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NUMERATOR MONTHLY INFLATION REPORT: FOOD AT HOME PRICES UP 0.3% IN JANUARY

Numerator Releases Advance Projection of Consumer Price Index

CHICAGO, IL, February 13, 2023 – Numerator projects that the Consumer Price Index for food at home increased 0.3% month-over-month in January.

Numerator, a data and technology company providing insights into consumer behavior, has released its monthly Numerator Inflation Report, an advance projection of the US Bureau of Labor Statistics' monthly Consumer Price Index (CPI). The report currently measures inflation for food at home overall and its subcomponents including cereals and bakery products; meats, poultry, fish, and eggs; dairy and related products; fruits and vegetables; nonalcoholic beverages and beverage materials; and other food at home.

As shown in Table 1, according to Numerator, seasonally adjusted prices for all food at home purchases increased 0.3% month-over-month in January, an acceleration from the 0.2% increase in December. In January, seasonally adjusted prices for cereals and bakery products increased 0.5%, prices for meats, poultry, fish, and eggs increased 0.7%, prices for dairy and related products decreased 0.3%, prices for fruits and vegetables increased 0.8%, prices for nonalcoholic beverage and beverage materials decreased 1.3%, and prices for other food at home increased 0.3%.

On a year-over-year basis, between January 2021 and January 2022, prices for food at home increased 9.7% overall, prices for cereals and bakery products increased 12.7%, prices for meats, poultry, fish, and eggs increased 7.5%, prices for dairy and related products increased 12.0%, prices for fruits and vegetables increased 6.9%, prices for nonalcoholic beverages and beverage materials increased 10.1%, and prices for other food at home increased 11.3%. (For additional details, please see Table 2 at the end of this report).

Table 1: Change in Consumer Price Index, by expenditure category, January 2023

Expenditure category	Unadjusted percent change		Seasonally adjusted percent change		
	Numerator	Numerator	CPI	CPI	Numerator
	Jan 2022- Jan 2023	Dec 2022- Jan 2023	Oct 2022- Nov 2022	Nov 2022- Dec 2022	Dec 2022- Jan 2023
Food at home	9.7	0.3	0.5	0.2	0.3
Cereals and bakery products	12.7	0.4	1.1	0.0	0.5
Meats, poultry, fish, and eggs	7.5	1.8	1.8	1.0	0.7
Dairy and related products	12.0	-0.1	-0.1	-0.3	-0.3
Fruits and vegetables	6.9	0.8	0.8	-0.6	0.8
Nonalcoholic beverages and beverage materials	10.1	0.2	0.7	0.1	-1.3
Other food at home	11.3	0.3	-0.1	0.4	0.3



The Numerator Inflation Report is produced and published by Numerator under the leadership of Numerator Chief Economist, Dr. Leo Feler. The report uses Numerator’s first-party and real-time consumer data, aligned with the methodology the US Bureau of Labor Statistics uses to calculate the CPI.

METHODOLOGY AND COMPARISON TO CPI

Numerator collects price and quantity data directly from over 1 million US households each month and selects qualifying households to construct a representative panel of 105,000 US consumers. These consumers upload images of paper receipts and link their loyalty and email accounts, providing access to their detailed purchase information on a continuous basis. From this purchase information, Numerator knows the prices consumers pay for over 4 million items purchased throughout the US in the month of January.

In contrast, the US Bureau of Labor Statistics obtains price information for the CPI based on a static survey of 24,000 households regarding their consumption patterns during a prior year and then has government surveyors visit retail establishments to scan items or scrape retailers’ websites to obtain prices on approximately 80,000 items that these 24,000 households tended to buy when they were surveyed.

