al., 2019, Figure 1); superlative by being exact for the translog total or unit cost function, which is a second-order approximation to an arbitrarily twice differentiable linear homogenous cost function	Tracking cost of living while holding the standard of living constant (e.g., as prices in demand estimation)
GEKS	A multilateral index based on the bilateral Fisher Ideal index as its elements; transitive in that a comparison of food cost between any two entities (i.e., region-months) is invariant to whether they are compared directly or through a third entity; and ready for extension to the rolling-window GEKS in the future as more years are added to the MFAHPD without the need to revise historical index numbers	Tracking cost of living across geographical regions at the same or different points of time and using the price index as the price variable in demand estimation
CCD	A multilateral index based on the bilateral CCD index as its elements; retains the same desirable transitivity and readiness for rolling-window extension properties as the GEKS index.	Tracking cost of living across geographical regions at the same or different points of time and the price index as the price variable in demand estimation

The MFAHPD datasets containing the unit values (i.e., mean prices) and price indexes are provided in both Excel and comma-separated values (CSV) format, as shown in Table 4. Table 5 provides the codebook that lists the variables and their formats included in the files. The variables include the price measures by year, month, geographic area, and EFPG. The total dollar amount of purchases and the number of stores represented in the data are also given to provide an understanding of the size of the market for each EFPG. Note that average prices and their distributions are provided as both weighted and unweighted estimates, while the price indexes were calculated using weighted data.

Table 4. MFAHPD Datasets

Users can access the MFAHPD through a CSV file, which can be read in by most programming languages, or through a set of Excel spreadsheets.

Filename (Type)	No. of Records
MFAHPD_2016-2018 (CSV)	44,856
MFAHPD_2016-2018_MeatsNutsEggs (Excel)	
MFAHPD_2016-2018_FruitsVegetables (Excel)	
MFAHPD_2016-2018_GrainsDairy (Excel)	
MFAHPD_2016-2018_FatsBevsPrep (Excel)	

Table 5. MFAHPD Codebook

The CSV and Excel files have a common set of variables.

Variable Name	Variable Definition	Type
Year	Year of data (2016, 2017, or 2018)	Numeric
Month	Month of data (1-12)	Numeric
MetroRegion	Geographic area code (metropolitan area or census division)	Categorical
MetroRegionName	Geographic area label	Character
EFPCode	ERS Food Purchase Group	Numeric
Purchase_total_wtd	Total monthly purchases in \$s (weighted)	Numeric
Purchase_total_unwtd	Total monthly purchases in \$s (unweighted)	Numeric
N	Number of stores in geographic area	Numeric
Price_mean_wtd	Mean price per 100 grams (weighted)	Numeric
Price_5thpercentile_wtd	5th percentile of price (weighted)	Numeric
Price_50thpercentile_wtd	50th percentile (median) of price (weighted)	Numeric
Price_95thpercentile_wtd	95th percentile of price (weighted)	Numeric
Price_mean_unwtd	Mean price per 100 grams (unweighted)	Numeric
Price_5thpercentile_unwtd	5th percentile of price (unweighted)	Numeric
Price_50thpercentile_unwtd	50th percentile (median) of price (unweighted)	Numeric
Price_95thpercentile_unwtd	95th percentile of price (unweighted)	Numeric
Index_Laspeyres	Laspeyres price index value, base = 1 at the 2016-2018 national average for the EFPG (weighted)	Numeric
Index_Paasche	Paasche price index value, base = 1 at the 2016-2018 national average for the EFPG (weighted)	Numeric
Index_Törnqvist	Törnqvist price index value, base = 1 at the 2016-2018 national average for the EFPG (weighted)	Numeric
Index_Fisher_Ideal	Fisher Ideal price index value, base = 1 at the 2016-2018 national average for the EFPG (weighted)	Numeric
Index_GEKS	GEKS price index value, base = 1 at the 2016-2018 national average for the EFPG (weighted)	Numeric
Index_CCD	CCD price index value, base = 1 at the 2016-2018 national average for the EFPG (weighted)	Numeric

Note: GEKS = Gini, 1931; Eltetö & Köves, 1964; Szulc, 1964 and CCD = Caves, Christensen, & Diewert, 1982

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Appendix A. EFPG Descriptions

The EFPGs shown in Table A-1 are delineated into tiers with Tier 1 representing the major food groupings such as grains, dairy, meat and protein foods, and vegetables; Tier 2 representing subcategories under the major food groups, and Tier 3 representing each individual EFPG code.

