EQUITY RESEARCH

RBC Capital Markets, LLC
Christopher Carril (Analyst)
(617) 725-2109,
christopher.carril@rbccm.com
Khadijah Gibson (Associate)
(347) 610-7116,
khadijah.gibson@rbccm.com

June 10, 2022

Restaurants: Half-Time Report

Updating Our Thoughts on the Restaurants Group Heading into 2H22

Our view: As we approach the second half of the year, concerns around the health of the consumer and a potentially weaker macro environment more broadly continue to weigh on restaurant stocks and sentiment. As we reflect on our conversations with restaurant company management teams in recent weeks, we see potential offsets to sales and margin headwinds (e.g., pricing, increasing mobility, improved staffing levels), though we acknowledge that the near term will likely remain bumpy for restaurant stocks until a clearer picture around consumer health emerges. We continue to prefer highly franchised fast food names for the time being (QSR, DPZ, MCD, JACK), though we still see opportunities in names with greater company ownership and thus greater leverage should the demand environment prove stronger than anticipated (CMG, SG, DRI). Finally, in this note, we also explore the relationship between restaurant spend and other major consumer categories in order to better understand sensitivity of restaurant demand to inflationary pressures elsewhere.

In recent weeks, we've had the opportunity to connect with a number of restaurant companies, via both RBC Capital Markets' Global Consumer and Retail Conference (June 1–2) and investor calls we have hosted with company management teams. Among the companies we have spoken with are **QSR**, **SBUX**, and **SG** (see page 3 for the full list, as well as links to relevant recap notes). At a high level, we feel that tone from management teams has remained constructive about demand levels, though this has also been generally accompanied by acknowledgement of inflationary pressures faced by consumers today. And while we believe that there are credible demand drivers in place over the near term (e.g. pent-up demand, increasing mobility, pricing actions), our sense is that sentiment on the group will likely continue to lean negative overall, as investors view near-term trends as not necessarily indicative of 2H levels, and as questions around consumer and broader economic health loom. Currently, our restaurants coverage trades at ~19x 2023E EPS, versus the recent historical (trailing three-year) average of ~24x, and relative to the S&P 500, our coverage trades at 1.1x, versus the trailing three-year average of 1.3x.

Beyond the 2H demand environment, we also remain focused on food and labor costs and, ultimately, restaurant margins. On labor, outside of idiosyncratic pressures (e.g., delivery driver availability), we continue to hear commentary around improving staffing levels, which we see as supported by moderating quit rates in the accommodations and foodservice industries (back under 6%, as of April). Given improved restaurant staffing levels (industry-wide at ~94% of pre-COVID levels in May), we see potential for continued easing of Y/Y wage pressures in 2H, as well as reduction in hiring/training costs. On food costs, however, the outlook is less clear and potentially more challenging going forward. Based on work by RBC's Digital Intelligence Strategy team on food costs (see notes here and here), as well as the ArrowStream Restaurant Commodity Index (currently at 200, vs. its trailing ten-year average of 129), we take a relatively more cautious view on food costs. And while 2H22 restaurant-level margin consensus estimates have already been reduced by ~100 bps so far this year, a key question going forward is will restaurants be able to take further pricing should the food cost basket increase? To help answer this question, we will continue to watch the gap between food-at-home (FAH) and food-away-from-home (FAFH) inflation, which may provide cover should further pricing actions be deemed necessary. As of April, food-at-home inflation exceeded food-away-from-home inflation by more than 300 bps, and we will be watching to see whether this gap has narrowed or widened with this morning's May CPI print.

(Continued on page 2)

How sensitive is restaurant spending to inflationary pressures elsewhere? Given the overarching question around the health of the consumer, and the potential for consumers to scale back discretionary spending in a softer economic environment—including spending at restaurants—in this note we also provide a case study on historical allocation of consumer spend across major categories. As we had expected, categories with more inelastic demand—energy-related categories, housing, food at home (FAH)—featured the highest negative correlation with food-away-from-home (FAFH) spending. We also observed largely steady consumer allocation to FAFH over time, though we did see more variability across income cohorts. Finally, we looked at the hypothetical decline in FAFH allocation in a recession-like scenario, and our work points to a roughly -4% decline in household FAFH spending, assuming that allocation levels shift back toward 2009 levels; for the lowest income cohort, the decline is much greater (-15%). For more detail, please see pages 10–17, as well as the Appendix (pages 33–38).

In line with our prior views, in the near term we continue to favor stocks of highly franchised restaurant companies given the relatively better earnings visibility they provide (by virtue of having less direct exposure to food and labor cost inflation). Within this group, we highlight **QSR** (Outperform, $68 price target). For QSR, we see ongoing improvement at Tim Hortons Canada and continued strong global unit growth (we estimate +5.1% for 2022E, ex. Firehouse Subs) as supporting near-term stock performance. And as investors watch Burger King US trends closely, we see brand opportunities across operational simplification, improved marketing, and digital to help stabilize trends; looking ahead, investors will remain focused on any updates around BK US reimaging. On valuation, QSR currently trades at ~14x 2023E EBITDA, versus its closest peers MCD at ~16x and YUM at 17.5x, while QSR's dividend yield of 4.2% is best-in-class across its peer set. Following QSR, our order of preference for Outperform-rated franchised restaurant names is: **DPZ**, **MCD** ,and **JACK**. Among the company-owned restaurant names, our order of preference for Outperform-rated stocks is: **CMG**, **SG**, and **DRI**.

Links to Notes Following Recent Meetings with Company Managements

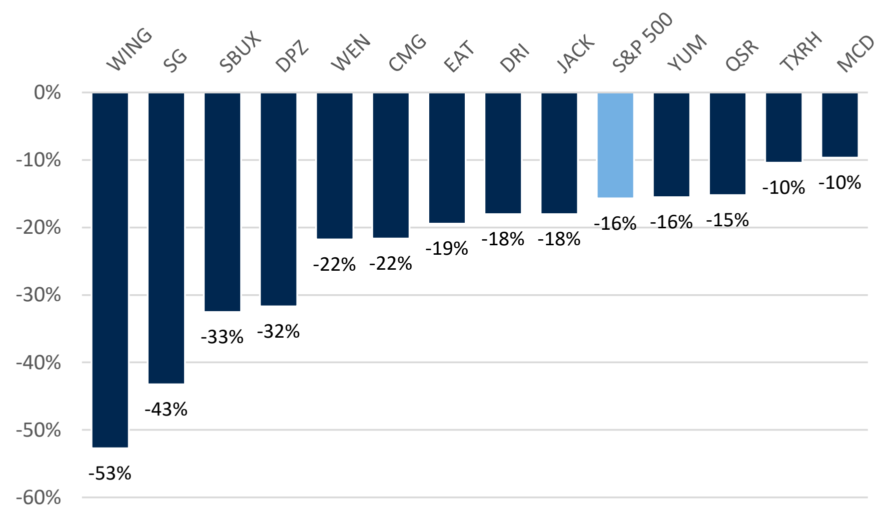
- Starbucks Corporation (SBUX): Highlights from Our Investor Call with Management – May 20
- Sweetgreen (SG): Highlights from Our Investor Call with Management – May 23
- Jack in the Box (JACK): Highlights from the RBC Global Consumer and Retail Conference – June 1
- Cava Group, Inc. (Private Company): Highlights from the RBC Global Consumer and Retail Conference – June 1
- Life Time Group Holdings (LTH): Highlights from the RBC Global Consumer and Retail Conference – June 1
- Restaurant Brands International (QSR): Highlights from the RBC Global Consumer and Retail Conference – June 2
- Kitchen United (Private Company): Highlights from the RBC Global Consumer and Retail Conference – June 2

Looking to the Restaurant Demand Environment in 2H22

Health of the Consumer Remains Top of Mind for Restaurant Investors

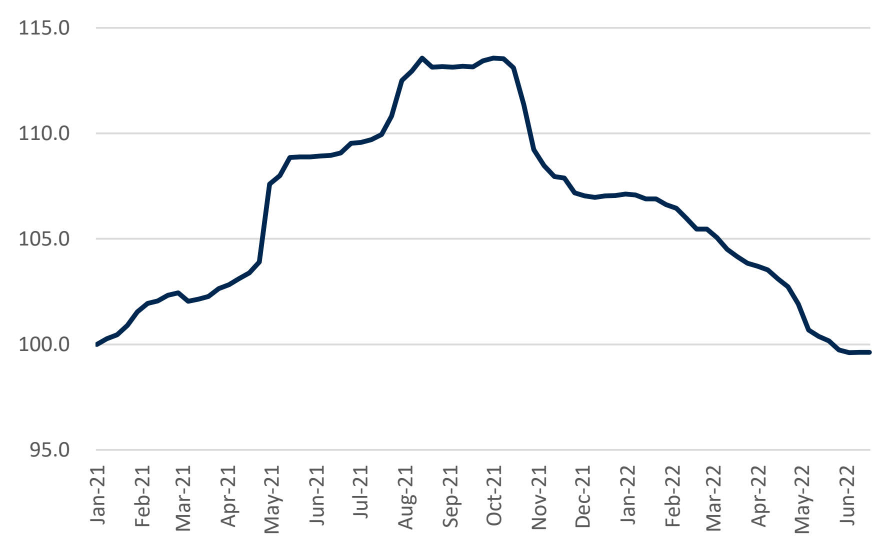
- Our restaurants coverage is down -18% YTD, with highly franchised fast food names down -13%, fast casual -29%, and casual dining -16%
- As broader economic and inflation concerns remain front and center, Street earnings estimates have declined, with 2023 EPS estimates across our coverage reduced on average a further -3% following 1Q earnings season
- In our view, overall group sentiment remains negative given ongoing worries and lack of visibility regarding the health of the consumer

RBC Restaurants Coverage Performance



Source: FactSet

RBC Restaurants Coverage 2022 Consensus EPS Estimates (Indexed to January 2021)

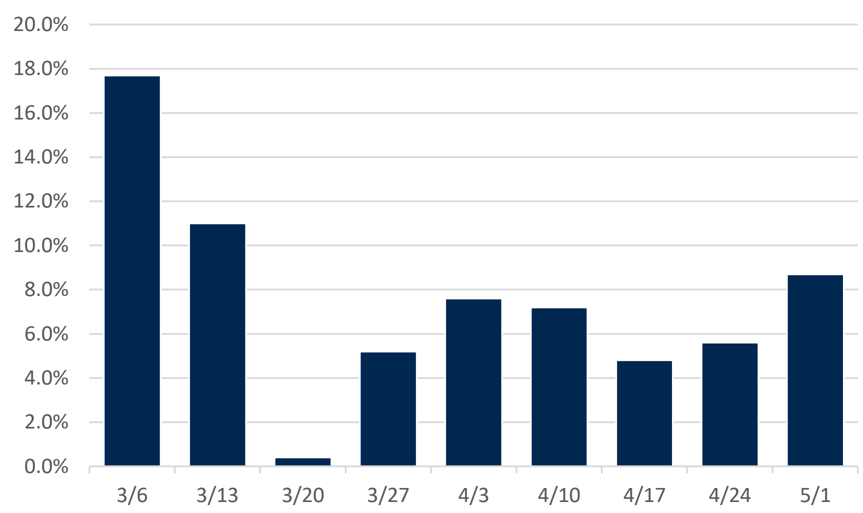


Source: FactSet

So Far, We Have Yet to See Meaningful Signs of Demand Deterioration

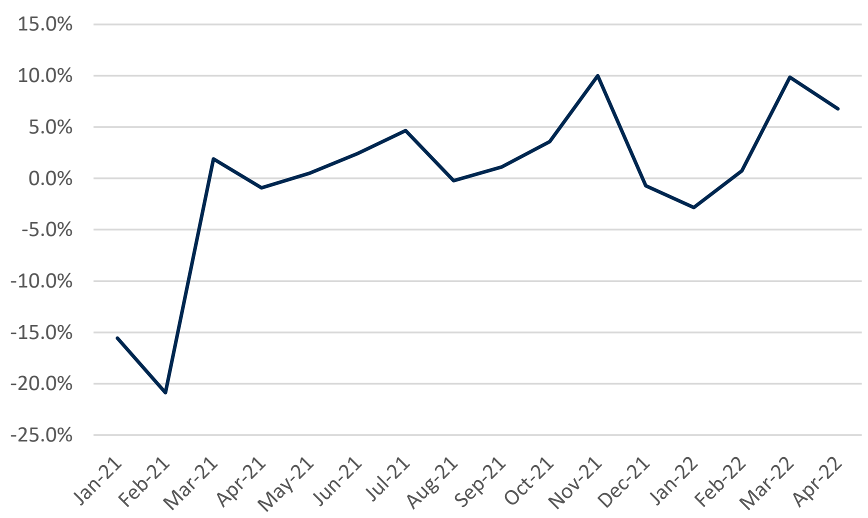
- As we had previously anticipated, restaurant sales remain stable so far this year given tailwinds from pent-up demand (especially post-Omicron), improving mobility, and pricing actions
- Per Knapp Track, April casual dining industry comp sales were +6.8% (vs. +9.0% for March), with weekly trends largely steady throughout the month
- 2QTD sales commentary/trends from earnings include:
  - **TXRH:** Reported comp growth of +9.3% during the first five weeks of 2Q22 (on a one-year basis, vs. 2021)
  - **CMG:** “And while it’s difficult to predict the comp in Q2 due to these factors, assuming current sales trends continue, we expect it to be in the 10% to 12% range, as we expect the comp to increase throughout the quarter.”

Casual Dining Weekly Comp Restaurant Sales (vs. 2021)



Source: Knapp Track

Casual Dining Monthly Comps (Three-Year Geometric Trend)



Source: Knapp Track

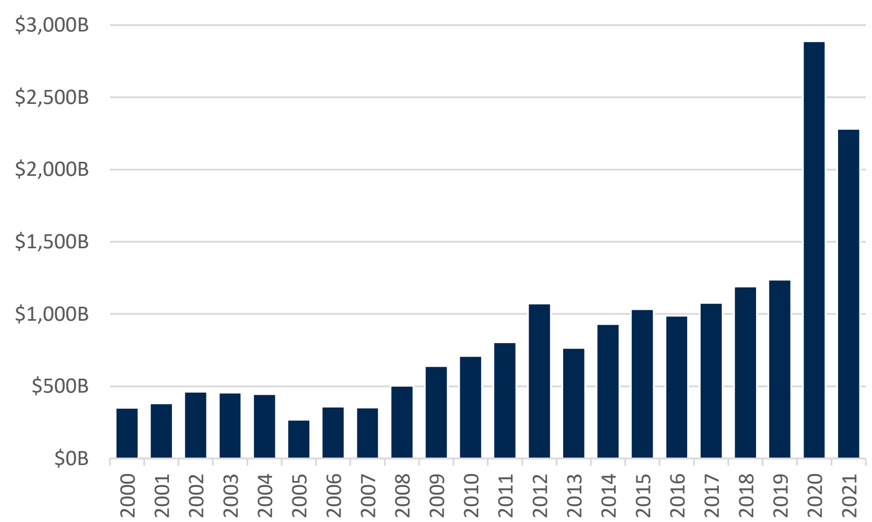
Isolating the Causes for Concern Among Restaurants

- While an economic slowdown or recession is a key concern for the market as it relates to consumer discretionary stocks more broadly, we believe restaurant investors remain focused on more acute pain points for the consumer, including:
  - ➢ Rising energy prices, specifically the impact of higher gas prices on the low-income consumer
  - ➢ Elevated food prices, both at home and away from home
  - ➢ Dwindling savings, which remain elevated versus pre-COVID levels but are a cause for concern given how quickly inflation can potentially deplete the savings of the lower-income consumer

U.S. All Grades All Formulations Retail Gasoline Prices ($/Gallon)

Source: US Energy Information Administration

Personal Savings ($B, Not Seasonally Adjusted)