Numerator data captures the prices that a representative panel of 105,000 US consumers pay for items they actually buy in real-time during a given month, whereas the CPI captures prices for a basket of goods selected based on the likelihood that a sample of 24,000 households bought those items in a prior year. The inflation consumers actually experience – which is what Numerator captures – is different than the inflation the CPI reports. For example, if consumers

encounter an item that is out-of-stock and have to substitute to higher-priced items, their “experienced inflation” might be greater than the inflation the CPI reports. Alternatively, if a consumer adapts their shopping behavior by buying in bulk or substituting to lower-priced items, their “experienced inflation” might be lower than the inflation the CPI reports.

Numerator attempts to replicate the methodology the US Bureau of Labor Statistics uses to construct the CPI; however, Numerator also has a more detailed view on how consumers adapt to inflation. Since the US Bureau of Labor Statistics does not observe consumer purchases in real-time, its measure of consumer price inflation cannot account for changes in consumer behavior. In contrast, Numerator can evaluate how different segments of the population experience inflation, depending, for example, on the density of retailers and competition among retailers in the area where consumers live, whether consumers have memberships to certain retailers (e.g., club memberships), and whether consumers have access to broadband or transportation to be able to shop among a broader set of retailers.

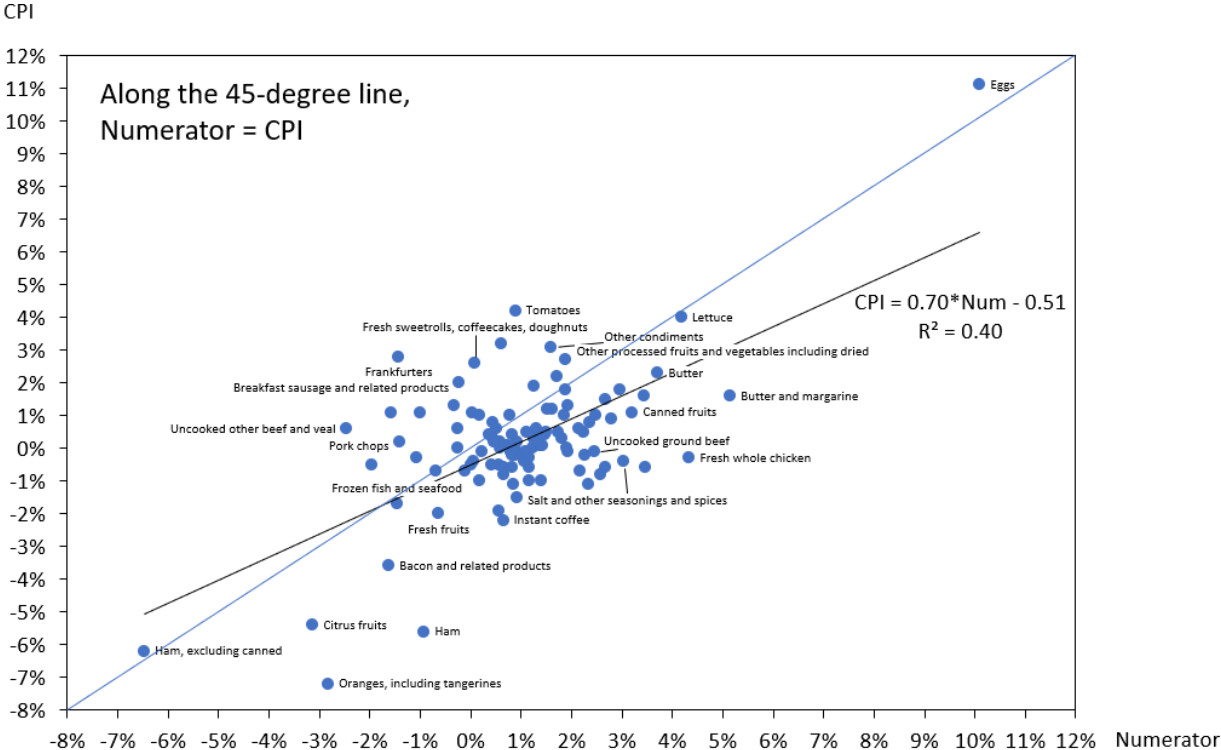
Because of the differences in how Numerator and the US Bureau of Labor Statistics collect price data, the Numerator Inflation Report will differ from the US Bureau of Labor Statistics’ monthly CPI release. These differences are attributable to methodology. To get Numerator’s monthly inflation report to match the CPI, Numerator must control for changes in consumer behavior in an attempt to keep purchasing behavior constant. Additionally, Numerator collects price data over the course of an entire month, whereas the US Bureau of Labor Statistics collects price data for each product in its sample only at a specific point in time during the month. These two methodological differences – the fact that Numerator data also captures changes in consumer behavior in response to price changes and the fact that Numerator captures price data over the course of an entire month on a continuous basis – account for the differences in reported inflation between the Numerator Inflation Report and the US Bureau of Labor Statistics’ monthly CPI release.