Table A-1. EFPG Descriptions

Tier 1	Tier 2	Tier 3	Tier Code and EFPG	Description
Grains			1	<ul style="list-style-type: none"> The grains group contains foods for which the major ingredient is wheat, rice, oats, cornmeal, barley, or other grains. Baked goods, ready-to-eat breakfast cereals, and other prepared grain-based foods are classified elsewhere.
	Whole-grain breads, cereal, rice, pasta, and flours		100	<ul style="list-style-type: none"> All products with whole wheat, whole grain, 100% whole grain, or equivalent in the description Greater than 50% of grain ounce equivalents from whole grains^a
		Breads	10000	<ul style="list-style-type: none"> Whole-grain breads, rolls, bagels, tortillas, biscuits, etc., as well as garlic bread and prepared (plain) pizza dough Includes frozen bread, soft breadsticks
		Rice and pasta	10025	<ul style="list-style-type: none"> Whole-grain rice and pasta. Includes whole barley, quinoa, farro, bulgur, quinoa pasta
		Breakfast grains	10050	<ul style="list-style-type: none"> Unprepared and unsweetened oatmeal, grits, hominy, farina Includes quinoa hot cereal and wheat germ
		Flour, bread mixes, and frozen dough	10075	<ul style="list-style-type: none"> Whole-grain flour, bread mixes, pancake and biscuit mixes, frozen doughs
	Non-whole-grain breads, cereal, rice, pasta, and flours		150	<ul style="list-style-type: none"> All products without whole grain or equivalent in the description Less than 50% of grain ounce equivalents from whole grains^a
		Breads	15000	<ul style="list-style-type: none"> Non-whole-grain breads, rolls, bagels, tortillas, biscuits, etc., as well as garlic bread and prepared (plain) pizza dough Includes non-whole-grain garlic bread, rice spring roll wrappers, corn bread, soft breadsticks, gluten-free white bread and rolls, corn tortilla and taco shells, naan
		Rice and pasta	15025	<ul style="list-style-type: none"> Non-whole-grain dry rice and pasta Includes pearled or hulled pearl barley, plain instant rice, polenta
		Breakfast grains	15050	<ul style="list-style-type: none"> Unprepared and unsweetened grits, hominy, farina, other non-whole-grain hot breakfast cereals Includes oat bran hot cereal

(continued)

Table A-1. EFPG Descriptions (continued)

Tier 1	Tier 2	Tier 3	Tier Code and EFPG	Description
Grains (cont.)	Non-whole-grain breads, cereal, rice, pasta, and flours (cont.)	Flour, bread mixes, and frozen dough	15075	<ul style="list-style-type: none"> ■ Non-whole-grain flour, bread mixes, pancake and biscuit mixes, frozen doughs ■ Includes yeast, baking powder, baking soda, cornstarch ■ Includes non-whole grain biscuit mix, all-purpose baking mix, frozen pizza dough, fish fry batter mix, corn flour, corn meal
Vegetables			2	<ul style="list-style-type: none"> ■ The vegetables group includes all forms of potatoes (without added fats); other starchy vegetables; tomatoes; other red and orange vegetables; dark green vegetables; beans, lentils, peas, and legumes; and other/mixed vegetables
	Potatoes		200	<ul style="list-style-type: none"> ■ Fresh and canned potatoes ■ Frozen potatoes are categorized under frozen other starchy vegetables, unless prepared with added fat and therefore categorized in prepared meals, sides, and salads
		Fresh	20000	<ul style="list-style-type: none"> ■ Fresh potatoes ■ Includes dried potatoes with no added ingredients (e.g., dehydrated potato flakes) ■ Frozen potatoes are categorized in 21550
		Canned	20075	<ul style="list-style-type: none"> ■ Canned potatoes
	Other starchy vegetables		215	<ul style="list-style-type: none"> ■ Fresh, frozen, and canned starchy vegetables, including corn, green peas, green lima beans, plantains, cassava, jicama, parsnips, yams, and potatoes (without added fat)
		Fresh	21500	<ul style="list-style-type: none"> ■ Fresh other starchy vegetables ■ Includes dried other starchy vegetables with no added ingredients (such as fat and seasoning)
		Fresh-cut	21525	<ul style="list-style-type: none"> ■ Fresh-cut other starchy vegetables
		Frozen	21550	<ul style="list-style-type: none"> ■ Frozen other starchy vegetables, including with seasoning or flavoring ■ Includes vegetable mixtures with at least one starchy vegetable ■ Includes frozen potatoes without added fat
		Canned	21575	<ul style="list-style-type: none"> ■ Canned other starchy vegetables
	Tomatoes		230	<ul style="list-style-type: none"> ■ Fresh whole and canned tomatoes ■ Fresh-cut and frozen tomatoes are categorized under other red and orange vegetables

