

Note: The following is a redacted version of the original report published May 13, 2020 [23 pgs].

Measuring the Reopening of America

The GS US Reopening Scale: Remains at 1 (Week of May 13)

GS US Reopening Scale

Week of 5/13

5/6
reading: 1



(commuting, box office, travel, etc.) and business activity (freight, housing, equipment sales, etc). While there is economic data being used for this purpose (see *Measuring the Impact of Lockdowns and Social Distancing on Global GDP*), we look to a broader set of high frequency sources (app downloads, point of sale, restaurant reservations, etc). We have added a few data series this week and expect to continue to expand and refine the analysis over the course of the coming weeks as more data becomes available and the profile of the reopening evolves.

Following last week's initial report in the series, we continue to monitor the reopening of America, as cities and states across the U.S. begin to reopen at different paces and with different processes in place. In this series, we attempt to provide tools to measure the pace at which this reopening is happening by looking at a wide range of data from "Stay at Home" (food delivery, eCommerce, streaming media, grocery sales, etc.) to "Back to Normal"

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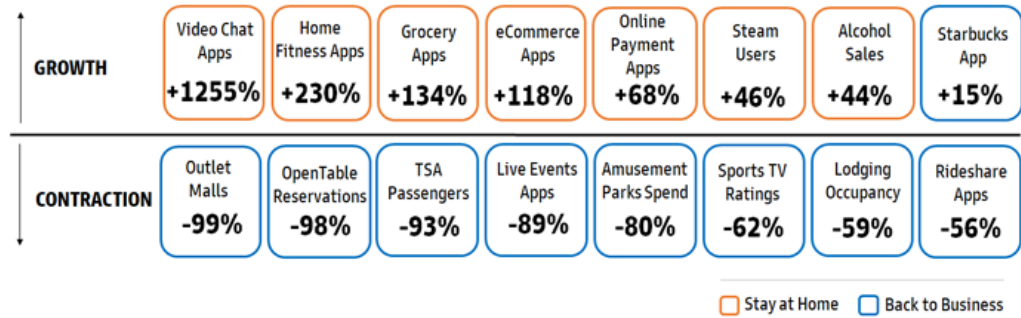
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Exhibit 1: Reopening at a glance: Back-to-business segments still deep in contraction, stay at home growing strong

% change yoy for week ending May 10



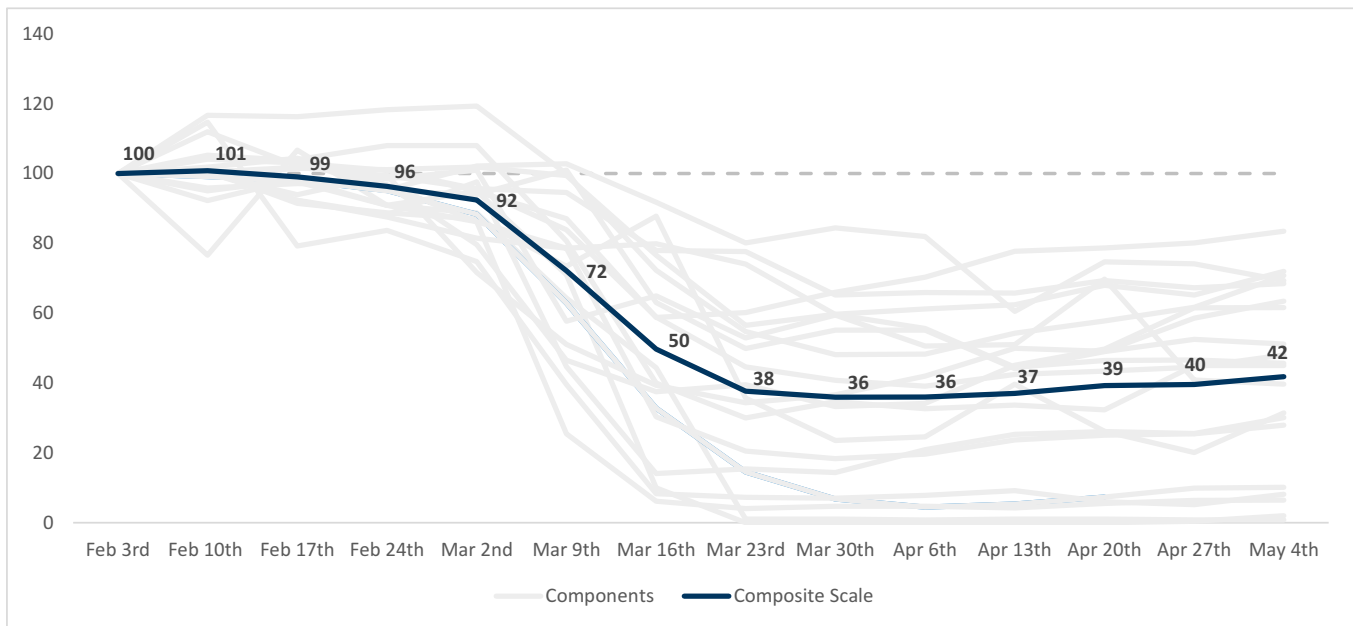
This exhibit summarizes data from sources listed in Exhibits 5, 6 and 10.