EVALUATION OF LAST MONTH’S NUMERATOR ESTIMATES VERSUS THE US BUREAU OF LABOR STATISTICS’ CPI RELEASE

Despite the methodological differences between the Numerator Inflation Report and the US Bureau of Labor Statistics’ monthly CPI release, Numerator correctly captures trends in monthly price changes. However, the magnitudes of these price changes may differ from those reported in the US Bureau of Labor Statistics’ monthly CPI Release. For the prior month, the correlation

between the two measures was 0.64. Each month, Numerator adjusts its estimation model to account for the prior months' differences in magnitudes between its measures and the official CPI release. In the coming months, Numerator will also be expanding its measures to include other consumption categories in addition to food at home and will be expanding its panel to 150,000 consumers.

Figure 1: Non-seasonally adjusted MOM % change, Numerator vs CPI, December 2022



ABOUT NUMERATOR

[Numerator](#) is a data and technology company bringing speed and scale to market research. Numerator blends first-party data from over 1 million US households with advanced technology to provide insights into consumer behavior. Headquartered in Chicago, Illinois, Numerator has over 2,000 employees worldwide, and 80 of the top 100 CPG brands are Numerator clients.

DISCLAIMER

The Numerator Inflation Report has been prepared for informational purposes only, without any express or implied warranty of any kind, including warranties of accuracy, completeness, or fitness for any particular purpose. The information contained in or provided from or through this

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Table 2: Change in Consumer Price Index, by detailed expenditure category, January 2023