(continued)

Table A-1. EFPG Descriptions (continued)

Tier 1	Tier 2	Tier 3	Tier Code and EFPG	Description
Vegetables (cont.)	Tomatoes (cont.)	Fresh	23000	<ul style="list-style-type: none"> ■ Fresh tomatoes ■ Includes dried tomatoes with no added ingredients and not packed in oil ■ Fresh-cut tomatoes are in 24525 and frozen tomatoes are in 24550
		Canned	23075	<ul style="list-style-type: none"> ■ Canned tomatoes ■ Includes sun-dried tomatoes in oil and canned tomatoes with oil
	Other red and orange vegetables		245	<ul style="list-style-type: none"> ■ Fresh, frozen, and canned vegetables noted as red and orange in the 2015–2020 Dietary Guidelines for Americans ■ Includes acorn squash, butternut squash, carrots, Hubbard squash, pumpkin, sweet potatoes
		Fresh	24500	<ul style="list-style-type: none"> ■ Fresh other red and orange vegetables ■ Includes red peppers (hot and sweet)
		Fresh-cut	24525	<ul style="list-style-type: none"> ■ Fresh-cut other red and orange vegetables ■ Includes dried other red and orange vegetables with no added ingredients ■ Includes fresh-cut tomatoes
		Frozen	24550	<ul style="list-style-type: none"> ■ Frozen other red and orange tomatoes ■ Includes frozen tomatoes
		Canned	24575	<ul style="list-style-type: none"> ■ Canned other red and orange vegetables
	Dark green vegetables		260	<ul style="list-style-type: none"> ■ Fresh, frozen, and canned vegetables noted as dark green in the 2015–2020 Dietary Guidelines for Americans ■ Includes bok choy, broccoli, collard greens, dark green leafy lettuce, kale, mustard greens, romaine lettuce, spinach, turnip greens, watercress ■ Includes salad mixes comprising dark leafy greens (e.g., romaine lettuce, kale, broccoli) ■ Includes dark green fresh herbs such as basil, dill, parsley, and cilantro ■ Includes spring mix, mesclun, mixed greens without dressings or add-ins such as other greens, vegetables, croutons, nuts
		Fresh	26000	<ul style="list-style-type: none"> ■ Fresh whole or unprepared dark green vegetables without added ingredients
		Fresh-cut	26525	<ul style="list-style-type: none"> ■ Fresh-cut dark green vegetables ■ Includes salads with herbs, mixed baby greens, lettuce with other greens, spring mix, lettuce blend, baby lettuce, other types of greens (e.g., kale), butter lettuce, herb salad, romaine, green leaf, mesclun

(continued)

Table A-1. EFPG Descriptions (continued)

Tier 1	Tier 2	Tier 3	Tier Code and EFPG	Description	
Vegetables (cont.)	Dark green vegetables (cont.)	Frozen	26550	<ul style="list-style-type: none"> ■ Frozen dark green vegetables 	
		Canned	26575	<ul style="list-style-type: none"> ■ Canned dark green vegetables 	
	Beans, lentils, and peas			275	<ul style="list-style-type: none"> ■ Fresh, dried, frozen, and canned black beans, black-eyed peas, edamame, garbanzo beans, kidney beans, lentils, lima beans, navy beans, pinto beans, soybeans, and split peas, including seasoned beans ■ Includes baked beans with no added meat ■ Dried forms are categorized with fresh forms
			Fresh/dried	27500	<ul style="list-style-type: none"> ■ Fresh or dried beans, lentils, peas
			Frozen	27550	<ul style="list-style-type: none"> ■ Frozen beans, lentils, peas
			Canned	27575	<ul style="list-style-type: none"> ■ Canned beans, lentils, peas ■ Includes seasoned or flavored beans
					290
			Fresh	29000	<ul style="list-style-type: none"> ■ Fresh other/mixed vegetables ■ Includes dried mushrooms without added ingredients

(continued)

Table A-1. EFPG Descriptions (continued)