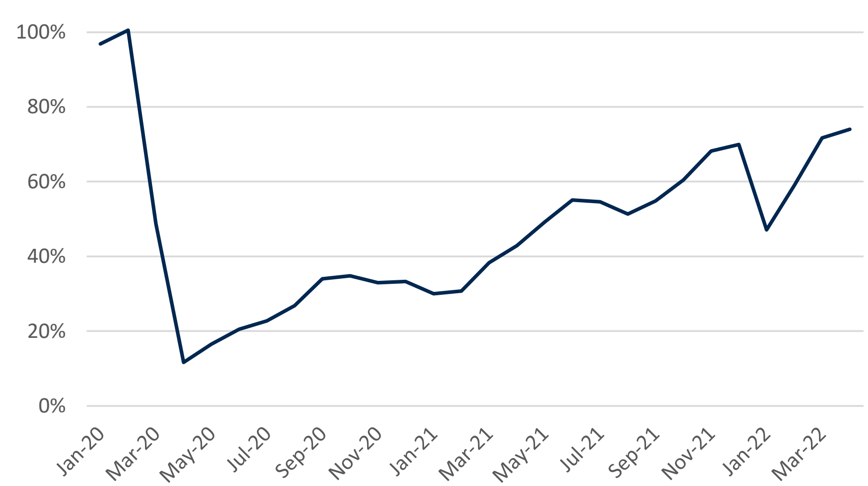


Source: Federal Reserve Bank of St. Louis

Pricing and Other Tailwinds May Help to Offset Softer Traffic Trends

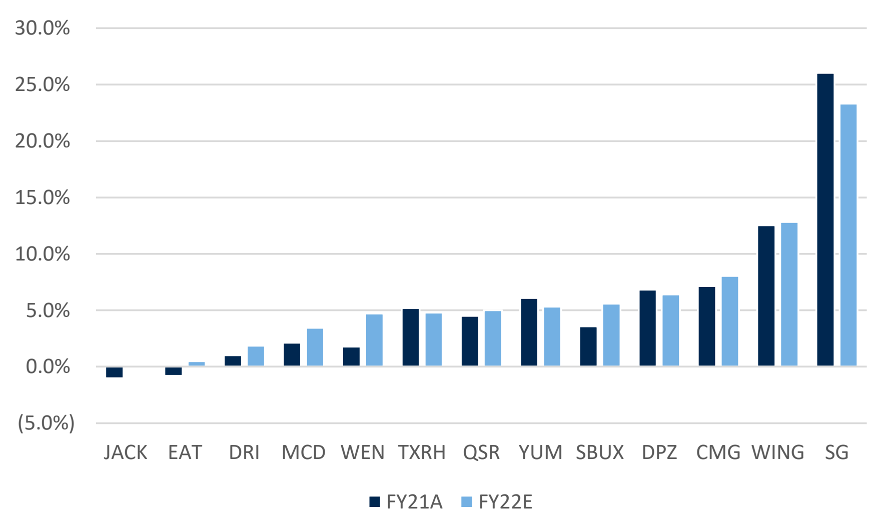
- For restaurants, we see offsets to potential traffic headwinds forming in 2H22, including:
  - ➢ Pricing actions; FAFH pricing is currently running >7% (as of April 2022), with many companies in our coverage pricing at least in line with broader FAFH inflation
  - ➢ Improving mobility, including both travel and return to office (benefit to **SG**, **SBUX**, and **QSR**)
  - ➢ Restaurant unit growth, which appears steady/strong in 2022 despite a more challenging operating environment and should also drive share gains against reduced competition

Foot Traffic for Offices in Close Proximity to sweetgreen NYC locations (vs. 2019 Levels)



Source: RBC Elements, Orbital Insight, RBC Capital Markets

Restaurants Unit Growth (2021A–22E)



Source: Company reports, RBC Capital Markets estimates

Top-Line Expectations for 2H22 Appear Mostly Reasonable

Consensus Same-Store Sales Estimates (Three-Year Geometric Trend)

	1Q21	2Q21	3Q21	4Q21	1Q22	2Q22E	3Q22E	4Q22E
Highly-Franchised Fast Food								
DPZ								
US	19.7%	23.8%	18.0%	16.1%	11.1%	14.0%	14.7%	15.0%
International	15.5%	18.1%	17.5%	11.1%	14.8%	16.0%	16.9%	14.8%
JACK (JitB System)	15.8%	20.6%	15.7%	15.8%	14.6%	15.8%	14.4%	15.9%
MCD	9.5%	13.9%	16.7%	17.4%	16.1%	14.1%	15.2%	15.5%
US	18.8%	21.5%	20.1%	19.2%	17.7%	18.2%	18.4%	18.1%
IOM	-0.7%	9.4%	15.0%	14.9%	12.8%	10.9%	13.2%	12.6%
QSR								
Tim Hortons Canada	-14.1%	-10.1%	-6.6%	-6.5%	-5.0%	-2.9%	0.1%	1.4%
Burger King US	0.1%	2.3%	0.0%	-0.6%	-0.8%	0.9%	-0.6%	1.5%
Popeyes US	30.9%	28.9%	26.0%	26.8%	24.4%	24.4%	16.3%	-6.5%
WEN	14.4%	12.4%	14.4%	17.2%	15.5%	14.5%	14.6%	15.5%
YUM	5.4%	9.8%	6.0%	6.0%	4.4%	5.4%	5.9%	7.0%
KFC	4.3%	8.9%	4.8%	6.0%	2.3%	2.9%	4.8%	5.9%
Pizza Hut	-0.3%	2.1%	0.9%	-0.1%	-0.3%	0.0%	2.2%	3.1%
Taco Bell	14.5%	19.1%	12.5%	13.4%	15.6%	14.8%	13.2%	13.9%
Fast Casual								
CMG	33.1%	30.2%	38.4%	38.1%	32.0%	31.6%	34.8%	32.1%
SBUX								
US	10.0%	17.5%	17.7%	18.8%	18.4%	19.8%	20.2%	18.2%
China	-2.6%	2.2%	-5.3%	-7.0%	-26.5%	-45.1%	-23.1%	-7.7%
SG					1.3%	19.3%	13.5%	24.6%
Casual Dining								
EAT (Company-Owned)	-6.6%	6.0%	6.6%	5.0%	3.3%	8.4%	8.1%	8.1%
DRI	1.2%	5.7%	8.8%	3.6%	8.0%	10.4%	11.0%	8.0%
TXRH (Company-Owned)	14.2%	26.8%	27.4%	26.6%	25.9%	29.8%	29.2%	27.7%

Brands levered to improving mobility trends are expected to see accelerating trends in the 2H22, which we view as a reasonable assumption

Casual dining brands are also expected see trend improvement post 1Q (impacted by Omicron), though we see some risk to expectations here given potential for softer economic conditions and trade-down from the more discretionary full-service occasions

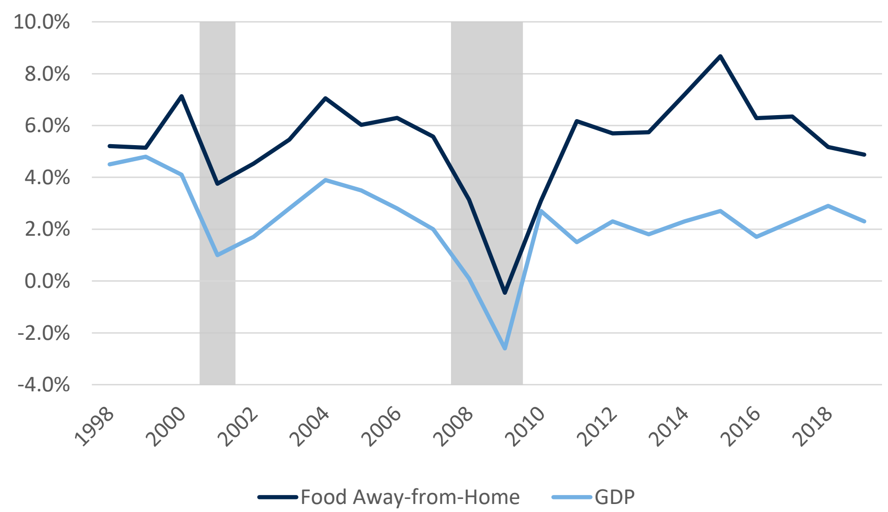
Source: Consensus Metrix

Case Study:
How Sensitive Is Food-Away-from-Home Demand to Inflationary Pressures Elsewhere?

Restaurant Demand Sensitivity to Macro and Inflation Remains a Key Focus

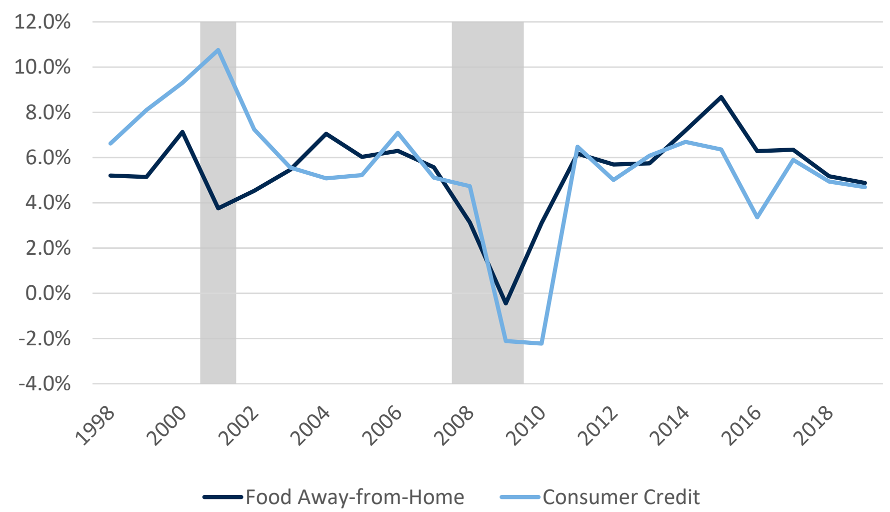
- Changes in demand for food away from home (FAFH), which includes, among other eating occasions, restaurant sales, has largely tracked GDP (*see lower-left chart*), but this relationship has been less tightly correlated since the GFC
- In addition to sensitivity to broader macro trends, we also sought to explore the relationship between consumer spending on FAFH and other categories given the elevated levels of inflation that the consumer is currently experiencing

Y/Y Changes in FAFH Spend vs. GDP



Source: Economic Research Service, US Department of Agriculture, , Federal Reserve Bank of St. Louis

Y/Y Changes in FAFH Spend vs. Consumer Credit



Source: Economic Research Service, US Department of Agriculture, , Federal Reserve Bank of St. Louis

What We Did

- Using historical data from Consumer Expenditure Surveys (conducted by the US Bureau of Labor Statistics), we analyzed allocations across major spending categories from 2004 through 2020 in order to better gauge how consumers trade or allocate across different categories
- Given focus on consumer sensitivity across income levels, we also analyzed spending across income quintiles; ***the table below shows allocation levels across all consumer cohorts—please refer to the Appendix for allocation detail by income quintiles***

Allocation of Consumer Expenditures, by Category (2004–20)

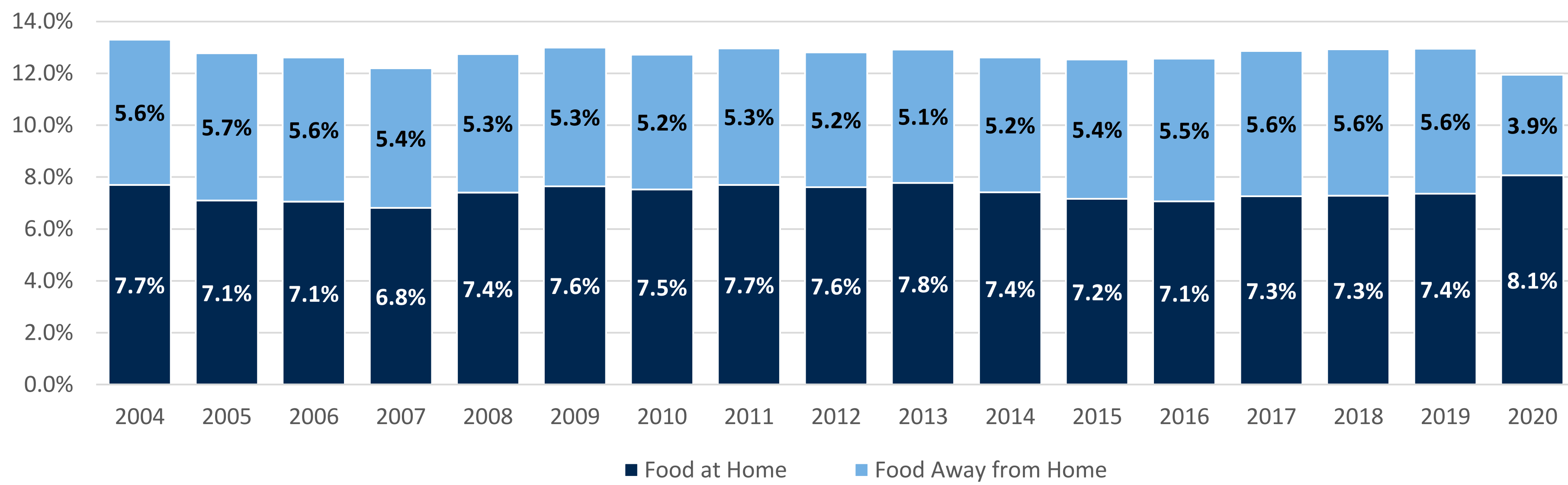
	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	FAFH Correlation '04-'19	FAFH Correlation '04-'20	Delta '19 vs. '04
Food	13.3%	12.8%	12.6%	12.2%	12.7%	13.0%	12.7%	13.0%	12.8%	12.9%	12.6%	12.5%	12.6%	12.9%	12.9%	12.9%	11.9%			-35 bps
Food at home	7.7%	7.1%	7.1%	6.8%	7.4%	7.6%	7.5%	7.7%	7.6%	7.8%	7.4%	7.2%	7.1%	7.3%	7.3%	7.4%	8.1%	-50%	-66%	-34 bps
Food away from home	**5.6%**	**5.7%**	**5.6%**	**5.4%**	**5.3%**	**5.3%**	**5.2%**	**5.3%**	**5.2%**	**5.1%**	**5.2%**	**5.4%**	**5.5%**	**5.6%**	**5.6%**	**5.6%**	**3.9%**			**-1 bps**
Alcoholic beverages	1.1%	0.9%	1.0%	0.9%	0.9%	0.9%	0.9%	0.9%	0.9%	0.9%	0.9%	0.9%	0.8%	0.9%	1.0%	0.9%	0.8%	61%	68%	-14 bps
Housing	32.1%	32.7%	33.8%	34.2%	33.9%	34.4%	34.4%	33.8%	32.8%	33.6%	33.3%	32.9%	33.0%	33.1%	32.8%	32.8%	34.9%	-53%	-64%	73 bps
Utilities, fuels, and public services	6.7%	6.9%	7.0%	7.0%	7.2%	7.4%	7.6%	7.5%	7.1%	7.3%	7.3%	6.9%	6.8%	6.4%	6.6%	6.4%	6.8%	-82%	-20%	-31 bps
Apparel and services	4.2%	4.1%	3.9%	3.8%	3.6%	3.5%	3.5%	3.5%	3.4%	3.1%	3.3%	3.3%	3.1%	3.0%	3.0%	3.0%	2.3%	17%	61%	-120 bps
Transportation	18.0%	18.0%	17.6%	17.7%	17.0%	15.6%	16.0%	16.7%	17.5%	17.6%	17.0%	17.0%	15.8%	15.9%	15.9%	17.0%	16.0%	3%	25%	-94 bps
Gasoline, other fuels, and motor oil	3.7%	4.3%	4.6%	4.8%	5.4%	4.0%	4.4%	5.3%	5.4%	5.1%	4.6%	3.7%	3.3%	3.3%	3.4%	3.3%	2.6%	-69%	19%	-36 bps
Healthcare	5.9%	5.7%	5.7%	5.8%	5.9%	6.4%	6.6%	6.7%	6.9%	7.1%	8.0%	7.8%	8.0%	8.2%	8.1%	8.2%	8.4%	4%	-30%	231 bps
Entertainment	5.1%	5.1%	4.9%	5.4%	5.6%	5.5%	5.2%	5.2%	5.1%	4.9%	5.1%	5.1%	5.1%	5.3%	5.3%	4.9%	4.7%	0%	40%	-21 bps
Personal care products and services	1.3%	1.2%	1.2%	1.2%	1.2%	1.2%	1.2%	1.3%	1.2%	1.2%	1.2%	1.2%	1.2%	1.3%	1.3%	1.2%	1.1%	31%	75%	-9 bps
Reading	0.3%	0.3%	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%	0.1%	0.2%	13%	24%	-15 bps
Education	2.1%	2.0%	1.8%	1.9%	2.1%	2.2%	2.2%	2.1%	2.3%	2.2%	2.3%	2.3%	2.3%	2.5%	2.3%	2.3%	2.1%	-13%	10%	20 bps
Tobacco products and smoking supplies	0.7%	0.7%	0.7%	0.7%	0.6%	0.8%	0.8%	0.7%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.5%	0.5%	-39%	22%	-16 bps
Miscellaneous	1.6%	1.7%	1.7%	1.6%	1.7%	1.7%	1.8%	1.6%	1.6%	1.3%	1.5%	1.6%	1.7%	1.7%	1.6%	1.4%	1.5%	38%	37%	-16 bps
Cash contributions	3.2%	3.6%	3.9%	3.7%	3.4%	3.5%	3.4%	3.5%	3.7%	3.6%	3.3%	3.2%	3.6%	3.1%	3.1%	3.2%	3.7%	-30%	-38%	-8 bps
Personal insurance and pensions	11.1%	11.2%	10.9%	10.8%	11.1%	11.1%	11.2%	10.9%	10.9%	10.8%	10.7%	11.3%	11.9%	11.3%	11.9%	11.4%	11.8%	57%	-15%	25 bps
Total ex-all food	**86.7%**	**87.2%**	**87.4%**	**87.8%**	**87.3%**	**87.0%**	**87.3%**	**87.0%**	**87.2%**	**87.1%**	**87.4%**	**87.5%**	**87.4%**	**87.1%**	**87.1%**	**87.1%**	**88.1%**	**-17%**	**-63%**	**35 bps**
Total ex-food away from home	**94.4%**	**94.3%**	**94.4%**	**94.6%**	**94.7%**	**94.7%**	**94.8%**	**94.7%**	**94.8%**	**94.9%**	**94.8%**	**94.6%**	**94.5%**	**94.4%**	**94.4%**	**94.4%**	**96.1%**	**-100%**	**-100%**	**1 bps**
Energy-related categories	**10.4%**	**11.2%**	**11.6%**	**11.8%**	**12.6%**	**11.5%**	**12.0%**	**12.8%**	**12.5%**	**12.4%**	**11.9%**	**10.7%**	**10.1%**	**9.7%**	**10.1%**	**9.8%**	**9.3%**	**-78%**	**8%**	**-67 bps**

Note: Heat map is in reference to changes across individual category allocation levels between 2004 and 2019.
Source: US Bureau of Labor Statistics, RBC Capital Markets

How Has Food-Away-from-Home Spending Allocation Changed Over Time?