Expenditure category	Unadjusted percent change		Seasonally adjusted percent change		
	Numerator	Numerator	CPI	CPI	Numerator
	Jan 2022- Jan 2023	Dec 2022- Jan 2023	Oct 2022- Nov 2022	Nov 2022- Dec 2022	Dec 2022- Jan 2023
Food at home	9.7	0.3	0.5	0.2	0.3
Cereals and bakery products	12.7	0.4	1.1	0.0	0.5
Cereals and cereal products	13.9	1.5	0.6	-0.3	1.5
Flour and prepared flour mixes	17.6	4.7	1.5	-1.0	1.1
Breakfast cereal	10.9	-2.0	0.4	1.1	-2.1
Rice, pasta, cornmeal	12.5	0.6	0.7	-0.5	1.1
Rice	11.0	-0.1	0.8	0.5	-0.1
Bakery products	12.3	0.0	1.0	0.1	0.0
Bread	12.6	-0.2	2.0	0.2	-0.2
White bread	14.5	0.5	1.7	1.3	0.5
Bread other than white	12.0	0.8	2.3	-0.7	0.8
Fresh biscuits, rolls, muffins	12.3	-0.2	2.2	0.0	-0.5
Cakes, cupcakes, and cookies	12.8	0.3	1.3	0.3	0.3
Cookies	11.4	-1.8	1.5	1.0	-1.8
Fresh cakes and cupcakes	9.0	-2.1	1.5	-0.4	-2.1
Other bakery products	12.7	1.2	0.7	0.0	0.0
Fresh sweetrolls, coffeecakes, doughnuts	10.0	0.7	-0.3	2.6	0.6
Crackers, bread, and cracker products	12.7	1.5	1.9	-1.3	0.1
Frozen and refrig. bakery products, pies, tarts, turnovers	15.9	2.1	-0.4	-1.1	2.0
Meats, poultry, fish, and eggs	7.5	0.7	-0.2	1.0	0.7
Meats, poultry, and fish	3.8	-0.4	-0.4	0.1	-0.4
Meats	3.7	1.5	-0.4	0.6	1.5
Beef and veal	-0.5	1.4	-0.8	1.3	1.3
Uncooked ground beef	0.3	-0.6	-0.9	-0.1	-0.6
Uncooked beef roasts	-2.8	-0.9	-1.3	1.1	-0.9
Uncooked beef steaks	-8.2	-3.7	0.0	0.9	-3.8
Uncooked other beef and veal	-6.9	-3.4	-1.5	0.6	-3.5
Pork	2.3	0.9	-0.3	-0.2	0.6
Bacon, breakfast sausage, and related products	1.4	0.2	-1.0	-0.5	-0.9
Bacon and related products	-1.4	1.5	-1.8	-2.9	2.1
Breakfast sausage and related products	9.2	1.8	0.0	2.1	-0.7
Ham	2.5	0.6	0.5	-1.1	-0.5
Ham, excluding canned	2.3	0.9	0.8	-1.3	-0.5
Pork chops	3.1	-0.5	1.1	0.2	-0.5
Other pork including roasts, steaks, and ribs	0.7	0.8	-1.7	0.5	0.2
Other meats	12.3	0.8	0.4	0.3	1.2
Frankfurters	21.9	10.6	0.1	3.9	9.5
Lunchmeats	12.8	0.7	0.4	-0.2	0.7
Poultry	11.1	1.0	-0.8	-0.6	1.0
Chicken	11.0	1.0	-0.8	-0.6	1.0
Fresh whole chicken	10.4	-2.0	0.5	-0.3	-2.1
Fresh and frozen chicken parts	6.6	-3.1	-1.3	-0.8	-3.2
Other uncooked poultry including turkey	9.0	-1.6	1.8	-0.5	-3.1
Fish and seafood	4.1	0.6	-0.1	-0.7	0.5
Fresh fish and seafood	-0.2	-1.7	-1.4	-1.0	-1.7
Processed fish and seafood	6.4	0.8	1.0	0.0	0.9
Shelf stable fish and seafood	10.6	3.8	1.3	2.4	3.8
Frozen fish and seafood	12.7	8.0	1.4	-1.0	7.5
Eggs	35.9	-0.5	2.3	11.1	-0.5

Table 2 – Continued: Change in Consumer Price Index, by detailed expenditure category, January 2023