Tier 1	Tier 2	Tier 3	Tier Code and EFPG	Description	
Vegetables (cont.)	Other/mixed vegetables (cont.)	Fresh-cut	29025	<ul style="list-style-type: none"> ■ Fresh-cut other/mixed vegetables ■ Includes vegetable trays that contain only vegetables (no dip) ■ Includes refrigerated, fresh-cut coleslaw without dressing ■ Includes salad mix with other vegetables ■ Includes salad mixes that include leafy greens not considered to be dark green vegetables (e.g., iceberg lettuce, cabbage) 	
		Frozen	29050	<ul style="list-style-type: none"> ■ Frozen other/mixed vegetables 	
		Canned	29075	<ul style="list-style-type: none"> ■ Canned other/mixed vegetables ■ Includes olives, pickles, other fermented vegetables, pickled vegetables, kimchi, sauerkraut 	
Fruit			3	<ul style="list-style-type: none"> ■ The fruit group includes all forms of whole and cut fruit and 100% fruit and vegetable juices. 	
	Whole fruit		300	<ul style="list-style-type: none"> ■ Fresh, fresh-cut, frozen, canned, and dried whole fruit 	
		Fresh	30000	<ul style="list-style-type: none"> ■ Fresh whole fruit not prepared, peeled, or cut 	
		Fresh-cut	30025	<ul style="list-style-type: none"> ■ Fresh peeled or cut fruit, fresh fruit salads, and fruit trays that contain only fruit (no sauces, cheeses, or nuts) 	
		Frozen	30050	<ul style="list-style-type: none"> ■ Frozen whole and cut fruit 	
		Canned	30075	<ul style="list-style-type: none"> ■ Canned single fruits (e.g., peaches), canned fruits mixtures, such as fruit cocktail or tropical mix, and canned fruit pie filling ■ Includes IRI items described as “prepared refrigerated fruit salad” 	
		Dried	30090	<ul style="list-style-type: none"> ■ Dried whole fruits, preserved with or without added sugar 	
		100% fruit and vegetable juices		350	<ul style="list-style-type: none"> ■ 100% fruit and vegetable juices ■ Excludes cocktail mixes, cocktail drinks, juice drinks, non-100% juice drinks
			Fresh	35000	<ul style="list-style-type: none"> ■ Refrigerated fresh 100% fruit and vegetable juices
			Frozen	35050	<ul style="list-style-type: none"> ■ Frozen 100% fruit and vegetable juices and juice concentrates ■ Includes tomato juice
		Canned/shelf-stable	35075	<ul style="list-style-type: none"> ■ Canned and shelf-stable 100% fruit and vegetable juices 	

(continued)

Table A-1. EFPG Descriptions (continued)

Tier 1	Tier 2	Tier 3	Tier Code and EFPG	Description
Dairy			4	<ul style="list-style-type: none"> The dairy group includes unflavored fluid milk (whole, reduced-fat, low-fat, and skim milk), yogurt, and cheese products
	Whole milk, yogurt, and cream		400	<ul style="list-style-type: none"> Whole, unflavored fluid milk, condensed milk, evaporated whole milk, high-fat milk replacement drinks (e.g., coconut milk), cream, and yogurt
		Milk	40000	<ul style="list-style-type: none"> Unflavored fluid milk, condensed milk, high-fat milk replacement drinks, Unsweetened unflavored coconut milk, Sweetened condensed milk, evaporated whole milk Excludes flavored coconut milk
		Cream and sour cream	40030	<ul style="list-style-type: none"> Whole-fat cream and sour cream Includes sour cream made from tofu Cream cheese is included under 46000
		Yogurt	40060	<ul style="list-style-type: none"> Whole-fat yogurt Includes coconut milk yogurt and kefir (all flavors) Excludes refrigerated yogurt drinks
	Reduced-fat, low-fat, and skim milk, cream, and yogurt		430	<ul style="list-style-type: none"> Similar products as the whole milk category, but in a reduced-fat (e.g., 2% milk), low-fat (e.g., 1% milk), or fat-free form (e.g., skim milk) Includes unflavored milk replacement products, such almond milk and soy yogurt Excludes milk substitute coffee creamers
		Milk	43000	<ul style="list-style-type: none"> Reduced-fat or low-fat milk Includes unflavored almond milk, soy milk, walnut milk, cashew milk, pistachio milk
		Cream and sour cream	43030	<ul style="list-style-type: none"> Reduced-fat and low-fat cream and sour cream Cream cheese is included under 46000
		Yogurt	43060	<ul style="list-style-type: none"> Reduced-fat and low-fat yogurt Includes almond milk and soy milk-based yogurt Includes kefir (all flavors) Includes yogurt packaged with toppings Excludes refrigerated yogurt drinks
	Cheese		460	<ul style="list-style-type: none"> All natural cheeses (including cream cheese) and cottage cheese Includes cheese sauces
		Cheese and cream cheese	46000	<ul style="list-style-type: none"> Cottage cheese, cream cheese