- Across all income cohorts, **food-away-from-home (FAFH) allocation remained remarkably stable between 2004 and 2019** (within a range of 5.1% to 5.7% of total spend)
  - ➢ *Across all major consumer expenditure categories, the change in allocation between 2004 and 2019 for FAFH spend was the smallest*
- During the GFC, FAFH spend declined to approximately 5.3%—and reached as low as 5.1%—before growing back to 5.6% prior to the onset of the pandemic

Consumer Allocation of Food Spend – FAH and FAFH (2004–20)

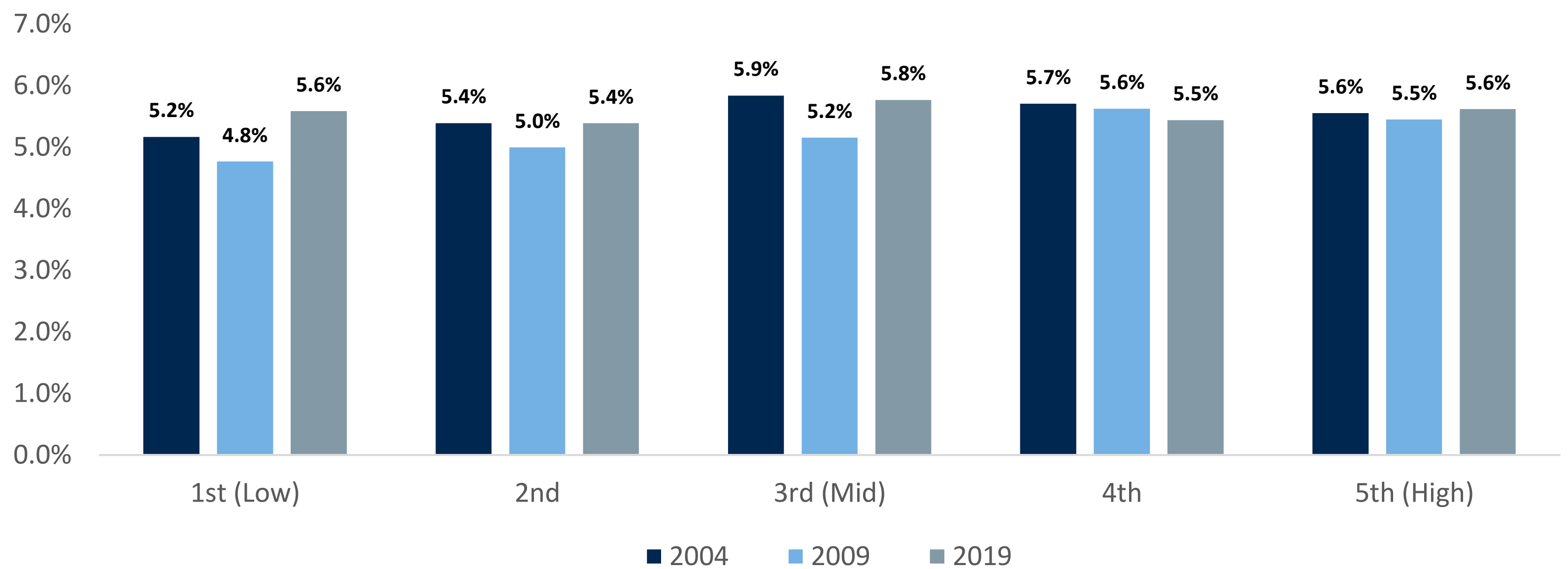


Source: US Bureau of Labor Statistics, RBC Capital Markets

Food-Away-from-Home Spend by Income Level Shows More Variability

- While FAFH spend allocation has remained largely stable on an aggregate basis, we have observed slightly more variability across income levels
- Most noteworthy are trends across the lowest income quintile, which saw allocation to FAFH increase 40 bps over time but also saw allocation decline to below 5% during the GFC; conversely, the highest income quintiles have generally seen much more stable allocation to FAFH, both over time and during recessionary periods

Consumer Allocation of FAH Spend, by Income Quintile

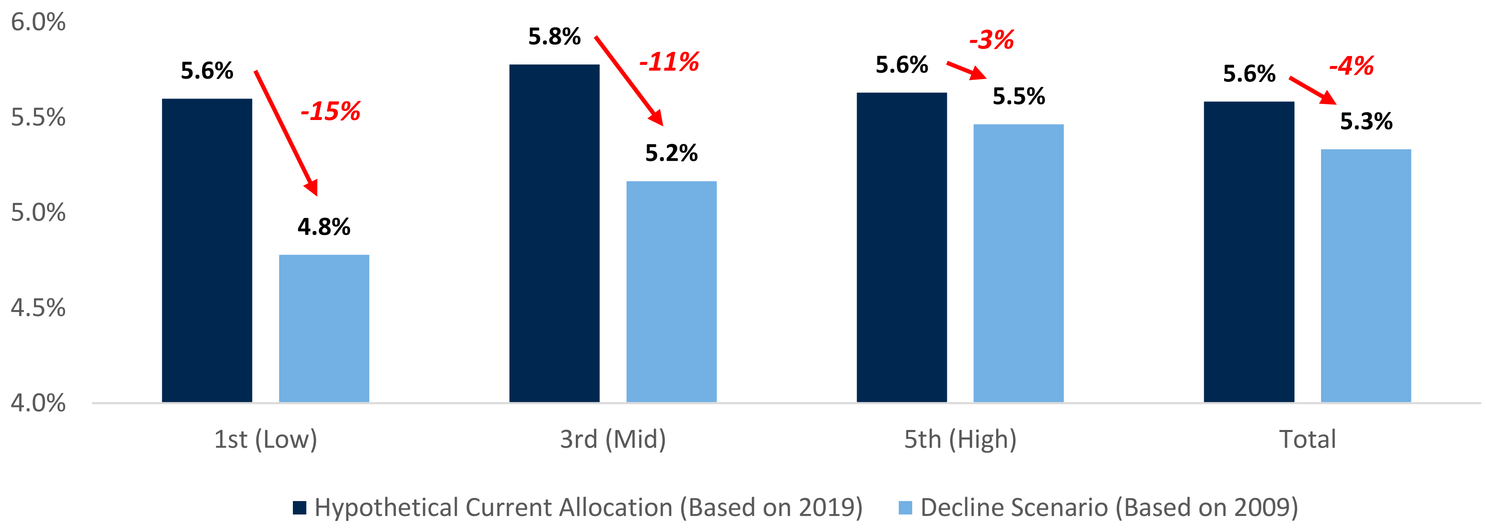


Source: US Bureau of Labor Statistics, RBC Capital Markets

How Much Can Restaurant Spend Theoretically Decline?

- To assess the potential downside to restaurant spending, we assume that consumers' allocation to FAFH spend is near 2019 levels (5.6%) today; however, if allocation to FAFH spend were to shift down to 2009 (recessionary) levels, **this would translate to a ~4% decline in spend**
- For the lowest-income consumer, the drop would be far greater (~15%); however, we estimate that the decline in dollars for this cohort would be roughly ~$125 (on an total annual basis), and that recent savings and/or remaining stimulus dollars may be able to blunt this impact

Theoretical Decline in FAFH Allocation, by Income Level

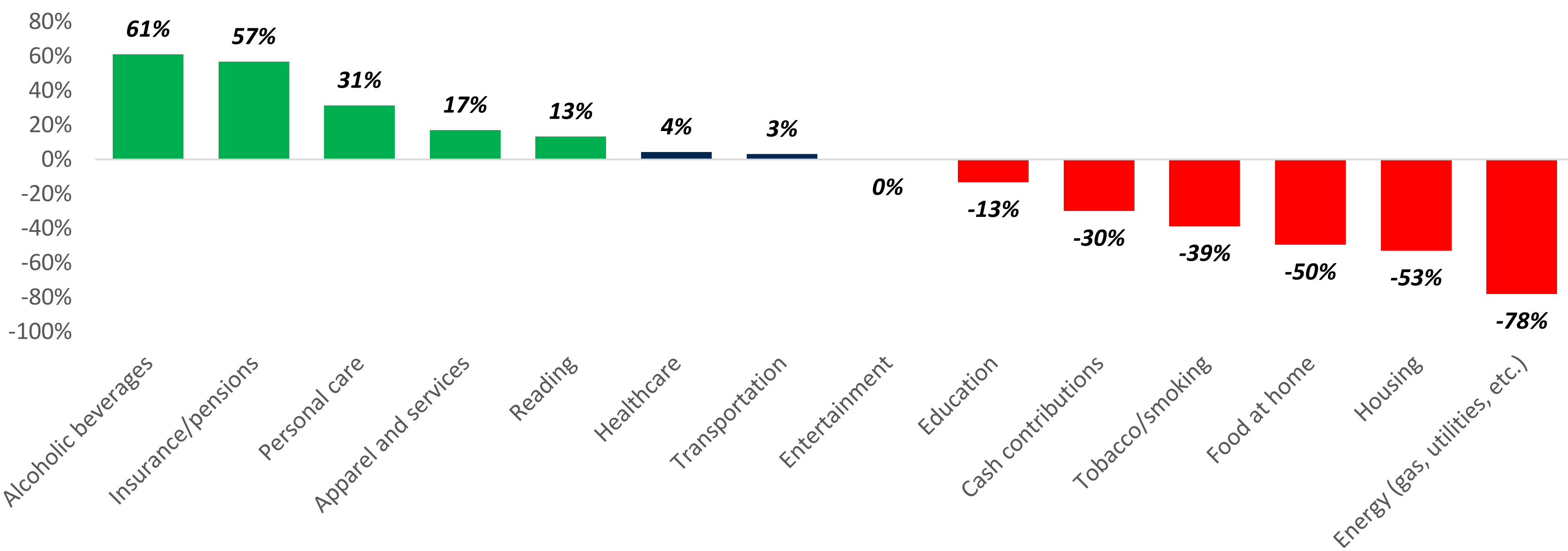


Source: US Bureau of Labor Statistics, RBC Capital Markets

Energy Among Categories with Highest Negative Correlation to FAFH Allocation

- We have observed the highest ***negative correlation*** between food away from home and energy-related categories (auto and home), housing, and food-at-home costs
- Intuitively, this makes sense to us: where there is more inelastic demand for potentially inflationary categories (e.g., gasoline), food away from home—a “discretionary” purchase that is easily, and likely more cheaply, replaced by food at home—will likely see reduced demand

Correlation Between Allocation to FAFH and Other Expenditure Categories (2004–19)

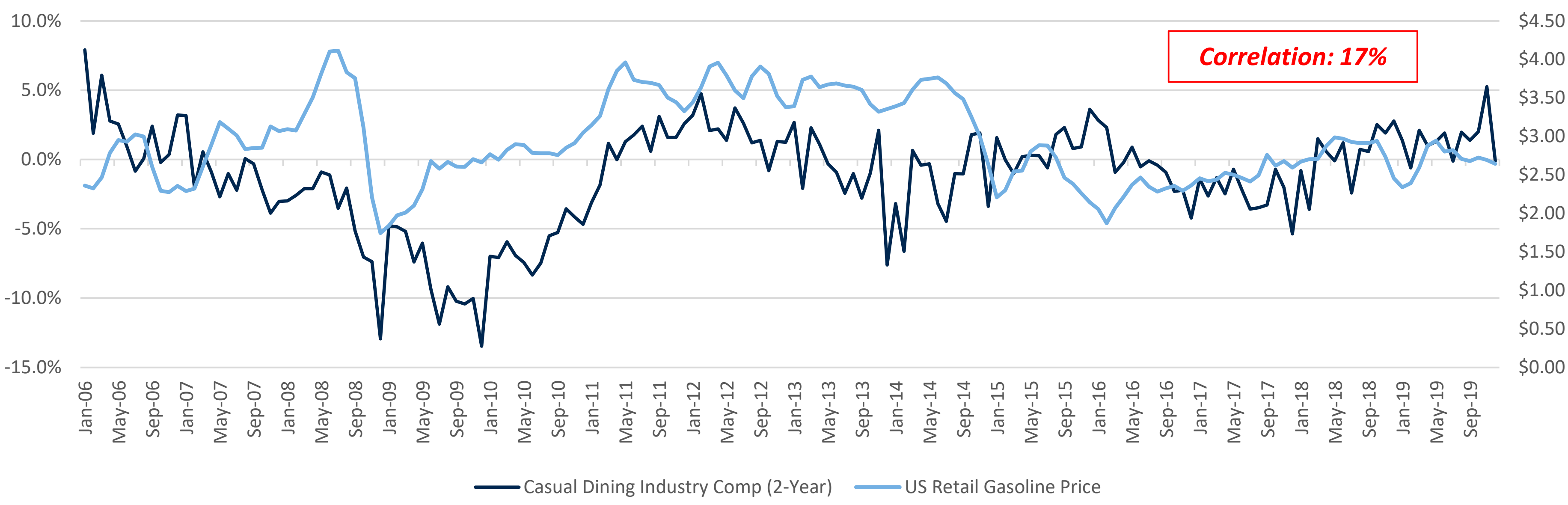


Source: US Bureau of Labor Statistics, RBC Capital Markets

Have Higher Gas Prices Actually Translated to Lower Restaurant Demand?

- As it relates to gasoline prices specifically, we are hard-pressed to find a strong direct negative correlation between casual dining/full-service—the more "discretionary" of restaurant spend—and gas prices
- However, given our work around consumer expenditure allocation, as well as the magnitude of increases in energy prices, we are hesitant to dismiss the potential impact that gas prices may have on discretionary spending

Casual Dining Comp Trends vs. Retail Gasoline Prices



Source: Knapp Track, U.S. Energy Information Administration

Thoughts on the Margin Outlook for 2H22

How Reasonable Are 2H22 Restaurant Margin Estimates Today?