Source: Goldman Sachs Global Investment Research

The GS US Reopening Scale, which attempts to quantify where the balance of the scale sits between “Stay at Home,” the state we currently find ourselves in, and “Back to Normal,” remains at “1” through the week of 5/13 as we have not seen ample aggregate reversal in trends to date to warrant an improvement in our Reopening score. However, the Composite Score that the Reopening Scale is based on (Exhibit 2) improved modestly to 42 (vs. 40 and 39 in the prior two weeks, respectively). To determine the position of the scale (1-10) we calculate growth or decline in each category relative to pre-Crisis levels (week of Feb 3rd), and equal-weight each category into our Composite Scale (Exhibit 12). From there, we assign a Reopening score reflecting these quantitative inputs (Exhibit 11). As progress toward reopening begins, we expect that will show up in the Reopening Scale moving higher and we plan to continue monitoring that progress.

Exhibit 2: Our Composite Scale shows a modest rebound in recent weeks, though we remain below 50

Date on x-axis represents first day of week measured



This exhibit summarizes data from sources listed in Exhibits 5, 6 and 10.

Source: Goldman Sachs Global Investment Research

Key Findings

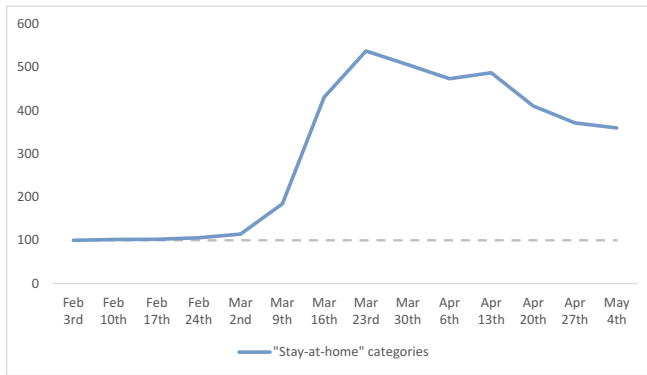
Our read across of these data sources continues to describe a landscape we're all very familiar with: lots of eCommerce deliveries, streaming media, and video chats taking the place of commuting, travel, and trips to the store. While that picture remains very one sided in the data ([Exhibit 4](#)), with larger number of cities and states beginning to look for ways to reopen, we expect to see the scale shifting higher over time, showing less "Stay at Home" activity and more signs of "Back to Normal".

Highlights

- Mobility companies are starting to see signs of recovery, particularly in states that have begun to reopen.** As of last week's results, Uber rides were on track to deliver week-on-week growth for a fourth consecutive week. Both Global and US bookings were up 12% week-on-week in the week prior. Rides bookings in large cities across Georgia and Texas specifically are up substantially from the bottom at 43% and 50%, respectively. Even in New York City's state of lockdown, rides grew 14% week over week. To-date, Uber is seeing the rebound led by weekday nine-to-five trips, including commute use cases. Rides for Lyft in April were -75% y/y, although they bottomed in the second week of April and since then the company has recorded 3 weeks of consecutive w/w growth. The week ending April 12 was the low for the month, with rides for the week ending May 3 up 21% from that low.