(continued)

Table A-1. EFPG Descriptions (continued)

Tier 1	Tier 2	Tier 3	Tier Code and EFPG	Description	
Dairy (cont.)	Cheese (cont.)	Processed	46050	<ul style="list-style-type: none"> ■ Processed cheese that usually contains added ingredients (e.g., oils and emulsifiers) ■ Processed cheese sauces, processed cheese spreads, and imitation cheese ■ Includes imitation cheese, imitation cream cheese 	
Meat and protein foods			5	<ul style="list-style-type: none"> ■ The meat and protein foods group includes beef, pork, lamb, veal, and game; chicken, turkey, and game birds; fish and seafood; nuts, nut butters, and seeds; bacon, sausage, and lunch meats; egg and egg substitutes; and tofu and meat substitutes. 	
	Beef, pork, lamb, veal, and game		500	<ul style="list-style-type: none"> ■ All types of red meat in either fresh, frozen, or canned form ■ Includes marinated or seasoned raw meats ■ Includes venison, alligator, boar ■ Processed meat products containing other ingredients (e.g., frozen meatballs) are placed in the prepared meals, sides, and salads Tier-1 category 	
		Fresh	50000	<ul style="list-style-type: none"> ■ Fresh beef, pork, lamb, veal, game ■ Includes refrigerated uncooked pork loin filet, tenderloin, and filet 	
		Frozen	50050	<ul style="list-style-type: none"> ■ Frozen beef, pork, lamb, veal, game ■ Includes frozen patties, burgers, and filets, without added ingredients such as breadcrumbs and cheese but may include seasoning 	
		Canned	50075	<ul style="list-style-type: none"> ■ Canned beef, pork, lamb, veal, game ■ Includes pickled beef or pork 	
	Chicken, turkey, and game birds			515	<ul style="list-style-type: none"> ■ All poultry and game birds in either fresh, frozen, or canned form ■ Includes ostrich, duck ■ Includes marinated or seasoned raw poultry ■ Processed poultry products with additional ingredients (e.g., rotisserie chicken or stuffed chicken breast) are placed in the prepared meals, sides, and salads Tier-1 category
		Fresh	51500	<ul style="list-style-type: none"> ■ Fresh refrigerated poultry and game birds 	
		Frozen	51550	<ul style="list-style-type: none"> ■ Frozen poultry and game birds ■ Includes chicken or turkey tenderloin, ground, filet, patty, breast, burger with or without seasoning 	
	Canned	51575	<ul style="list-style-type: none"> ■ Canned poultry and game birds 		

(continued)

Table A-1. EFPG Descriptions (continued)

Tier 1	Tier 2	Tier 3	Tier Code and EFPG	Description
Meat and protein foods (cont.)	Fish and seafood		530	<ul style="list-style-type: none"> ■ Fish or other seafood in either fresh, smoked, frozen, or canned form ■ Includes marinated or seasoned raw fish and frozen uncoated, cooked shrimp ■ Processed fish and seafood products with additional ingredients (e.g., frozen fish sticks) are placed in the prepared meals, sides, and salads Tier-1 category
		Fresh	53000	<ul style="list-style-type: none"> ■ Refrigerated fresh fish and other seafood ■ Includes smoked seafood
		Frozen	53050	<ul style="list-style-type: none"> ■ Frozen fish and other seafood ■ Includes frozen uncoated seafood and frozen uncoated, cooked shrimp
		Canned	53075	<ul style="list-style-type: none"> ■ Canned fish and other seafood ■ Includes pickled herring, herring in wine sauce
Nuts, nut butters, and seeds			545	<ul style="list-style-type: none"> ■ All raw, roasted, and flavored nuts (e.g., peanuts, cashews, almonds), seeds (e.g., sunflower seeds, pumpkin seeds, sesame seeds), nut butters
		Nuts and seeds	54500	<ul style="list-style-type: none"> ■ Raw, roasted, and flavored nuts and seeds ■ Includes sesame seeds ■ Includes nut salad topping
		Nut and seed butters and spreads	54550	<ul style="list-style-type: none"> ■ Nut and seed butters and spreads
Bacon, sausage, and lunch meats, including spreads			560	<ul style="list-style-type: none"> ■ Bacon, sausage, prepacked and deli lunchmeat, hot dogs, meat and poultry jerky
			56000	<ul style="list-style-type: none"> ■ Prepacked and deli lunch meat, hot dogs, meat and poultry jerky ■ Includes salt pork; pizza toppings: pepperoni, Italian sausage; shelf-stable country ham; fat back; bacon bits (real); meat sticks
Egg and egg substitutes			575	<ul style="list-style-type: none"> ■ Eggs and egg substitutes. ■ Refrigerated hard-boiled eggs are included in the prepared foods group
			57500	<ul style="list-style-type: none"> ■ Eggs and egg substitutes ■ Includes pickled eggs
Tofu and meat substitutes			590	<ul style="list-style-type: none"> ■ Tofu and meat substitutes