- Given continued upward pressure on food, freight, and labor costs since last year, we have seen restaurant-level margin estimates for 2H22 decline on average by >200 bps
- However, there are margin outliers, including **SG** and **WING**, for which expectations for margin *expansion* are driven by AUV growth (for SG) and easing food costs (chicken wing prices, for WING)

2H22 Consensus Restaurant-Level Margin Estimates – Current vs. Prior Estimates

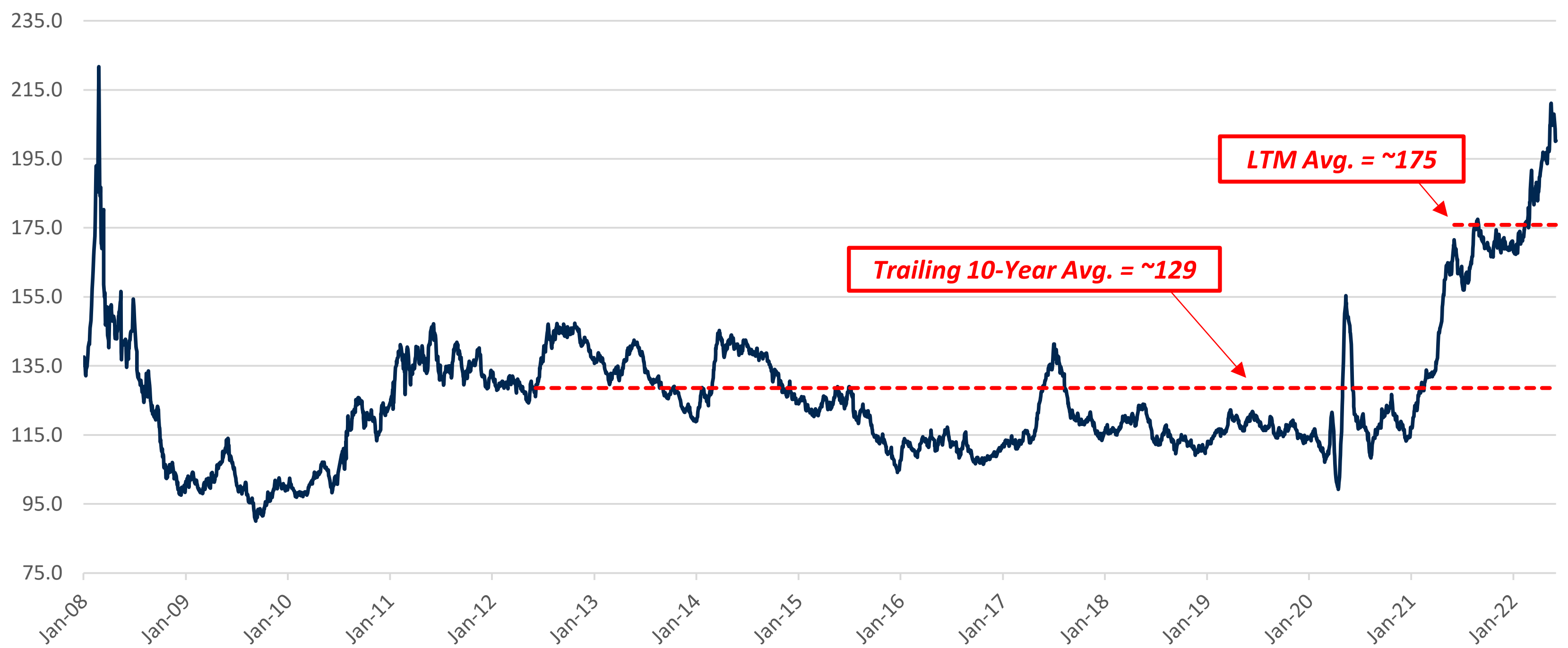
	Restaurant Level Margin			Prior 2H22E Consensus RLM Estimates, as of...			
	2H21A	2H22E (Current Consensus)	Y/Y Change	6/30/21	vs. Current	12/31/21	vs. Current
JACK	19.2%	17.1%	-205 bps	24.8%	-769 bps	21.2%	-406 bps
MCD	18.1%	16.4%	-164 bps	18.4%	-197 bps	18.4%	-197 bps
DRI	19.9%	19.3%	-58 bps	19.8%	-49 bps	19.9%	-63 bps
YUM	17.5%	17.5%	1 bps	19.4%	-186 bps	18.7%	-122 bps
TXRH	15.7%	16.1%	31 bps	17.3%	-124 bps	16.5%	-41 bps
EAT	10.7%	11.2%	47 bps	14.0%	-281 bps	11.8%	-69 bps
WEN	14.5%	15.5%	108 bps	16.9%	-141 bps	15.5%	1 bps
CMG	21.9%	23.9%	203 bps	25.1%	-118 bps	24.5%	-65 bps
SG	13.3%	17.8%	453 bps				
WING	13.1%	24.4%	1127 bps	26.0%	-165 bps	23.0%	140 bps
Average			***154 bps***		***-225 bps***		***-91 bps***

Source: Consensus Metrix, Company reports

Food Costs Have Spiked to Levels Not Seen in More Than a Decade

- ArrowStream's Restaurant Commodity Index has recently risen above 200, and while this has moderated somewhat, the index is at its highest levels in more than a decade and remains well above the trailing 12-month average of ~175

ArrowStream Restaurant Commodity Index (Indexed to 2010)



Source: ArrowStream

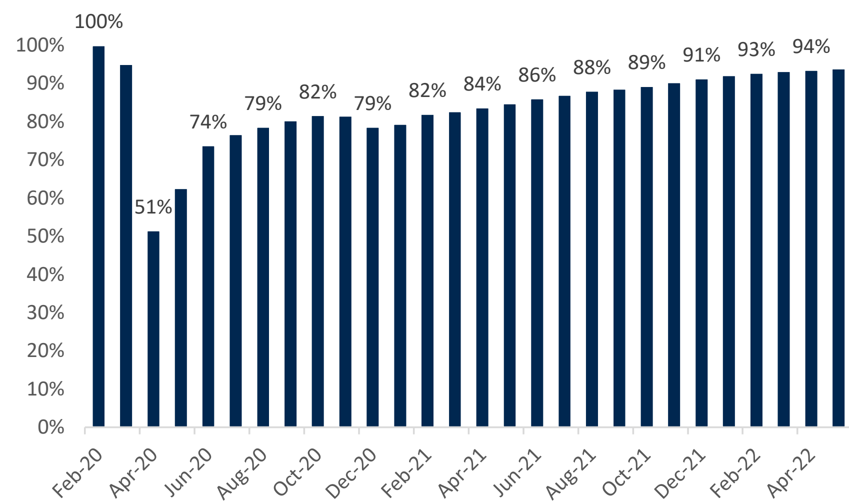
Commodity Outlooks Post 1Q Earnings Reflect Greater Cost Pressures

- Companies' updated commodity outlooks reflect greater caution on post-1Q results:
  - **Darden's** (**DRI**) guidance for FY22 (ending May) points to ~+9% commodity inflation (previously +7–8%; last updated in March); meanwhile, **Brinker** (**EAT**) expects inflation in the 11% range for 4FQ (previously +HSD for the 2H of its FY22 ending June)
  - **McDonald**'s (**MCD**) food and paper costs are expected to increase +12–14% (previously ~+8%) in the US in 2022 and +12–14% (previously ~+6%) in its IOM markets; meanwhile, **Wendy's** (**WEN**) anticipates 2022 commodity inflation in the +mid-teens (previously +HSD%)
  - **Jack In the Box** (**JACK**) expects commodity inflation of +12–14% (previously +6–7%) for the full fiscal year 2022
  - **Domino's (DPZ**) food basket inflation guidance for 2022 is +10–12% (previously +8–10%)
  - **Sweetgreen (SG)** expects costs and inflationary pressures to increase throughout the remainder of 2022 (previously commodity inflation outlook of ~+6%; last updated in March)
- And as it relates to contracting, our coverage has noted the following:
  - **Texas Roadhouse** (**TXRH**) has "over 70% of our commodity basket secured for Q2 and approximately 20% locked for the back half of the year."
  - **Darden** (**DRI**) noted in March regarding its FY23 DRI that "compared to historical situation[s], we're probably less contracted and we're working through those over the next few months, and we'll have more to share in June. But the forward premiums are too high to contract that far out."
  - **Sweetgreen (SG)** noted that "about 88% of our food is under contract where we have long-term relationships with our suppliers and farmers, many of which have held to those contract pricing during the first quarter."

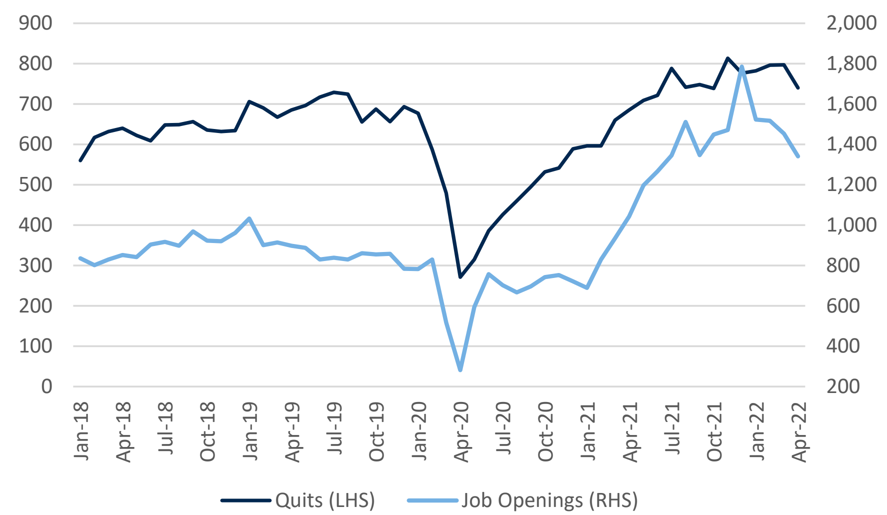
In Line with Recent Commentary, Data Points on Staffing Appear Encouraging

- Recent commentary from our restaurants coverage suggests that staffing levels have improved; BLS restaurant staffing data has also shown steady M/M improvement, with staffing reaching ~94% of pre-pandemic levels; *note that we expect overall staffing may remain below pre-pandemic levels given net restaurant closures since 2019*
- However, there remain pockets of labor/staffing challenges, including delivery driver staffing (noted by **DPZ** and **YUM**), as well as late night and fast food dining room staffing (noted by **JACK**)

All Employees, Food Services and Drinking Places as a Percentage of February 2020 Levels



Quits and Job Openings, Accommodation and Food Services (Level in Thousands, Monthly, Seasonally Adjusted)

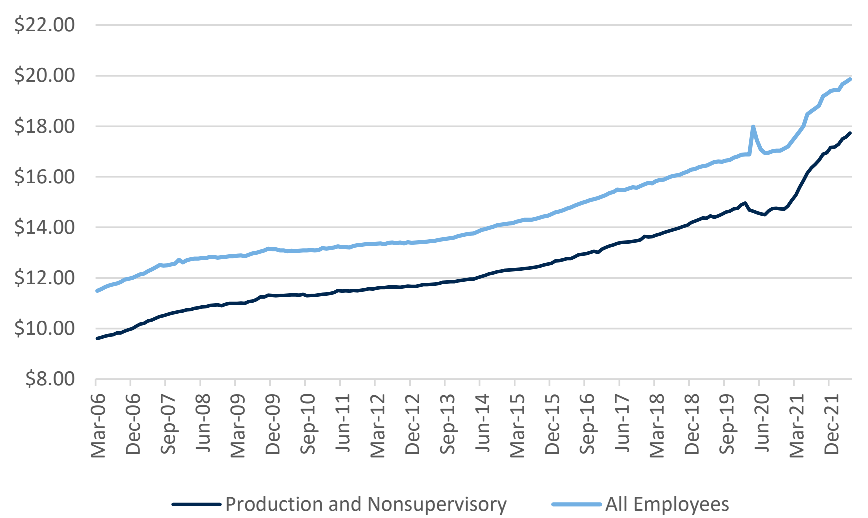


Source: U.S. Bureau of Labor Statistics, Federal Reserve Bank of St. Louis

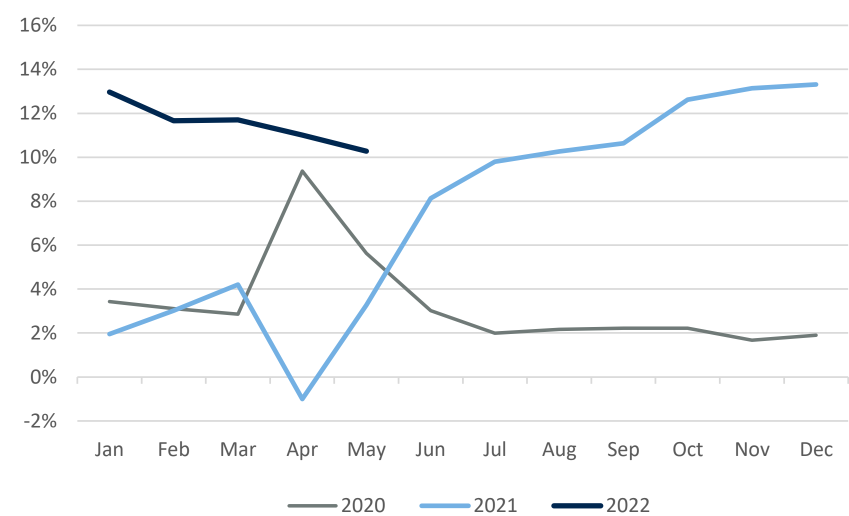
While Wages Remain Elevated, Y/Y Comparison Has Shown Some Easing

- While staffing levels overall have continued to improve, there remains upward pressure on wages, with leisure and hospitality hourly wages approaching $18; however, we point out that Y/Y growth in wages has begun to moderate since the beginning of the year
- Additionally, with potentially moderating turnover—supported by lower quits/job postings data, as shown on the prior page—we see potential for relief around hiring and training costs

Average Hourly Earnings, Leisure and Hospitality (Dollars per Hour, Monthly, Seasonally Adjusted)



Y/Y Change in Average Hourly Earnings, Leisure and Hospitality (Seasonally Adjusted)



Source: U.S. Bureau of Labor Statistics, Federal Reserve Bank of St. Louis

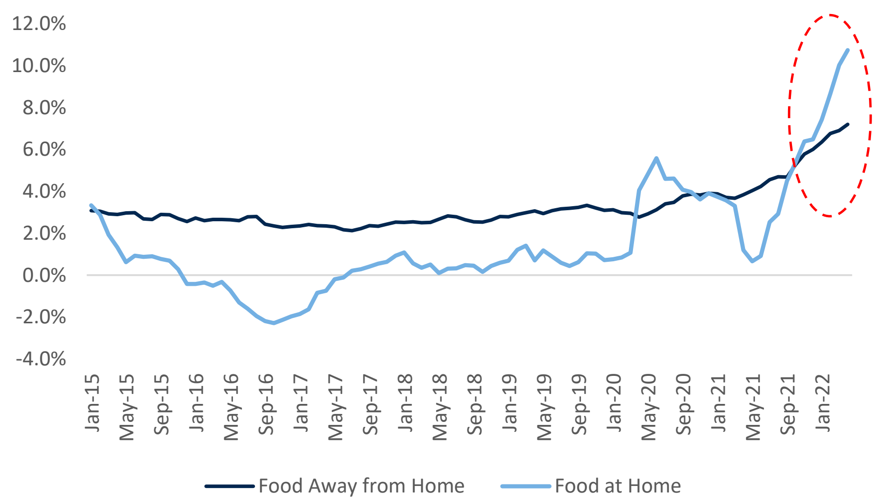
Restaurants Have Relied on Pricing Actions to Help Offset Margin Pressures…

- To combat rising inflationary pressures, companies are continuing to leverage incremental menu price increases:
  - **Texas Roadhouse** (**TXRH**) expects quarterly pricing—assuming no further pricing actions—for 2Q through 4Q to be +7.5%, +7.4% and +4.1%, respectively
  - **Darden** (**DRI**) anticipates pricing to be just over +3% for FY22; meanwhile, **Brinker (EAT)** raised menu prices for both Chili's and Maggiano's during its 3FQ, entering 4FQ at +4.6% and +5.1%, respectively, with expectations for Chili's to be near +6% by June
  - **Chipotle** (**CMG**) increased menu prices by more than +4% at the end of 1Q and anticipates that quarterly pricing for 2Q through 4Q will be approximately +12.5%, +10%, and +8.5%, respectively
  - **Jack In the Box (JACK)** expects +HSD pricing for FY22, while **Wendy's** (**WEN**) anticipates +MSD–HSD pricing for the full year 2022
  - **McDonald's** (**MCD**) saw 1Q company-owned store pricing of ~+8% in the US (vs. >+6% in 2021)
  - **Starbucks** (**SBUX**) noted that it accelerated price increases over the course of 2FQ to offset further cost and margin pressures
  - *Various fast food operators have also noted pricing near or in line with inflation/CPI*

…but Do Restaurants Have Further Pricing Power?