- **Digital payments companies have additionally been beneficiaries of accelerated adoption in the current environment with as app download growth continues to accelerate into early May.** Visa and Mastercard reported accelerating growth in card not present cross border payment volume into the end of April (ex-travel; reaching YTD highs), and Visa made similar comments as it related to its U.S. business in aggregate. PayPal indicated that May 1st was the largest single day of transactions in the company's history, and app downloads of online payments apps PayPal, Venmo, Cash App, and Zelle continued to accelerate through the first two weeks of May after meaningful increases beginning in Mid-April. On average, y/y percentage downloads growth for these apps reached 68% over the last four weeks, vs. 38% over the prior four weeks ending mid-April.
- **In the lodging space, drive-to and leisure markets are seeing the first signs of recovery.** As a few examples, Host Hotels' Ritz-Carlton Amelia Island and Don Cesar St. Petersburg Beach have seen occupancy recover to 50-60% over the Memorial Day weekend. Similarly, Pebblebrook Hotel's LaPlaya Resort in Naples moved from 5-7% occupancy to now 30% occupancy, building into Memorial Day weekend and beyond. Outside of Florida, DiamondRock highlighted its properties in Sedona, Huntington Beach and Lake Tahoe have seen occupancy move from the lows of ~10% to the mid 20s in May with nightly rates holding up for these higher end properties.
- **Industrials data points** remain largely at their lows, especially in the longer-cycle end markets, however most are now walking along the bottom as opposed to incrementally worsening, while a select few have seen positive second derivative improvement. **Mortgage applications** in the last week of April were down -19% yoy vs. down -35% yoy in the first week of April. **Weekly rail intermodal carloads** from the US rails were down -14% yoy in the last week of April vs. down -20% yoy in the second week of April. **The number of passenger commercial aircraft** in service was down -48% yoy in the first week of May vs. down 61% yoy in the second week of April.
- **eCommerce broadly continues to be a beneficiary of shelter-in-place trends with Wayfair pointing to consumer stimulus as another tailwind for its business.** The roll-out of stimulus monies in mid-April served as an added accelerant of new and repeat customers to Wayfair, according to the company. For Etsy, the Etsy marketplace delivered its highest ever month of GMS as a public company in April, with the two highest days of GMS of all time on Thursday and Friday of the week prior. So far, May performance remains consistent with April (+90% QTD through first week of May), according to the company.

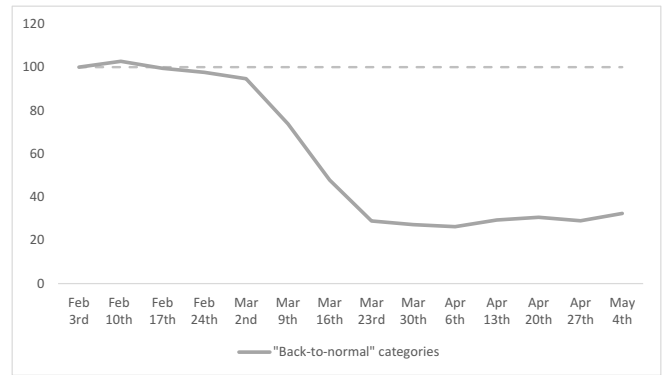
Exhibit 3: Stay Home categories receding slightly from peak levels
 Date on x-axis represents first day of week measured



This exhibit summarizes data from sources listed in Exhibits 5, 6 and 10.

Source: Goldman Sachs Global Investment Research

Exhibit 4: Back to Normal categories on average down 68% from February levels, but up 6pts from trough
 Date on x-axis represents first day of week measured



This exhibit summarizes data from sources listed in Exhibits 5, 6 and 7.

Source: Goldman Sachs Global Investment Research

Weekly Trends

Stay Home

While it is no surprise that companies like Netflix, Zoom and Amazon are in high demand during a time when many states are implementing shelter-in-home policies, we continue to collect and track data across a number of sources and verticals to understand the extent to which different categories are being impacted.

Most categories in our “Stay at Home” scale are still experiencing demand surges, most notably ecommerce where the acceleration in app downloads and other measures of consumer activity has been notable though the most recent data. Some have moderated since the second half of March/first half of April though, with food delivery app downloads +40% y/y over the past two weeks, compared to +56% y/y in the first two weeks of April. Similarly, video chat app downloads are up ~1300% in the past two weeks compared to +1700% at the beginning of April. Steam users remain elevated, hovering around +50% y/y growth for the past 7 weeks, including +46% y/y growth in the most recent one. Excluding Disney+ (which is represented through a month-on-month figure), streaming app downloads are +18% y/y on average, compared to +32% in the week of April 20. We expect elevated demand into the summer months for this basket of “Stay at Home” metrics even as they continue to moderate as mobility restrictions are slowly lifted.