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Table A-1. EFPG Descriptions (continued)

Tier 1	Tier 2	Tier 3	Tier Code and EFPG	Description
Meat and protein foods (cont.)	Tofu and meat substitutes (cont.)		59000	<ul style="list-style-type: none"> ■ Tofu, vegetarian hot dogs and burgers, seitan, other meat substitutes ■ Includes meat and poultry substitutes, including cooked versions ■ Includes imitation bacon bits
Prepared meals, sides, and salads			6	<ul style="list-style-type: none"> ■ The prepared meal, sides, and salads group includes ready-to-eat foods, frozen and refrigerated ready-to-heat foods, shelf-stable ready-to-heat foods and soups, and shelf-stable meal kits
	Ready-to-eat foods		600	<ul style="list-style-type: none"> ■ Prepared foods that are ready to eat
			60000	<ul style="list-style-type: none"> ■ Prepared foods that are ready to eat ■ Includes salads (including packaged salad kits with dressing and/or add-ins like croutons, meat, and nuts), sandwiches, rotisserie chickens, frozen chicken patties, and stuffed chicken breasts; items from a salad or hot bar; and prepared items like hummus ■ Includes prepared pasta with sauce, sandwiches, meatballs ■ Includes vegetable trays that contain more than just vegetables ■ Includes fruit trays that contain more than just fruit ■ Includes rotisserie chicken and stuffed chicken breast ■ Processed fish and seafood products with additional ingredients (e.g., frozen fish sticks) ■ Includes chicken salad, hard-boiled eggs, hummus, packaged lunch kits, baba ghanoush/eggplant dip
	Frozen/refrigerated ready-to-heat foods		625	<ul style="list-style-type: none"> ■ Frozen and refrigerated prepared foods that are ready to heat

(continued)

Table A-1. EFPG Descriptions (continued)

Tier 1	Tier 2	Tier 3	Tier Code and EFPG	Description	
Prepared meals, sides, and salads (cont.)	Frozen/refrigerated ready-to-heat foods (cont.)		62500	<ul style="list-style-type: none"> ■ Frozen and refrigerated prepared foods that are ready to heat ■ Includes chicken patties, fish sticks, frozen waffles, frozen sandwiches, frozen meatballs, pastry stuffed with meat or vegetables, frozen fish sticks, frozen vegetables with sauce, microwave dinners, pizza ■ Includes meatloaf and breaded meats ■ Includes cooked seafood that is frozen (except shrimp) ■ Includes prepared (ready-to-heat) rice ■ Includes frozen or refrigerated tortellini with filling, ravioli with filling, dumplings with filling, pierogi with filling ■ Excludes frozen bread; frozen dough; uncooked raw uncoated meat; and poultry, seafood, and meat substitutes 	
	Shelf-stable ready-to-heat foods and soups		650	<ul style="list-style-type: none"> ■ Canned soups (including condensed soups), canned chili, canned pasta Includes prepared, shelf-stable, ready-to-heat foods sold in cartons and microwavable containers, such as soups packaged in cartons packaged in microwavable containers 	
				65000	<ul style="list-style-type: none"> ■ Canned soups (including condensed soups), canned chili, canned pasta Includes prepared, shelf-stable, ready-to-heat foods sold in cartons and microwavable containers
	Shelf-stable meal kits			675	<ul style="list-style-type: none"> ■ Shelf-stable kits that contain most of the ingredients necessary to make a side dish or entrée with limited preparation, such as adding water, oil, or meat, and cooking is required
			67500	<ul style="list-style-type: none"> ■ Includes dry soups, macaroni and cheese kits, taco kits, rice-pilaf kits ■ Includes shelf-stable box mixes: rice-vermicelli, rice and bean mixes, pasta salad box ■ Includes ramen and Asian noodle soup 	
Other foods			7	<ul style="list-style-type: none"> ■ Fats, oils, and salad dressings; gravies, sauces, condiments, and spices; beverages; desserts, sweets, and candies; breakfast cereals; savory snacks; vitamins and meal supplements; baby food; and infant formula 	

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Table A-1. EFPG Descriptions (continued)