- Current Y/Y FAFH inflation levels (>+7%) are well above the recent historical average (~+3%)
- Given the spread between FAFH and FAH inflation, more than 300 bps as of April, we see potential for restaurants to push through incremental pricing should costs increase further, though we expect this to be done with greater caution given the fragility of the macro environment

FAFH vs. FAH Inflation (Y/Y)



Source: Federal Reserve Economic Data

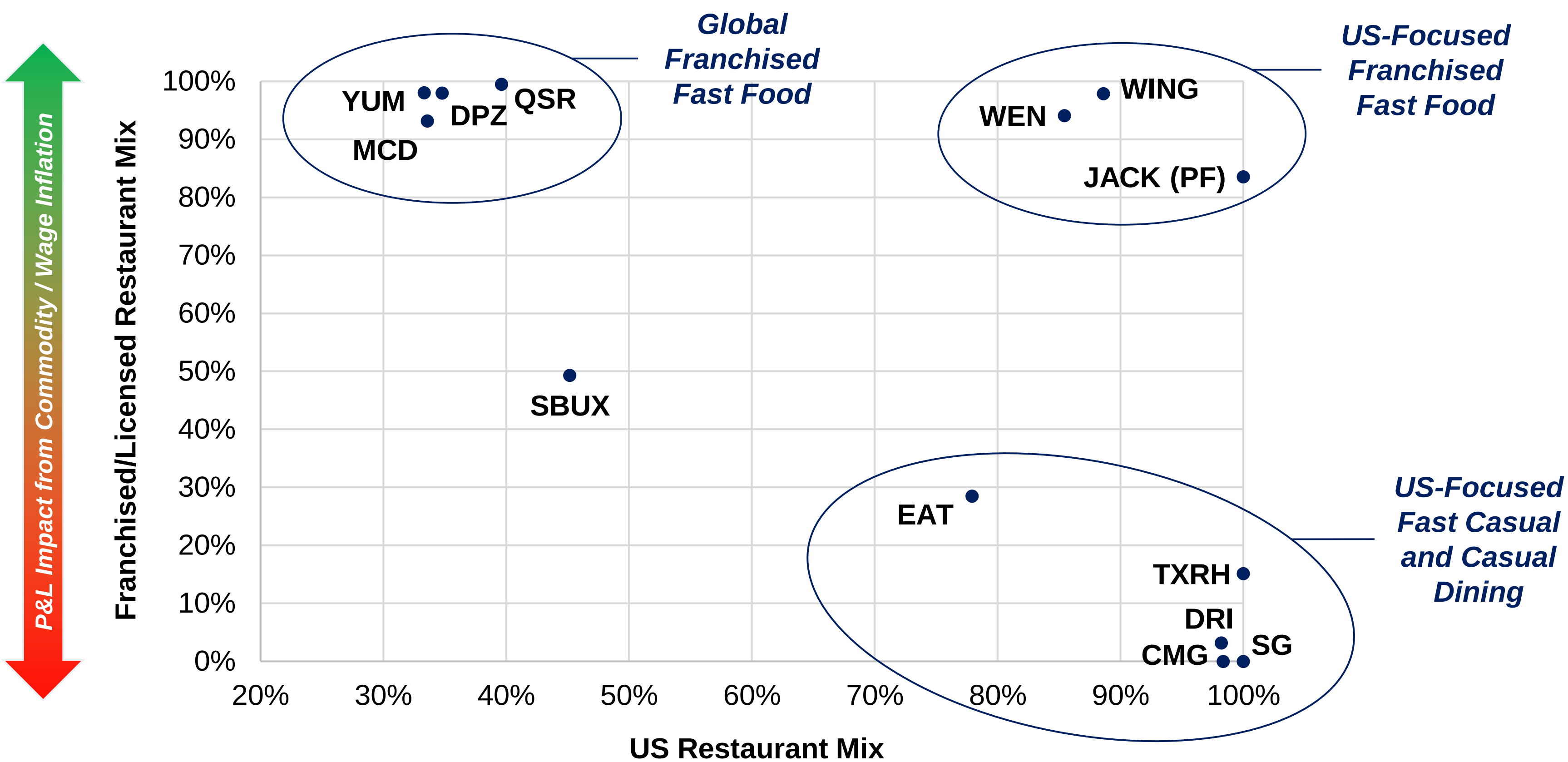
FAFH Premium/Discount vs. FAH

Source: Federal Reserve Economic Data

How Should We Approach Restaurant Stocks Today?

What Is the Near-Term Playbook for Restaurants?

- In the very near term, we continue to view highly franchised fast food models as best-positioned to weather current uncertainty given focus on value (including some offsetting benefit from trade-down); we still see opportunities in fast casual and casual dining, though we expect near-term volatility for those groups until we have greater clarity around cost/margin implications



Source: RBC Capital Markets, Company reports

Capital Markets

Restaurant Stock Performance

- Overall RBC Restaurants coverage has continued to underperform the broader market so far in 2022 (-18% vs. S&P 500 -16%)

RBC Restaurants Stock Performance

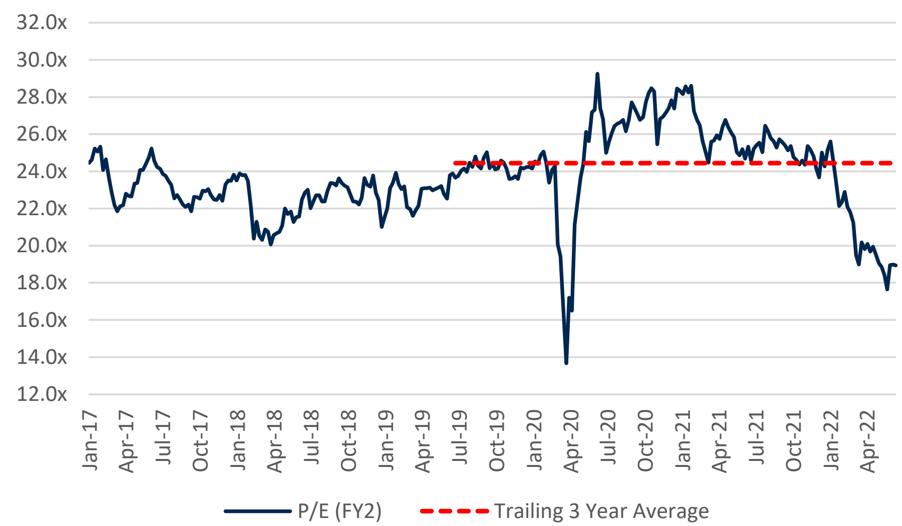
	2016	2017	2018	2019	2020	2021	2022 YTD
CMG	-21%	-23%	49%	94%	66%	**26%**	**-22%**
SBUX	-8%	3%	12%	37%	22%	**9%**	**-33%**
SG						**14%**	**-43%**
Fast Casual	**-9%**	**1%**	**17%**	**47%**	**32%**	**14%**	**-29%**
DPZ	43%	19%	31%	18%	31%	**47%**	**-32%**
JACK	46%	-12%	-21%	1%	19%	**-6%**	**-18%**
MCD	3%	41%	3%	11%	9%	**25%**	**-10%**
QSR	28%	29%	-15%	22%	-4%	**-1%**	**-15%**
WEN	26%	21%	-5%	42%	-1%	**9%**	**-22%**
WING	30%	32%	65%	34%	54%	**30%**	**-53%**
YUM	21%	29%	13%	10%	8%	**28%**	**-16%**
Franchised Fast Food	**12%**	**36%**	**4%**	**14%**	**9%**	**24%**	**-13%**
DRI	14%	32%	4%	9%	9%	**26%**	**-18%**
EAT	3%	-22%	13%	-5%	35%	**-35%**	**-19%**
TXRH	35%	9%	13%	-6%	39%	**14%**	**-10%**
Casual Dining	**17%**	**22%**	**7%**	**5%**	**19%**	**20%**	**-16%**
RBC Restaurants Avg.	**5%**	**25%**	**8%**	**25%**	**18%**	**20%**	**-18%**
S&P 500	10%	19%	-6%	29%	16%	**27%**	**-16%**
vs. S&P 500	***-4%***	***6%***	***14%***	***-4%***	***2%***	***-7%***	***-3%***

Note: "RBC Restaurants Avg." is market cap-weighted; heat map indicates relative performance by year.
Source: FactSet, Company reports

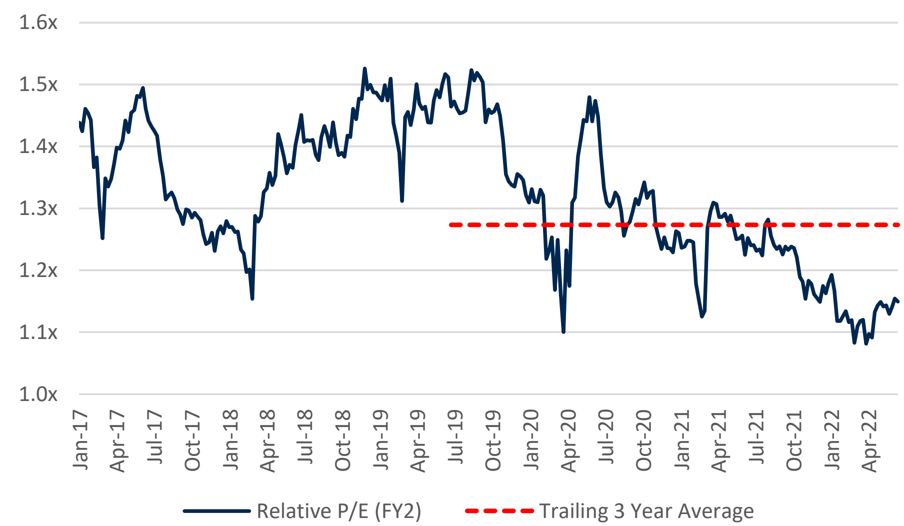
RBC Restaurants Valuation Snapshot

- Valuation for our overall RBC Restaurants coverage is now well below the recent historical average (~24x FY2 P/E)…
- …while valuation relative to the broader market (i.e., P/E vs. S&P 500) also remains under pressure

RBC Restaurants P/E (FY2)



RBC Restaurants Relative P/E (vs. S&P 500, FY2)

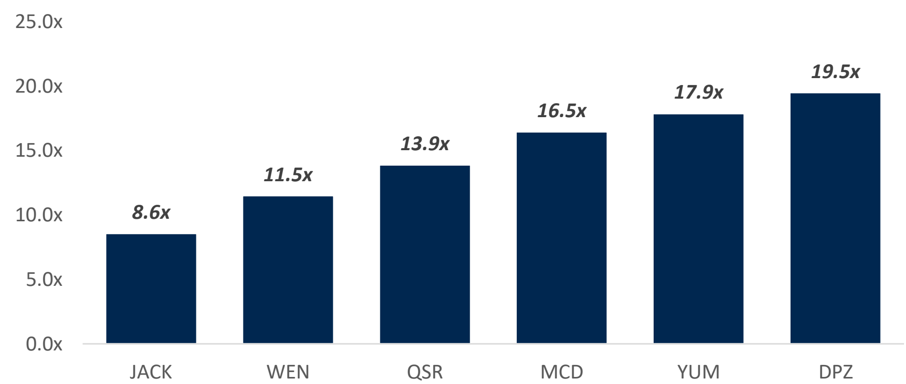


Note: "RBC Restaurants" excludes WING and SG.
Source: FactSet

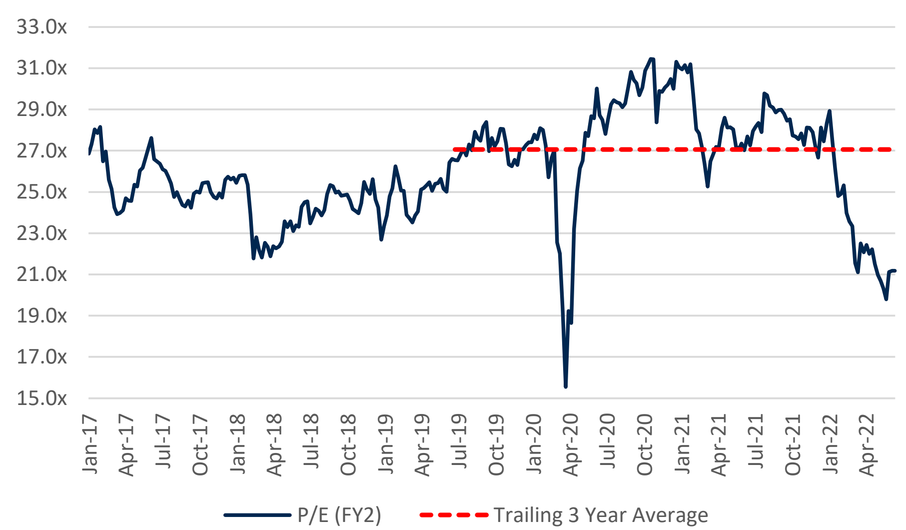
RBC Restaurants Valuation Snapshot: Fast Food

- On average, our overall fast food coverage is currently trading well below its trailing three-year valuation averages (~17x FY2 EBITDA; ~21x FY2 EPS)
- Across the highly franchised fast food business models, valuation gaps have narrowed, with DPZ trading at a lower premium relative to peers

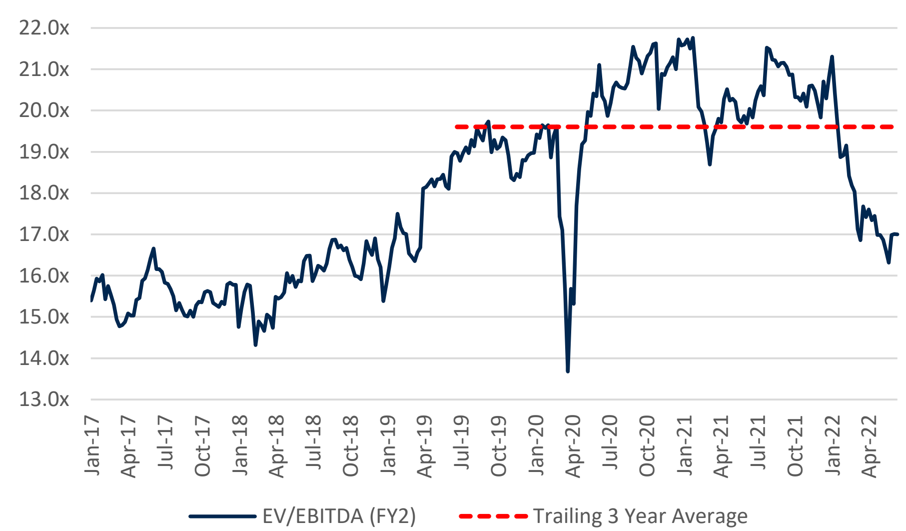
Highly Franchised Fast Food EV/EBITDA (CY23E)



RBC Fast Food Restaurants P/E (FY2)



RBC Fast Food Restaurants EV/EBITDA (FY2)

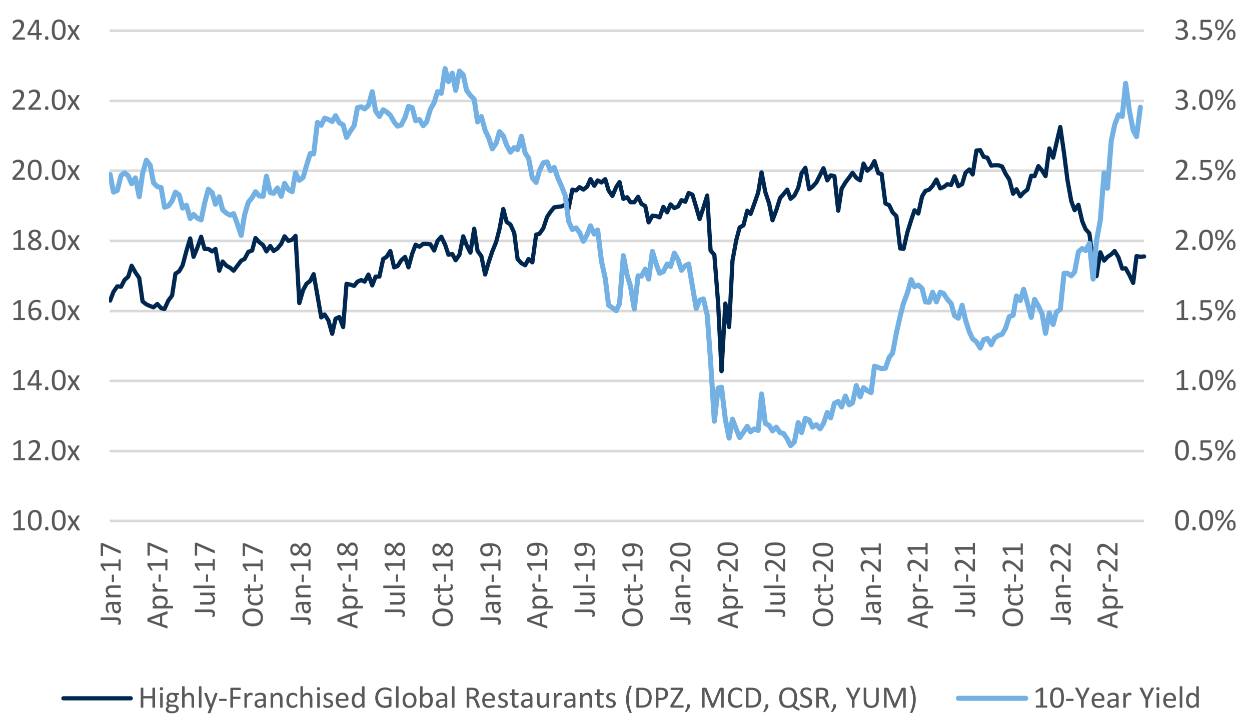


Note: "RBC Restaurants" excludes WING and SG.
Source: FactSet

How Will Rising Rates Impact Restaurant Valuations?