Exhibit 5: "Stay at Home" metrics surging reflect demand for these categories during lockdowns and sheltering in place

Basket	Sector	Company/App	Metric	y/y % change, unless otherwise noted																	Source
				Feb 3 - Feb 9	Feb 10 - Feb 16	Feb 17 - Feb 23	Feb 24 - Mar 1	Mar 2 - Mar 8	Mar 9 - Mar 15	Mar 16 - Mar 22	Mar 23 - Mar 29	Mar 30 - Apr 5	Apr 6 - Apr 12	Apr 13 - Apr 19	Apr 20 - Apr 26	Apr 27 - May 3	May 4 - May 10				
Stay home	eCommerce	Amazon	US App Downloads	28%	39%	14%	2%	11%	13%	29%	4%	19%	25%	35%	91%	86%	87%	75%	Sensor Tower		
		Walmart Shopping	-24%	-4%	-5%	11%	13%	29%	37%	33%	61%	60%	91%	86%	86%	111%					
		Target	11%	-4%	4%	6%	34%	115%	88%	114%	187%	212%	150%	180%	132%	130%					
		Ebay	9%	19%	5%	21%	21%	36%	5%	3%	32%	46%	86%	69%	80%	84%					
		Wayfair	-10%	8%	-6%	7%	12%	18%	10%	29%	38%	30%	130%	131%	160%	150%					
	Groceries	Walmart Groceries	US App Downloads	19%	20%	22%	15%	14%	2%	3%	13%	58%	93%	193%	158%	164%	148%		Catalina		
		Instacart	-14%	-7%	-19%	-22%	-39%	-120%	-242%	-249%	-402%	-337%	-101%	-39%	-109%	-3%					
		Costco	8%	24%	0%	1%	22%	130%	376%	572%	768%	824%	444%	342%	248%	223%					
		Kroger	124%	128%	157%	130%	186%	428%	486%	524%	485%	576%	386%	256%	232%						
		Flour	12%	24%	16%	12%	13%	20%	83%	114%	168%	174%	86%	69%	39%	85%					
	Online Media	Household cleaning compounds	Store	28%	0%	1%	9%	17%	150%	247%	143%	142%	125%	62%	111%	114%	99%		Sensor Tower		
		Alcohol	4%	6%	6%	34%	168%	294%	158%	92%	81%	70%	62%	57%	54%	52%					
		Staples	3%	8%	8%	5%	11%	37%	74%	30%	42%	45%	17%	40%	38%	44%					
		Food	0%	0%	0%	1%	10%	87%	79%	19%	22%	28%	1%	28%	16%	18%					
		Netflix	1%	1%	0%	2%	9%	85%	114%	114%	40%	47%	9%	51%	32%	31%					
	News TV	Disney+	US App Downloads (min change)	-29%	-16%	-12%	-3%	-2%	6%	103%	74%	65%	32%	-35%	-42%	-35%	-26%		Nielsen		
		Hulu	11%	7%	6%	9%	-2%	-14%	14%	12%	-10%	-1%	13%	14%	6%	-1%					
		Amazon Prime Video	12%	10%	6%	8%	6%	11%	60%	87%	49%	35%	43%	4%	30%	21%					
		CNN	-5%	-20%	-14%	-19%	-33%	-139%	-204%	-285%	-250%	-207%	-137%	-135%	-97%	-84%					
		Fox News Channel	-46%	-14%	-13%	-22%	-41%	-69%	-116%	-100%	-120%	-86%	-68%	-60%	-44%	-27%					
	Online Gaming	MSNBC	-16%	-24%	-11%	-30%	4%	32%	68%	104%	69%	51%	37%	68%	22%	16%		Sully Gnome			
		Twitch Streams	11%	11%	11%	14%	12%	17%	38%	48%	55%	52%	53%	54%	50%	46%					
		Steam	2%	8%	11%	14%	12%	17%	38%	48%	55%	52%	53%	54%	50%	46%					
		Users	24%	23%	16%	21%	18%	17%	57%	82%	89%	39%	30%	35%	33%	25%					
		IOS app downloads	29%	29%	29%	29%	29%	29%	29%	29%	29%	29%	29%	29%	29%	29%					
	Food Delivery	Consumer Spend	21%	21%	21%	21%	21%	21%	21%	21%	21%	21%	21%	21%	21%	21%		Facteus			
		Onhub	38%	39%	40%	31%	37%	36%	4%	16%	40%	85%	75%	62%	60%	80%					
		UberEats	-22%	-10%	-15%	-22%	-35%	-38%	2%	14%	11%	12%	17%	12%	15%	22%					
		DoorDash	-30%	-24%	-31%	-22%	-22%	-27%	25%	50%	49%	62%	105%	70%	57%	56%					
		Dominos	-26%	-13%	-18%	-26%	-7%	-18%	24%	100%	33%	11%	50%	35%	28%	28%					
At-home Fitness	Peloton	65%	57%	118%	111%	51%	70%	804%	818%	541%	431%	470%	465%	551%	314%		Sensor Tower				
	Map My Run	-18%	-14%	2%	8%	16%	-6%	67%	112%	133%	158%	140%	148%	188%	168%						
	Nike Training Club	0%	-4%	-3%	-24%	-20%	-22%	-25%	-43%	-58%	-37%	-30%	-32%	-28%	-21%						
	Yoga 1 Down Dog	-33%	-30%	-33%	-20%	-24%	-57%	176%	1176%	1514%	723%	359%	541%	309%	272%						
	Workout for Women	-18%	-13%	-10%	-12%	-14%	-8%	107%	180%	182%	184%	181%	125%	120%	189%						
Video Chat Apps	Zoom	US App Downloads	33%	24%	15%	30%	66%	707%	2056%	3036%	3238%	3061%	3422%	2976%	2629%	3129%		Sensor Tower			
	Shape	-22%	-18%	-16%	-26%	-16%	31%	330%	327%	279%	230%	150%	156%	94%	69%						
	Houseparty	-47%	-47%	-43%	-44%	-41%	-2%	713%	1928%	1787%	2002%	2272%	1322%	809%	556%						
	PayPal	15%	16%	14%	23%	15%	12%	23%	29%	23%	29%	72%	69%	58%	65%						
	Venmo	14%	6%	15%	15%	6%	6%	21%	49%	37%	36%	37%	41%	39%	59%						
Online Payment Apps	Square: Cash App	18%	7%	8%	35%	19%	24%	46%	88%	51%	63%	159%	96%	103%	117%		Sensor Tower				
	Zelle	18%	12%	11%	16%	14%	11%	17%	23%	40%	39%	70%	25%	26%	29%						