Tier 1	Tier 2	Tier 3	Tier Code and EFPG	Description
Other foods (cont.)	Fats, oils, and salad dressings		700	<ul style="list-style-type: none"> ■ Fats, oils, and salad dressings
		Fats and oils	70000	<ul style="list-style-type: none"> ■ Butter, margarine, salad and cooking oils, lard
		Salad dressing	70050	<ul style="list-style-type: none"> ■ Salad dressings and mayonnaise
	Gravies, sauces, condiments, and spices		710	<ul style="list-style-type: none"> ■ Condiments, gravies, sauces, dry spices
		Condiments, gravies, and sauces	71000	<ul style="list-style-type: none"> ■ Ketchup, barbecue sauce, mustard, gravies, pasta sauce, Worcestershire sauce, soy sauce ■ Includes relish and chutney ■ Includes Sloppy Joe and other meat sandwich mixes ■ Includes dips excluding baba ghanoush and hummus ■ Includes miso paste ■ Excludes cheese sauces
		Dry spices and flavorings or and baking extracts?	71050	<ul style="list-style-type: none"> ■ Dry parsley; oregano; pepper; garlic, onion; salt; pepper; thyme; spice mixtures, such as Italian spice, curry powder, and poultry seasoning ■ Includes vanilla and other baking extracts and flavorings
	Beverages		720	<ul style="list-style-type: none"> ■ All liquid beverages and beverage mixes excluding unflavored milk products and 100% fruit and vegetable juices
		Sweetened coffee and tea	72000	<ul style="list-style-type: none"> ■ Coffee and tea drinks that have added sugars, such as frappuccinos, cappuccinos, lattes, and sweetened iced tea ■ Includes dry powders to make coffee or tea beverages with any type of sweetener (low calorie, agave, honey, artificial, sugar, etc.)
		Unsweetened coffee and tea	72010	<ul style="list-style-type: none"> ■ Coffee and tea drinks that have no added sweeteners, such as unsweetened prepared tea and coffee and components to make these drinks such as ground coffee, loose tea, and tea bags ■ Includes dry powders to make these beverages without added sweeteners

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Table A-1. EFGP Descriptions (continued)

Tier 1	Tier 2	Tier 3	Tier Code and EFGP	Description
Other foods (cont.)	Beverages (cont.)	Flavored milk and other sweetened milk-based beverages	72020	<ul style="list-style-type: none"> ■ Flavored milk (e.g., chocolate and strawberry), flavored milk replacement drinks (e.g., chocolate almond milk, vanilla rice milk), milk shakes ■ Includes dry powders to make these beverages only when the mix is a dry mix ■ Includes original flavor coconut milk, refrigerated and frozen yogurt drinks, kefir coffee beverages ■ Sweetened condensed milk is included in the whole milk Tier-3 category ■ Dry beverage powders for flavored milk that do not include dry milk are included in the all other caloric beverages category
		Low-calorie beverages	72030	<ul style="list-style-type: none"> ■ Drinks not included in sweetened or unsweetened coffee and tea, alcohol, or water categories that have less than 5 calories per 8 ounces ■ Includes low- or no-calorie sodas and sweetened water ■ Includes beverage enhancers such as Cascade Ice, Propel, and Sobe Life water ■ Includes product description = diet
		All other caloric beverages	72040	<ul style="list-style-type: none"> ■ Drinks not included in sweetened or unsweetened coffee and tea, flavored and sweetened milk beverages, alcohol, or water categories that have at least 5 calories per 8 ounces ■ Includes sports drinks, energy drinks, regular sodas, tomato cocktail mix, cranberry cocktail drink, grape cocktail drink, juice drinks ■ Includes dry powders to make these beverages and dry powders for flavored milk without dry milk in the mix ■ Includes frozen smoothie kits, bottled smoothies, fruit nectar drinks, tomato cocktail mix, dry milk flavoring without milk, dry beverage powder ■ Includes Glaceau Vitamin water ■ 100% fruit or vegetable juice is included under the fruit Tier-1 category
		Alcohol	72050	<ul style="list-style-type: none"> ■ Alcoholic drinks, such as beer, wine, liquor, and premixed alcoholic beverages
		Water	72060	<ul style="list-style-type: none"> ■ All unsweetened water, whether still or carbonated

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Table A-1. EFPG Descriptions (continued)