Expenditure category	Unadjusted percent change		Seasonally adjusted percent change		
	Numerator	Numerator	CPI	CPI	Numerator
	Jan 2022- Jan 2023	Dec 2022- Jan 2023	Oct 2022- Nov 2022	Nov 2022- Dec 2022	Dec 2022- Jan 2023
Dairy and related products	12.0	-0.1	1.0	-0.3	-0.3
Milk	9.6	-0.7	0.8	-1.0	0.1
Fresh whole milk	7.8	-1.3	1.1	-0.6	-1.3
Fresh milk other than whole	10.3	-0.6	0.8	-0.6	-0.2
Cheese and related products	9.1	-1.2	0.0	0.5	-1.2
Ice cream and related products	15.0	2.5	2.0	-1.1	1.7
Other dairy and related products	14.3	-1.3	0.6	-0.1	-1.4
Fruits and vegetables	6.9	0.8	1.4	-0.6	0.8
Fresh fruits and vegetables	5.1	0.8	1.8	-1.1	0.8
Fresh fruits	2.2	1.1	2.3	-1.9	0.5
Apples	9.3	4.5	3.2	0.2	3.1
Bananas	2.1	1.0	0.5	-0.4	1.0
Citrus fruits	0.6	0.3	2.8	-0.3	1.6
Oranges, including tangerines	0.1	-0.9	2.5	-1.7	-0.8
Other fresh fruits	3.4	3.2	1.8	-2.6	0.9
Fresh vegetables	8.4	0.5	1.2	-0.1	-0.8
Potatoes	18.3	10.8	-1.4	1.6	5.0
Lettuce	20.3	-0.9	8.9	4.0	-0.9
Tomatoes	7.0	-0.9	2.6	3.4	-4.6
Other fresh vegetables	7.2	3.2	0.7	-1.3	1.8
Processed fruits and vegetables	12.8	1.1	0.4	0.7	0.6
Canned fruits and vegetables	14.8	1.7	0.2	0.3	0.7
Canned fruits	11.4	-1.3	1.1	-0.9	-0.8
Canned vegetables	13.6	0.4	-0.5	0.4	-1.4
Frozen fruits and vegetables	11.1	0.3	1.4	1.1	-0.3
Frozen vegetables	15.3	1.9	1.7	0.9	0.6
Other processed fruits and vegetables including dried	9.9	0.4	-0.1	1.7	0.5
Dried beans, peas, and lentils	4.9	-3.7	-0.7	3.2	-3.9
Nonalcoholic beverages and beverage materials	10.1	-0.2	0.7	0.1	-1.3
Juices and nonalcoholic drinks	10.8	0.3	0.5	0.0	-0.9
Carbonated drinks	20.9	11.9	0.4	1.1	8.1
Frozen noncarbonated juices and drinks	10.8	1.3	1.7	1.0	1.3
Nonfrozen noncarbonated juices and drinks	11.3	1.7	0.6	-0.7	1.5
Beverage materials including coffee and tea	9.2	-0.5	1.0	0.2	-1.7
Coffee	9.7	0.4	0.5	0.0	-0.5
Roasted coffee	10.9	0.9	0.2	0.6	-0.3
Instant coffee	6.3	-1.5	2.0	-2.2	-1.5
Other beverage materials including tea	3.2	-7.4	1.2	0.1	-8.0
Other food at home	11.3	0.3	-0.1	0.4	0.3
Sugar and sweets	9.5	0.1	-0.3	0.4	0.1
Sugar and sugar substitutes	12.0	2.0	0.5	1.0	-0.3
Candy and chewing gum	14.4	5.9	0.3	1.0	5.6
Other sweets	9.5	0.2	-0.7	-0.3	-1.6
Fats and oils	16.9	0.9	0.0	1.5	-0.4
Butter and margarine	24.2	1.5	0.4	1.7	-1.1
Butter	20.4	1.7	0.2	3.3	-2.5
Salad dressing	15.7	0.5	1.0	-1.1	0.6
Other fats and oils including peanut butter	12.3	0.7	-1.1	3.4	-0.9
Peanut butter	2.9	-1.1	-1.6	1.8	-1.1
Other foods	11.1	0.7	0.0	0.3	1.2
Soups	12.5	-0.7	-2.0	0.9	0.2
Frozen and freeze dried prepared foods	7.5	-4.2	-0.9	1.1	-2.5
Snacks	12.3	3.3	-0.8	-0.2	3.2
Spices, seasonings, condiments, sauces	9.2	0.6	0.2	1.0	-1.3
Salt and other seasonings and spices	3.7	-1.1	-0.5	-0.5	-3.3
Olives, pickles, relishes	13.3	0.1	0.8	0.6	0.1
Sauces and gravies	8.8	-2.2	0.2	1.5	-3.8
Other condiments	11.2	6.6	-1.6	3.8	4.9
Baby food	5.1	-4.7	0.3	-0.2	-4.9
Other miscellaneous foods	11.9	0.5	0.2	-0.3	2.3
Prepared salads	9.5	-0.1	-0.3	-0.9	0.7