- There continues to be a strong negative correlation between valuations of highly franchised global fast food names (i.e., **DPZ**, **MCD**, **QSR**, and **YUM**) and the 10-year yield
  - *Correlation = -62% (since 2017)*

Highly Franchised Global Restaurants vs. 10-Year Treasury Yield

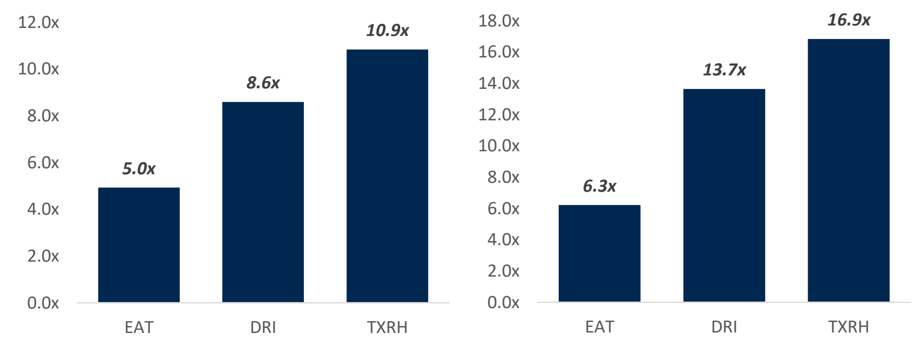


Source: FactSet

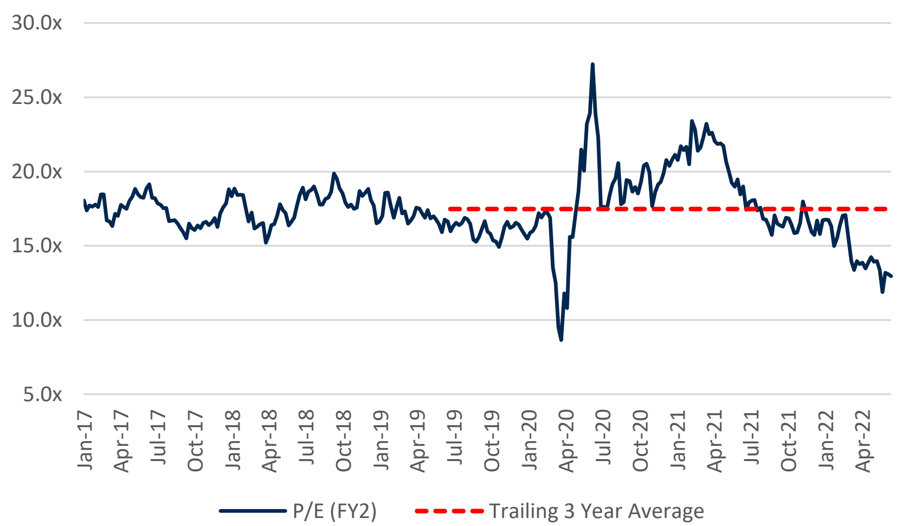
RBC Restaurants Valuation Snapshot: Casual Dining

- Similar to our fast food coverage, our casual dining coverage is currently trading well below its trailing three-year valuation averages (~11x FY2 EBITDA; ~13x FY2 EPS)
- We do continue to see wider valuation gaps across the casual dining peer group

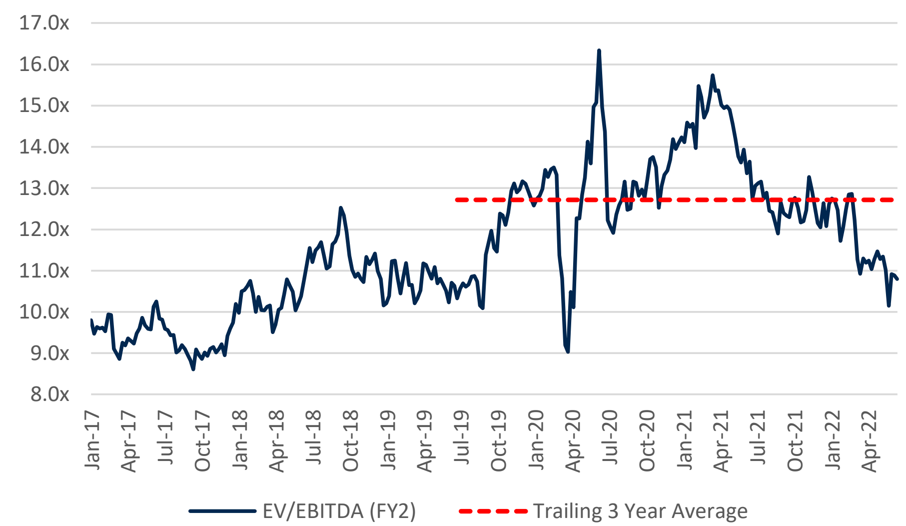
Casual Dining EV/EBITDA (CY23E, LHS) and P/E (CY23E, RHS)



RBC Casual Dining Restaurants P/E (FY2)



RBC Casual Dining Restaurants EV/EBITDA (FY2)



Note: "RBC Restaurants" excludes WING and SG
Source: FactSet

Appendix

Allocation of Consumer Expenditures, by Category (2004–20)

First Income Quintile (Lowest Income)

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	FAFH Correlation '04-'19	FAFH Correlation '04-'20	Delta '19 vs. '04
Food	16.7%	16.0%	15.6%	15.3%	15.6%	16.2%	15.7%	16.1%	15.7%	16.4%	15.4%	15.4%	15.3%	15.6%	15.6%	15.4%	14.3%			-127 bps
Food at home	11.4%	10.3%	10.5%	10.3%	10.6%	11.4%	10.8%	11.1%	10.8%	11.2%	10.6%	10.2%	10.0%	9.9%	10.2%	9.7%	10.8%	-68%	-45%	-171 bps
Food away from home	**5.2%**	**5.6%**	**5.2%**	**5.0%**	**5.0%**	**4.8%**	**4.9%**	**5.0%**	**4.9%**	**5.1%**	**4.9%**	**5.2%**	**5.4%**	**5.7%**	**5.3%**	**5.6%**	**3.5%**			**42 bps**
Alcoholic beverages	1.1%	0.9%	1.0%	0.9%	0.8%	0.8%	0.7%	0.8%	0.7%	0.7%	0.8%	0.8%	0.6%	0.6%	0.6%	0.7%	0.5%	-14%	29%	-35 bps
Housing	37.9%	39.3%	39.8%	40.3%	39.9%	41.4%	41.4%	39.8%	39.9%	39.9%	40.7%	40.3%	41.0%	40.1%	39.9%	40.1%	42.8%	-29%	-65%	224 bps
Utilities, fuels, and public services	9.6%	10.0%	10.3%	10.1%	10.1%	10.4%	10.5%	10.4%	9.9%	9.8%	10.1%	9.5%	9.2%	9.0%	9.1%	8.7%	9.6%	-76%	-35%	-89 bps
Apparel and services	4.7%	4.5%	4.1%	3.7%	4.3%	4.0%	3.7%	3.9%	3.4%	3.2%	3.3%	3.2%	3.4%	3.4%	2.8%	2.9%	2.6%	-19%	25%	-182 bps
Transportation	14.7%	14.4%	14.8%	15.8%	15.4%	13.3%	13.7%	14.7%	15.6%	14.9%	15.0%	14.6%	14.9%	13.4%	14.0%	16.0%	15.2%	-6%	-16%	130 bps
Gasoline, other fuels, and motor oil	4.1%	4.6%	4.9%	5.1%	5.5%	4.3%	4.8%	5.6%	5.5%	5.5%	4.9%	3.9%	3.6%	3.5%	3.8%	3.5%	2.8%	-68%	8%	-60 bps
Healthcare	7.9%	7.6%	7.3%	7.1%	7.3%	7.5%	7.3%	6.8%	7.5%	8.0%	7.9%	7.9%	8.5%	9.6%	9.4%	10.0%	9.6%	73%	3%	204 bps
Entertainment	4.3%	4.7%	4.3%	4.5%	4.8%	4.7%	4.8%	4.5%	4.5%	4.5%	4.7%	5.2%	4.6%	4.9%	5.2%	3.9%	4.2%	-10%	23%	-41 bps
Personal care products and services	1.5%	1.3%	1.3%	1.2%	1.4%	1.2%	1.3%	1.2%	1.1%	1.2%	1.3%	1.3%	1.3%	1.4%	1.3%	1.3%	1.0%	44%	67%	-25 bps
Reading	0.3%	0.3%	0.3%	0.3%	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%	0.1%	0.3%	0.2%	0.3%	0.2%	0.2%	9%	0%	-10 bps
Education	3.6%	2.8%	2.5%	3.0%	2.8%	2.6%	3.0%	3.7%	2.8%	3.7%	3.9%	2.8%	2.7%	3.0%	2.9%	2.7%	2.2%	-26%	23%	-93 bps
Tobacco products and smoking supplies	1.2%	1.4%	1.3%	1.3%	1.2%	1.4%	1.5%	1.4%	1.4%	1.3%	1.2%	1.3%	1.2%	1.1%	1.2%	1.0%	1.0%	-57%	12%	-16 bps
Miscellaneous	1.7%	1.6%	2.2%	1.5%	1.3%	1.5%	1.7%	1.7%	1.7%	1.3%	1.5%	1.8%	1.3%	1.7%	1.6%	1.4%	1.5%	2%	16%	-31 bps
Cash contributions	1.9%	2.8%	2.8%	2.7%	2.5%	2.6%	2.6%	3.1%	3.1%	2.6%	2.2%	2.9%	2.2%	2.5%	2.4%	2.3%	2.6%	-25%	-16%	33 bps
Personal insurance and pensions	2.4%	2.5%	2.6%	2.6%	2.4%	2.5%	2.2%	2.0%	2.3%	2.1%	2.1%	2.5%	2.6%	2.5%	2.8%	2.1%	2.1%	23%	33%	-31 bps
Total ex-all food	**83.3%**	**84.0%**	**84.4%**	**84.7%**	**84.4%**	**83.8%**	**84.3%**	**83.9%**	**84.3%**	**83.6%**	**84.6%**	**84.6%**	**84.7%**	**84.4%**	**84.4%**	**84.6%**	**85.7%**	**18%**	**-48%**	**127 bps**
Total ex-food away from home	**94.8%**	**94.4%**	**94.9%**	**95.0%**	**95.0%**	**95.2%**	**95.0%**	**94.9%**	**95.1%**	**94.8%**	**95.1%**	**94.8%**	**94.7%**	**94.3%**	**94.6%**	**94.3%**	**96.5%**	**-99%**	**-100%**	**-43 bps**
Energy-related categories	**13.7%**	**14.6%**	**15.1%**	**15.2%**	**15.6%**	**14.6%**	**15.4%**	**15.9%**	**15.4%**	**15.3%**	**15.0%**	**13.4%**	**12.8%**	**12.5%**	**12.9%**	**12.2%**	**12.5%**	**-76%**	**-9%**	**-149 bps**

Note: Heat map is in reference to changes across individual category allocation levels between 2004 and 2019.
Source: US Bureau of Labor Statistics, RBC Capital Markets

Allocation of Consumer Expenditures, by Category (2004–20)

Second Income Quintile

																		FAFH Correlation		Delta
	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	'04-'19	'04-'20	'19 vs. '04
Food	15.0%	14.0%	14.2%	13.6%	14.4%	14.5%	13.8%	14.5%	13.8%	14.7%	14.2%	14.3%	13.5%	14.4%	14.6%	14.4%	13.5%			-61 bps
Food at home	9.7%	8.7%	8.7%	8.4%	9.2%	9.6%	9.2%	9.5%	9.2%	9.9%	9.4%	9.3%	8.4%	9.2%	9.0%	9.1%	9.6%	-19%	-30%	-62 bps
Food away from home	**5.4%**	**5.3%**	**5.5%**	**4.9%**	**5.1%**	**5.0%**	**4.6%**	**5.0%**	**4.7%**	**4.8%**	**4.8%**	**5.0%**	**5.0%**	**5.2%**	**5.5%**	**5.4%**	**4.0%**			**0 bps**
Alcoholic beverages	1.0%	0.9%	1.0%	0.9%	0.9%	0.8%	0.7%	0.8%	0.8%	0.8%	0.6%	0.7%	0.7%	0.8%	0.8%	0.8%	0.6%	52%	68%	-15 bps
Housing	34.8%	35.2%	36.3%	36.6%	36.5%	37.7%	37.6%	37.8%	37.6%	36.8%	37.2%	36.6%	36.9%	35.9%	35.7%	36.6%	39.5%	-73%	-84%	182 bps
Utilities, fuels, and public services	8.7%	9.2%	9.2%	9.1%	9.5%	9.8%	10.1%	9.6%	9.1%	9.3%	9.7%	9.2%	8.7%	8.2%	8.5%	8.4%	8.7%	-61%	-27%	-22 bps
Apparel and services	3.9%	4.1%	3.9%	3.3%	3.6%	3.7%	3.8%	3.6%	3.5%	3.2%	3.4%	3.2%	3.2%	3.2%	3.2%	3.1%	2.2%	14%	57%	-80 bps
Transportation	18.2%	18.5%	17.5%	18.4%	17.8%	16.1%	16.6%	16.1%	16.7%	18.0%	16.9%	16.9%	16.3%	16.7%	17.0%	17.7%	15.7%	31%	50%	-53 bps
Gasoline, other fuels, and motor oil	4.2%	5.2%	5.4%	5.7%	6.4%	4.8%	5.3%	6.2%	6.2%	5.7%	5.5%	4.4%	3.8%	3.8%	3.9%	4.0%	3.1%	-51%	0%	-26 bps
Healthcare	7.8%	8.1%	8.1%	7.9%	7.8%	7.9%	8.7%	8.1%	8.6%	8.8%	9.7%	9.8%	9.6%	9.9%	10.0%	9.8%	10.4%	6%	-25%	198 bps
Entertainment	5.0%	4.6%	4.2%	4.8%	5.4%	5.3%	4.8%	5.1%	4.9%	4.3%	4.7%	5.0%	4.9%	4.8%	5.5%	4.5%	4.8%	6%	10%	-47 bps
Personal care products and services	1.5%	1.2%	1.3%	1.2%	1.3%	1.3%	1.3%	1.3%	1.3%	1.3%	1.3%	1.3%	1.3%	1.3%	1.3%	1.4%	1.1%	38%	60%	-10 bps
Reading	0.3%	0.3%	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%	21%	20%	-15 bps
Education	1.1%	1.1%	1.0%	1.1%	1.1%	1.2%	1.3%	1.5%	1.3%	1.4%	1.2%	1.4%	2.1%	1.1%	1.0%	1.2%	0.9%	-41%	-6%	8 bps
Tobacco products and smoking supplies	1.0%	1.2%	1.1%	1.1%	1.0%	1.3%	1.2%	1.1%	1.0%	1.0%	1.0%	1.0%	0.9%	0.9%	0.9%	0.8%	0.9%	-31%	-3%	-24 bps
Miscellaneous	1.8%	1.7%	1.7%	1.8%	1.6%	1.7%	1.5%	1.8%	1.9%	1.2%	1.4%	1.6%	1.8%	1.7%	1.9%	1.7%	1.6%	39%	36%	-8 bps
Cash contributions	2.9%	3.5%	3.7%	2.9%	2.9%	2.8%	3.2%	2.9%	3.4%	3.2%	3.4%	3.0%	3.9%	3.0%	2.8%	2.9%	3.4%	-15%	-25%	-1 bps
Personal insurance and pensions	5.7%	5.7%	5.8%	6.2%	5.6%	5.4%	5.1%	5.3%	5.0%	5.1%	4.8%	5.0%	4.8%	6.1%	5.1%	5.0%	5.3%	30%	25%	-75 bps
Total ex-all food	**85.0%**	**86.0%**	**85.8%**	**86.4%**	**85.6%**	**85.5%**	**86.2%**	**85.5%**	**86.2%**	**85.3%**	**85.8%**	**85.7%**	**86.5%**	**85.6%**	**85.4%**	**85.6%**	**86.5%**	**-46%**	**-59%**	**61 bps**
Total ex-food away from home	**94.6%**	**94.7%**	**94.5%**	**94.7%**	**94.8%**	**95.0%**	**95.4%**	**95.0%**	**95.3%**	**95.2%**	**95.1%**	**95.0%**	**95.0%**	**94.8%**	**94.5%**	**94.6%**	**96.0%**	**-94%**	**-97%**	**-1 bps**
Energy-related categories	**12.9%**	**14.4%**	**14.6%**	**14.7%**	**15.9%**	**14.6%**	**15.3%**	**15.8%**	**15.3%**	**15.0%**	**15.2%**	**13.5%**	**12.6%**	**12.0%**	**12.5%**	**12.4%**	**11.8%**	**-59%**	**-10%**	**-48 bps**