Tier 1	Tier 2	Tier 3	Tier Code and EFPG	Description		
Other foods (cont.)	Desserts, sweets, and candies		730	<ul style="list-style-type: none"> ■ Sweeteners, jellies and jams, candies, baked goods, baking mixes, ice cream and other milk-based desserts, all other desserts 		
			Sweeteners	73000	<ul style="list-style-type: none"> ■ All types of sugars; no-calorie sweeteners; syrups; honey; chocolate, butterscotch, caramel, and other sauces; icings ■ Includes coffee syrups and flavorings ■ Includes nondairy whipped topping ■ Excludes drink powders 	
			Jellies/jams	73010	<ul style="list-style-type: none"> ■ All types of jellies, jams, marmalades, preserves 	
			Candy	73020	<ul style="list-style-type: none"> ■ All types of candy, both chocolate and nonchocolate; chewing gum ■ Includes sugar-free and regular candies ■ Includes sugar-free and regular chewing gum ■ Includes sugar sprinkles 	
			Baked goods	73030	<ul style="list-style-type: none"> ■ Cakes, cookies, pies, pastries, doughnuts, granola bars, banana and other sweet breads, muffins that are both fresh (from an in-store bakery) and prepackaged ■ Includes fortified snack bars (e.g., Fiber One and Clif bars) ■ Includes toaster strudel, sweetened rolls, piecrust, puff pastry ■ There is no distinction between refined and whole-grain content 	
			Cake and cookie mixes	73040	<ul style="list-style-type: none"> ■ Dry cake, muffin, cookie, sweet bread (e.g., banana bread), brownie mixes ■ Includes refrigerated cookie dough 	
			Ice cream and other milk-based desserts	73050	<ul style="list-style-type: none"> ■ Ice cream, frozen yogurt, ice cream cakes, ambrosia, cheesecake, puddings 	
			All other desserts	73060	<ul style="list-style-type: none"> ■ Any other sweet desserts that are not in the other categories, such as gelatins (e.g., Jell-O) and nondairy popsicles 	
		Breakfast cereals			740	<ul style="list-style-type: none"> ■ Ready-to-eat breakfast cereals including flavored oatmeal, grits, hominy
				Whole-grain breakfast cereal	74000	<ul style="list-style-type: none"> ■ Ready-to-eat whole-grain breakfast cereals ■ Includes flavored oatmeal and other flavored whole-grain cereal grains ■ Greater than 50% of grain ounce equivalents from whole grains⁹

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Table A-1. EFPG Descriptions (continued)

Tier 1	Tier 2	Tier 3	Tier Code and EFPG	Description
Other foods (cont.)	Breakfast cereals (cont.)	All other breakfast cereal	74050	<ul style="list-style-type: none"> ■ Ready-to-eat non-whole-grain breakfast cereals ■ Includes flavored non-whole-grain cereal grains, such as most grits and hominy ■ Less than or equal to 50% of grain ounce equivalents from whole grains^a
	Savory snacks		750	<ul style="list-style-type: none"> ■ Savory whole grain and other snacks
		Whole-grain snacks	75000	<ul style="list-style-type: none"> ■ Savory whole-grain snacks ■ Includes ready-to-eat and microwave popcorn, whole-wheat crackers, some corn chips, multigrain snacks ■ Includes granola snack mix ■ Greater than 50% of grain ounce equivalents from whole grains^a
		All other snacks	75050	<ul style="list-style-type: none"> ■ Savory non-whole-grain snacks ■ Includes potato chips, trail mixes, pork rinds, most crackers, snacks made from vegetables and beans, wonton salad toppings, hard breadsticks, some corn chips ■ Less than or equal to 50% of grain ounce equivalents from whole grains^a
	Vitamins and meal supplements		760	<ul style="list-style-type: none"> ■ Vitamin and meal replacements and supplements
			76000	<ul style="list-style-type: none"> ■ All vitamins, protein shakes, diet bars, similar products ■ Includes instant breakfast drinks, Ensure, protein powders, meal replacement bars ■ Excludes fortified snack bars
	Baby food		770	<ul style="list-style-type: none"> ■ All baby food except infant formula
			77000	<ul style="list-style-type: none"> ■ All baby food ■ Includes fruit sauce puree
	Infant formula		780	<ul style="list-style-type: none"> ■ All infant formula
			78000	<ul style="list-style-type: none"> ■ All infant formula
Not coded			99999	<ul style="list-style-type: none"> ■ Foods with insufficient descriptions to allow assignment to an EFPG

^a This qualifier was not used to assign IRI product codes to EFPGs but was included in the original Tornow et al. (2018) documentation.

Source: Derived from Tornow, C., Brown, B., & Zimmerman, T. (2018, July 27). Final delivery of Task 4 programs and supporting files. Memorandum prepared by Westat for U.S. Department of Agriculture, Economic Research Service.