Note: Heat map is in reference to changes across individual category allocation levels between 2004 and 2019
Source: US Bureau of Labor Statistics, RBC Capital Markets

Allocation of Consumer Expenditures, by Category (2004–20)

Third Income Quintile (Middle Income)

																		FAFH Correlation		Delta
	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	'04-'19	'04-'20	'19 vs. '04
Food	14.5%	13.5%	13.5%	13.1%	13.1%	13.3%	13.6%	13.2%	13.5%	13.5%	13.1%	12.6%	13.1%	14.0%	13.5%	14.1%	12.2%			-45 bps
Food at home	8.7%	7.7%	7.7%	7.5%	8.0%	8.1%	8.3%	8.2%	8.4%	8.5%	8.1%	7.5%	7.8%	8.0%	7.9%	8.3%	8.2%	-15%	-18%	-42 bps
Food away from home	**5.9%**	**5.8%**	**5.8%**	**5.6%**	**5.1%**	**5.2%**	**5.3%**	**5.0%**	**5.0%**	**5.0%**	**5.1%**	**5.1%**	**5.3%**	**6.0%**	**5.6%**	**5.8%**	**4.0%**			**-7 bps**
Alcoholic beverages	1.1%	0.9%	1.1%	1.0%	0.8%	0.8%	0.9%	0.8%	0.8%	0.8%	0.8%	0.8%	0.7%	0.8%	0.9%	0.8%	0.7%	60%	63%	-28 bps
Housing	32.8%	33.8%	34.3%	34.0%	35.0%	36.0%	35.2%	35.3%	34.4%	34.8%	34.1%	34.5%	34.3%	34.7%	34.5%	34.2%	35.9%	-54%	-65%	136 bps
Utilities, fuels, and public services	7.8%	7.9%	8.0%	7.9%	8.4%	8.7%	8.8%	8.7%	8.3%	8.5%	8.4%	8.2%	8.0%	7.4%	7.7%	7.3%	7.8%	-84%	-47%	-42 bps
Apparel and services	4.0%	3.9%	4.0%	3.9%	3.2%	3.4%	3.3%	3.4%	3.0%	3.1%	3.4%	2.8%	3.2%	2.7%	2.9%	2.9%	2.4%	25%	48%	-113 bps
Transportation	18.5%	19.0%	18.5%	18.7%	18.3%	16.3%	17.4%	17.9%	19.0%	19.0%	18.7%	19.2%	17.7%	16.9%	16.7%	18.6%	17.9%	-12%	-3%	6 bps
Gasoline, other fuels, and motor oil	4.3%	5.1%	5.3%	5.7%	6.3%	4.8%	5.3%	6.4%	6.4%	6.2%	5.4%	4.6%	4.0%	3.8%	4.0%	3.9%	3.2%	-65%	-8%	-35 bps
Healthcare	6.8%	6.6%	6.4%	6.7%	6.8%	7.5%	7.4%	7.8%	7.8%	8.0%	8.9%	8.6%	8.9%	9.2%	9.0%	8.9%	9.6%	-10%	-36%	204 bps
Entertainment	4.7%	4.6%	4.6%	5.1%	5.7%	5.1%	4.8%	5.0%	4.8%	4.7%	5.2%	4.8%	4.9%	5.0%	4.9%	4.3%	3.9%	-47%	16%	-43 bps
Personal care products and services	1.4%	1.2%	1.2%	1.2%	1.2%	1.2%	1.2%	1.3%	1.2%	1.2%	1.2%	1.1%	1.2%	1.3%	1.3%	1.3%	1.1%	60%	68%	-4 bps
Reading	0.3%	0.3%	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%	23%	30%	-13 bps
Education	1.1%	1.1%	1.2%	1.3%	1.2%	1.3%	1.2%	1.3%	1.2%	1.3%	1.3%	1.3%	1.3%	1.2%	1.4%	1.3%	1.3%	-52%	-51%	22 bps
Tobacco products and smoking supplies	0.9%	1.0%	0.9%	0.9%	0.8%	1.0%	1.0%	1.0%	0.9%	0.9%	0.8%	0.8%	0.8%	0.7%	0.8%	0.7%	0.7%	-20%	12%	-23 bps
Miscellaneous	1.7%	1.8%	1.6%	1.7%	1.8%	1.8%	1.9%	1.4%	1.7%	1.2%	1.5%	1.5%	2.1%	1.9%	1.8%	1.6%	1.5%	38%	40%	-11 bps
Cash contributions	3.0%	3.1%	3.4%	3.7%	3.1%	3.5%	3.4%	3.1%	3.0%	3.1%	3.1%	2.9%	2.7%	2.9%	2.6%	2.5%	3.5%	-14%	-32%	-48 bps
Personal insurance and pensions	9.1%	9.1%	9.0%	8.6%	8.8%	8.5%	8.4%	8.3%	8.4%	8.2%	7.9%	8.6%	8.9%	8.6%	9.6%	8.7%	9.0%	60%	29%	-40 bps
Total ex-all food	**85.5%**	**86.5%**	**86.5%**	**86.9%**	**86.9%**	**86.7%**	**86.4%**	**86.8%**	**86.5%**	**86.5%**	**86.9%**	**87.4%**	**86.9%**	**86.0%**	**86.5%**	**85.9%**	**87.8%**	**-66%**	**-78%**	**45 bps**
Total ex-food away from home	**94.2%**	**94.2%**	**94.2%**	**94.4%**	**94.9%**	**94.9%**	**94.7%**	**95.0%**	**94.9%**	**94.9%**	**94.9%**	**94.9%**	**94.7%**	**94.0%**	**94.4%**	**94.2%**	**96.0%**	**-100%**	**-100%**	**3 bps**
Energy-related categories	**12.1%**	**13.0%**	**13.3%**	**13.7%**	**14.7%**	**13.5%**	**14.1%**	**15.1%**	**14.6%**	**14.7%**	**13.8%**	**12.8%**	**12.0%**	**11.2%**	**11.7%**	**11.3%**	**11.0%**	**-76%**	**-21%**	**-78 bps**

Note: Heat map is in reference to changes across individual category allocation levels between 2004 and 2019
Source: US Bureau of Labor Statistics, RBC Capital Markets

Allocation of Consumer Expenditures, by Category (2004–20)

Fourth Income Quintile

																		FAFH Correlation		Delta
	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	'04-'19	'04-'20	'19 vs. '04
Food	13.2%	13.2%	12.9%	12.5%	12.9%	13.2%	12.4%	12.9%	13.0%	13.0%	12.9%	12.8%	13.0%	12.9%	13.5%	12.8%	11.9%			-49 bps
Food at home	7.5%	7.3%	7.0%	6.8%	7.4%	7.6%	7.1%	7.6%	7.7%	7.6%	7.5%	7.1%	7.3%	7.2%	7.4%	7.3%	8.0%	-32%	-62%	-19 bps
Food away from home	**5.7%**	**6.0%**	**5.9%**	**5.7%**	**5.5%**	**5.6%**	**5.3%**	**5.4%**	**5.4%**	**5.4%**	**5.4%**	**5.7%**	**5.7%**	**5.7%**	**6.2%**	**5.5%**	**3.9%**			**-27 bps**
Alcoholic beverages	1.1%	1.0%	1.0%	0.9%	0.9%	1.0%	0.8%	0.9%	0.9%	0.9%	0.9%	0.9%	0.9%	1.0%	1.0%	0.9%	0.7%	54%	78%	-16 bps
Housing	30.9%	31.0%	33.1%	33.3%	33.0%	33.1%	33.7%	32.8%	31.5%	32.4%	32.3%	32.1%	31.9%	33.0%	32.2%	31.7%	33.2%	-25%	-33%	88 bps
Utilities, fuels, and public services	6.6%	6.6%	7.0%	7.0%	7.2%	7.3%	7.6%	7.4%	7.0%	7.4%	7.5%	7.0%	6.9%	6.5%	6.7%	6.5%	6.6%	-59%	-3%	-12 bps
Apparel and services	4.0%	4.0%	3.8%	3.7%	3.5%	3.2%	3.1%	3.5%	3.5%	3.2%	3.1%	3.1%	3.0%	3.0%	3.0%	3.2%	2.0%	25%	70%	-87 bps
Transportation	19.5%	19.3%	18.2%	19.3%	17.8%	16.8%	17.1%	17.8%	19.2%	18.6%	18.0%	17.8%	16.8%	16.4%	16.3%	18.2%	17.5%	-12%	4%	-137 bps
Gasoline, other fuels, and motor oil	4.0%	4.6%	5.1%	5.2%	5.8%	4.3%	4.8%	5.7%	5.8%	5.6%	5.2%	4.1%	3.8%	3.7%	3.8%	3.6%	2.7%	-47%	26%	-32 bps
Healthcare	5.8%	5.5%	5.7%	5.7%	6.0%	6.6%	6.7%	7.0%	7.0%	7.5%	8.4%	8.4%	8.4%	8.5%	8.5%	8.5%	8.5%	-10%	-29%	265 bps
Entertainment	5.4%	5.3%	4.9%	5.2%	5.6%	5.6%	5.1%	5.4%	4.9%	4.9%	4.9%	4.8%	5.3%	5.1%	5.0%	4.8%	4.9%	12%	25%	-61 bps
Personal care products and services	1.3%	1.1%	1.3%	1.2%	1.2%	1.1%	1.2%	1.3%	1.3%	1.2%	1.2%	1.3%	1.2%	1.3%	1.3%	1.3%	1.0%	12%	65%	0 bps
Reading	0.3%	0.3%	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%	0.1%	0.2%	17%	38%	-15 bps
Education	1.6%	1.7%	1.6%	1.2%	1.4%	1.6%	1.5%	1.4%	1.7%	1.6%	1.7%	1.5%	1.5%	1.7%	1.7%	1.7%	1.6%	19%	9%	8 bps
Tobacco products and smoking supplies	0.6%	0.6%	0.7%	0.6%	0.7%	0.8%	0.8%	0.7%	0.6%	0.7%	0.6%	0.6%	0.6%	0.5%	0.6%	0.6%	0.5%	-29%	37%	-9 bps
Miscellaneous	1.5%	2.0%	1.7%	1.6%	1.6%	1.6%	2.1%	1.5%	1.3%	1.3%	1.5%	1.5%	1.6%	1.3%	1.5%	1.2%	1.6%	19%	8%	-31 bps
Cash contributions	2.8%	3.1%	3.3%	3.2%	3.5%	3.4%	3.5%	3.3%	3.6%	3.6%	3.2%	3.0%	2.9%	2.8%	2.7%	3.0%	4.0%	-65%	-75%	26 bps
Personal insurance and pensions	12.0%	11.9%	11.8%	11.3%	11.7%	11.7%	11.8%	11.2%	11.1%	11.2%	11.2%	12.1%	12.7%	12.2%	12.5%	12.2%	12.5%	57%	-7%	18 bps
Total ex-all food	**86.8%**	**86.8%**	**87.1%**	**87.5%**	**87.1%**	**86.8%**	**87.6%**	**87.1%**	**87.0%**	**87.0%**	**87.1%**	**87.2%**	**87.0%**	**87.1%**	**86.5%**	**87.2%**	**88.1%**	**-58%**	**-80%**	**49 bps**
Total ex-food away from home	**94.3%**	**94.0%**	**94.1%**	**94.3%**	**94.4%**	**94.4%**	**94.7%**	**94.7%**	**94.6%**	**94.6%**	**94.6%**	**94.3%**	**94.3%**	**94.3%**	**93.8%**	**94.6%**	**96.1%**	**-100%**	**-100%**	**30 bps**
Energy-related categories	**10.6%**	**11.2%**	**12.1%**	**12.3%**	**13.1%**	**11.7%**	**12.4%**	**13.2%**	**12.8%**	**12.9%**	**12.6%**	**11.1%**	**10.6%**	**10.2%**	**10.5%**	**10.1%**	**9.3%**	**-55%**	**19%**	**-45 bps**

Note: Heat map is in reference to changes across individual category allocation levels between 2004 and 2019
Source: US Bureau of Labor Statistics, RBC Capital Markets

Allocation of Consumer Expenditures, by Category (2004–20)

Fifth Income Quintile (Highest Income)

																		FAFH Correlation		Delta
	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	'04-'19	'04-'20	'19 vs. '04
Food	11.5%	11.1%	10.8%	10.5%	11.3%	11.4%	11.5%	11.6%	11.4%	11.3%	11.1%	11.1%	11.2%	11.2%	11.2%	11.5%	10.7%			-2 bps
Food at home	5.9%	5.5%	5.5%	5.3%	5.8%	6.0%	6.1%	6.2%	6.0%	6.1%	5.8%	5.7%	5.5%	5.7%	5.7%	5.8%	6.9%	-25%	-75%	-10 bps
Food away from home	**5.6%**	**5.6%**	**5.4%**	**5.4%**	**5.5%**	**5.5%**	**5.4%**	**5.4%**	**5.4%**	**5.2%**	**5.3%**	**5.5%**	**5.6%**	**5.5%**	**5.5%**	**5.6%**	**3.9%**			**7 bps**
Alcoholic beverages	1.0%	0.9%	1.0%	1.0%	0.9%	0.9%	0.9%	1.1%	0.9%	0.9%	1.0%	1.0%	1.0%	1.1%	1.1%	1.0%	1.0%	19%	5%	-2 bps
Housing	30.4%	31.0%	32.0%	32.7%	31.7%	31.8%	31.9%	31.0%	29.9%	31.1%	30.5%	29.9%	30.0%	30.1%	29.9%	29.9%	31.9%	-40%	-37%	-54 bps
Utilities, fuels, and public services	5.1%	5.2%	5.2%	5.3%	5.3%	5.5%	5.7%	5.6%	5.4%	5.6%	5.4%	5.1%	5.0%	4.7%	4.9%	4.8%	5.1%	-62%	-5%	-34 bps
Apparel and services	4.4%	4.1%	3.8%	4.0%	3.6%	3.5%	3.7%	3.4%	3.4%	3.1%	3.5%	3.6%	3.1%	3.1%	3.1%	2.9%	2.5%	3%	53%	-143 bps
Transportation	17.4%	17.3%	17.5%	16.4%	16.1%	15.0%	15.0%	16.1%	16.4%	17.0%	16.1%	16.1%	14.3%	15.6%	15.5%	15.8%	14.6%	-28%	29%	-164 bps
Gasoline, other fuels, and motor oil	3.0%	3.5%	3.7%	3.8%	4.3%	3.3%	3.5%	4.3%	4.3%	4.1%	3.6%	2.9%	2.6%	2.6%	2.8%	2.6%	1.9%	-59%	34%	-36 bps
Healthcare	4.5%	4.4%	4.3%	4.4%	4.5%	5.0%	5.2%	5.5%	5.8%	5.8%	6.9%	6.4%	6.8%	6.7%	6.6%	6.9%	6.9%	11%	-26%	238 bps
Entertainment	5.4%	5.5%	5.4%	6.1%	5.9%	5.8%	5.7%	5.3%	5.5%	5.2%	5.4%	5.4%	5.3%	5.9%	5.5%	5.6%	5.2%	9%	34%	25 bps
Personal care products and services	1.3%	1.1%	1.1%	1.2%	1.2%	1.2%	1.2%	1.3%	1.2%	1.2%	1.2%	1.2%	1.2%	1.2%	1.2%	1.2%	1.0%	24%	69%	-14 bps
Reading	0.3%	0.3%	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%	0.1%	0.1%	0.2%	-3%	18%	-18 bps
Education	2.8%	2.8%	2.4%	2.6%	3.0%	3.1%	3.2%	2.7%	3.4%	3.0%	3.1%	3.4%	3.2%	3.8%	3.3%	3.4%	3.1%	20%	5%	53 bps
Tobacco products and smoking supplies	0.3%	0.3%	0.3%	0.3%	0.3%	0.4%	0.3%	0.3%	0.3%	0.3%	0.3%	0.3%	0.3%	0.2%	0.2%	0.2%	0.2%	-21%	32%	-15 bps
Miscellaneous	1.5%	1.6%	1.8%	1.6%	1.7%	1.7%	1.6%	1.5%	1.6%	1.3%	1.4%	1.5%	1.6%	1.8%	1.5%	1.4%	1.4%	20%	39%	-10 bps
Cash contributions	4.0%	4.3%	4.7%	4.4%	4.0%	4.0%	3.6%	4.0%	4.3%	4.2%	3.8%	3.7%	4.7%	3.6%	3.8%	3.8%	4.0%	1%	1%	-20 bps
Personal insurance and pensions	15.1%	15.3%	14.7%	14.6%	15.6%	15.9%	16.0%	15.9%	15.6%	15.6%	15.6%	16.0%	17.2%	15.6%	17.0%	16.3%	17.3%	41%	-37%	126 bps
Total ex-all food	**88.5%**	**88.9%**	**89.2%**	**89.5%**	**88.7%**	**88.6%**	**88.5%**	**88.4%**	**88.6%**	**88.7%**	**88.9%**	**88.9%**	**88.8%**	**88.8%**	**88.8%**	**88.5%**	**89.3%**	**-26%**	**-46%**	**2 bps**
Total ex-food away from home	**94.4%**	**94.4%**	**94.7%**	**94.8%**	**94.5%**	**94.5%**	**94.6%**	**94.6%**	**94.6%**	**94.8%**	**94.7%**	**94.6%**	**94.3%**	**94.5%**	**94.5%**	**94.4%**	**96.1%**	**-94%**	**-99%**	**-8 bps**
Energy-related categories	**8.1%**	**8.7%**	**8.9%**	**9.1%**	**9.7%**	**8.7%**	**9.1%**	**9.9%**	**9.7%**	**9.7%**	**9.1%**	**8.0%**	**7.6%**	**7.3%**	**7.7%**	**7.4%**	**7.0%**	**-63%**	**24%**	**-70 bps**

Note: Heat map is in reference to changes across individual category allocation levels between 2004 and 2019.
\Source: US Bureau of Labor Statistics, RBC Capital Markets

Companies mentioned

Brinker International, Inc. (NYSE: EAT US; $29.48; Sector Perform)
Chipotle Mexican Grill, Inc. (NYSE: CMG US; $1,369.59; Outperform)
Darden Restaurants, Inc. (NYSE: DRI US; $123.46; Outperform)
Domino's Pizza, Inc. (NYSE: DPZ US; $385.44; Outperform)
Jack in the Box Inc. (NASDAQ: JACK US; $71.70; Outperform)
Life Time Group Holdings, Inc. (NYSE: LTH US; $14.71; Outperform)
McDonald's Corporation (NYSE: MCD US; $242.16; Outperform)
Restaurant Brands International Inc. (NYSE: QSR US; $51.44; Outperform)
Starbucks Corporation (NASDAQ: SBUX US; $78.91; Sector Perform)
Sweetgreen, Inc. (NYSE: SG US; $15.89; Outperform)
Texas Roadhouse, Inc. (NASDAQ: TXRH US; $79.99; Sector Perform)
The Wendy's Company (NASDAQ: WEN US; $18.66; Sector Perform)
Wingstop Inc. (NASDAQ: WING US; $81.69; Sector Perform)
Yum! Brands, Inc. (NYSE: YUM US; $117.32; Sector Perform)

Required disclosures

Conflicts disclosures

This product constitutes a compendium report (covers six or more subject companies). As such, RBC Capital Markets chooses to provide specific disclosures for the subject companies by reference. To access conflict of interest and other disclosures for the subject companies, clients should refer to https://www.rbccm.com/GLDisclosure/PublicWeb/DisclosureLookup.aspx?entityId=1. These disclosures are also available by sending a written request to RBC Capital Markets Research Publishing, P.O. Box 50, 200 Bay Street, Royal Bank Plaza, 29th Floor, South Tower, Toronto, Ontario M5J 2W7 or an email to rbcinsight@rbccm.com.

The analyst(s) responsible for preparing this research report received compensation that is based upon various factors, including total revenues of the member companies of RBC Capital Markets and its affiliates, a portion of which are or have been generated by investment banking activities of the member companies of RBC Capital Markets and its affiliates.

With regard to the MAR investment recommendation requirements in relation to relevant securities, a member company of Royal Bank of Canada, together with its affiliates, may have a net long or short financial interest in excess of 0.5% of the total issued share capital of the entities mentioned in the investment recommendation. Information relating to this is available upon request from your RBC investment advisor or institutional salesperson.

Distribution of ratings

For the purpose of ratings distributions, regulatory rules require member firms to assign ratings to one of three rating categories - Buy, Hold/Neutral, or Sell - regardless of a firm's own rating categories. Although RBC Capital Markets' ratings of Outperform (O), Sector Perform (SP), and Underperform (U) most closely correspond to Buy, Hold/Neutral and Sell, respectively, the meanings are not the same because our ratings are determined on a relative basis.

Distribution of ratings
RBC Capital Markets, Equity Research
As of 31-Mar-2022

			Investment Banking Serv./Past 12 Mos.	
Rating	Count	Percent	Count	Percent
BUY [Outperform]	841	57.68	330	39.24
HOLD [Sector Perform]	569	39.03	172	30.23
SELL [Underperform]	48	3.29	3	6.25

Conflicts policy

RBC Capital Markets Policy for Managing Conflicts of Interest in Relation to Investment Research is available from us on request. To access our current policy, clients should refer to

https://www.rbccm.com/global/file-414164.pdf
or send a request to RBC Capital Markets Research Publishing, P.O. Box 50, 200 Bay Street, Royal Bank Plaza, 29th Floor, South Tower, Toronto, Ontario M5J 2W7. We reserve the right to amend or supplement this policy at any time.

Dissemination of research and short-term trade ideas

RBC Capital Markets endeavors to make all reasonable efforts to provide research content simultaneously to all eligible clients, having regard to local time zones in overseas jurisdictions. RBC Capital Markets provides eligible clients with access to Equity Research Reports and to SPARC on the Firm's proprietary INSIGHT website, via email and via third-party vendors. SPARC contains market color and commentary regarding subject companies on which the Firm currently provides equity research coverage. Research Analysts may, from time to time, include short-term trade ideas in Research Reports and / or in SPARC. A short-term trade idea offers a short-term view on how a security may trade, based on market and trading events, and the resulting trading opportunity that may be available. A short-term trade idea may differ from the price targets and recommendations in our published Research Reports reflecting the Research Analyst's views of the longer-term (one year) prospects of the subject company, as a result of the differing time horizons, methodologies and/or other factors. Thus, it is possible that a subject company's common equity that is considered a long-term 'Sector Perform' or even an 'Underperform' might present a short-term buying opportunity as a result of temporary selling pressure in the market; conversely, a subject company's common equity rated a long-term 'Outperform' could be considered susceptible to a short-term downward price correction. Short-term trade ideas are not ratings, nor are they part of any ratings system, and the firm generally does not intend, nor undertakes any obligation, to maintain or update short-term trade ideas. Short-term trade ideas may not be suitable for all investors and have not been tailored to individual investor circumstances and objectives, and investors should make their own independent decisions regarding any securities or strategies discussed herein. Please contact your investment advisor or institutional salesperson for more information regarding RBC Capital Markets' research.
For a list of all recommendations on the company that were disseminated during the prior 12-month period, please click on the following link: https://rbcnew.bluematrix.com/sellside/MAR.action
The 12 month history of SPARCs can be viewed at https://www.rbcinsightresearch.com.

Analyst certification

All of the views expressed in this report accurately reflect the personal views of the responsible analyst(s) about any and all of the subject securities or issuers. No part of the compensation of the responsible analyst(s) named herein is, or will be, directly or indirectly, related to the specific recommendations or views expressed by the responsible analyst(s) in this report.

Third-party-disclaimers

The Global Industry Classification Standard ("GICS") was developed by and is the exclusive property and a service mark of MSCI Inc. ("MSCI") and Standard & Poor's Financial Services LLC ("S&P") and is licensed for use by RBC. Neither MSCI, S&P, nor any other party involved in making or compiling the GICS or any GICS classifications makes any express or implied warranties or representations with respect to such standard or classification (or the results to be obtained by the use thereof), and all such parties hereby expressly disclaim all warranties of originality, accuracy, completeness, merchantability and fitness for a particular purpose with respect to any of such standard or classification. Without limiting any of the foregoing, in no event shall MSCI, S&P, any of their affiliates or any third party involved in making or compiling the GICS or any GICS classifications have any liability for any direct, indirect, special, punitive, consequential or any other damages (including lost profits) even if notified of the possibility of such damages.

RBC Capital Markets disclaims all warranties of originality, accuracy, completeness, merchantability or fitness for a particular purpose with respect to any statements made to the media or via social media that are in turn quoted in this report, or otherwise reproduced graphically for informational purposes.
References herein to "LIBOR", "LIBO Rate", "L" or other LIBOR abbreviations means the London interbank offered rate as administered by ICE Benchmark Administration (or any other person that takes over the administration of such rate).

Disclaimer

RBC Capital Markets is the business name used by certain branches and subsidiaries of the Royal Bank of Canada, including RBC Dominion Securities Inc., RBC Capital Markets, LLC, RBC Europe Limited, RBC Capital Markets (Europe) GmbH, Royal Bank of Canada, Hong Kong Branch and Royal Bank of Canada, Sydney Branch. The information contained in this report has been compiled by RBC Capital Markets from sources believed to be reliable, but no representation or warranty, express or implied, is made by Royal Bank of Canada, RBC Capital Markets, its affiliates or any other person as to its accuracy, completeness or correctness. All opinions and estimates contained in this report constitute RBC Capital Markets' judgement as of the date of this report, are subject to change without notice and are provided in good faith but without legal responsibility. Nothing in this report constitutes legal, accounting or tax advice or individually tailored investment advice. This material is prepared for general circulation to clients and has been prepared without regard to the individual financial circumstances and objectives of persons who receive it. The investments or services contained in this report may not be suitable for you and it is recommended that you consult an independent investment advisor if you are in doubt about the suitability of such investments or services. This report is not an offer to sell or a solicitation of an offer to buy any securities. Past performance is not a guide to future performance, future returns are not guaranteed, and a loss of original capital may occur. RBC Capital Markets research analyst compensation is based in part on the overall profitability of RBC Capital Markets, which includes profits attributable to investment banking revenues. Every province in Canada, state in the U.S., and most countries throughout the world have their own laws regulating the types of securities and other investment products which may be offered to their residents, as well as the process for doing so. As a result, the securities discussed in this report may not be eligible for sale in some jurisdictions. RBC Capital Markets may be restricted from publishing research reports, from time to time, due to regulatory restrictions and/ or internal compliance policies. If this is the case, the latest published research reports available to clients may not reflect recent material changes in the applicable industry and/or applicable subject companies. RBC Capital Markets research reports are current only as of the date set forth on the research reports. This report is not, and under no circumstances should be construed as, a solicitation to act as securities broker or dealer in any jurisdiction by any person or company that is not legally permitted to carry on the business of a securities broker or dealer in that jurisdiction. To the full extent permitted by law neither RBC Capital Markets nor any of its affiliates, nor any other person, accepts any liability whatsoever for any direct, indirect or consequential loss arising from, or in connection with, any use of this report or the information contained herein. No matter contained in this document may be reproduced or copied by any means without the prior written consent of RBC Capital Markets in each instance.

Additional information is available on request.

To U.S. Residents:

This publication has been approved by RBC Capital Markets, LLC (member FINRA, NYSE, SIPC), which is a U.S. registered broker-dealer and which accepts responsibility for this report and its dissemination in the United States. Any U.S. recipient of this report that is not a registered broker-dealer or a bank acting in a broker or dealer capacity and that wishes further information regarding, or to effect any transaction in, any of the securities discussed in this report, should contact and place orders with RBC Capital Markets, LLC.

To Canadian Residents:

This publication has been approved by RBC Dominion Securities Inc.(member IIROC). Any Canadian recipient of this report that is not a Designated Institution in Ontario, an Accredited Investor in British Columbia or Alberta or a Sophisticated Purchaser in Quebec (or similar permitted purchaser in any other province) and that wishes further information regarding, or to effect any transaction in, any of the securities discussed in this report should contact and place orders with RBC Dominion Securities Inc., which, without in any way limiting the foregoing, accepts responsibility for this report and its dissemination in Canada.

To U.K. Residents:

This publication has been approved by RBC Europe Limited ('RBCEL') which is authorized by the Prudential Regulation Authority and regulated by the Financial Conduct Authority ('FCA') and the Prudential Regulation Authority, in connection with its distribution in the United Kingdom. This material is not for general distribution in the United Kingdom to retail clients, as defined under the rules of the FCA. RBCEL accepts responsibility for this report and its dissemination in the United Kingdom.

To EEA Residents:

This material is distributed in the EU by either RBCEL on an authorised cross-border basis, or by RBC Capital Markets (Europe) GmbH (RBC EG) which is authorised and regulated in Germany by the Bundesanstalt für Finanzdienstleistungsaufsicht (German Federal Financial Supervisory Authority) (BaFin).

To Persons Receiving This Advice in Australia:

This material has been distributed in Australia by Royal Bank of Canada, Sydney Branch (ABN 86 076 940 880, AFSL No. 246521). This material has been prepared for general circulation and does not take into account the objectives, financial situation or needs of any recipient. Accordingly, any recipient should, before acting on this material, consider the appropriateness of this material having regard to their objectives, financial situation and needs. If this material relates to the acquisition or possible acquisition of a particular financial product, a recipient in Australia should obtain any relevant disclosure document prepared in respect of that product and consider that document before making any decision about whether to acquire the product. This research report is not for retail investors as defined in section 761G of the Corporations Act.

To Hong Kong Residents:

This publication is distributed in Hong Kong by Royal Bank of Canada, Hong Kong Branch, which is regulated by the Hong Kong Monetary Authority and the Securities and Futures Commission (SFC) in Hong Kong, RBC Investment Services (Asia) Limited and RBC Global Asset Management (Asia) Limited, both entities are regulated by the SFC. This material is not for general distribution in Hong Kong to persons who are not professional investors (as defined in the Securities and Futures Ordinance of Hong Kong (Cap. 571) and any rules made thereunder.

To Singapore Residents:

This publication is distributed in Singapore by the Royal Bank of Canada, Singapore Branch, a registered entity licensed by the Monetary Authority of Singapore. This material has been prepared for general circulation and does not take into account the objectives, financial situation, or needs of any recipient. You are advised to seek independent advice from a financial adviser before purchasing any product. If you do not obtain independent advice, you should consider whether the product is suitable for you. Past performance is not indicative of future performance. If you have any questions related to this publication, please contact the Royal Bank of Canada, Singapore Branch. Royal Bank of Canada, Singapore Branch accepts responsibility for this report and its dissemination in Singapore.

To Japanese Residents:

Unless otherwise exempted by Japanese law, this publication is distributed in Japan by or through RBC Capital Markets (Japan) Ltd. which is a Financial Instruments Firm registered with the Kanto Local Financial Bureau (Registered number 203) and a member of the Japan Securities Dealers Association (JSDA) and the Financial Futures Association of Japan (FFAJ).