Source: Sources in exhibit, compiled by Goldman Sachs Global Investment Research

Back to Normal

The "Back to Normal" category includes some of the most heavily impacted consumer segments, including commuting, dining and all aspects of travel.

Box office and dining metrics are still down close to 100% as movie theaters and restaurants remain mostly closed in the country, although OpenTable dining figures are -98% in the most recent week after being -100% in the six weeks prior, with some cities down as little as 80%. This week, we added the live events category, where app downloads have been down -90% on average each week since March 16th when shelter-in-place policies first began. We also added Outlet Mall ShopperTrak weekly visits data, which is still down -99% this past week where it has been for seven weeks, as these malls remain closed. In comparison, overall retail (which includes some essential businesses) weekly visits have rebounded slightly to -40% last week after remaining at -49% for several weeks in late March. Department stores also report consumer spend improvement to -39% in the week of April 27, off lows of -67%, according to Facteus.

Exhibit 6: "Back to Normal" metrics are down significantly, although starting to see small signs of recovery

Basket	Sector	Company/App	Metric	y/y % change, unless otherwise noted																Source
				Feb 3 - Feb 9	Feb 10 - Feb 16	Feb 17 - Feb 23	Feb 24 - Mar 1	Mar 2 - Mar 8	Mar 9 - Mar 15	Mar 16 - Mar 22	Mar 23 - Mar 29	Mar 30 - Apr 5	Apr 6 - Apr 12	Apr 13 - Apr 19	Apr 20 - Apr 26	Apr 27 - May 3	May 4 - May 10			
Back to normal	Gym Attendance	Planet Fitness		89%	78%	80%	55%	49%	34%	15%	33%	27%	22%	20%	18%	20%	46%			
		Council Fitness		55%	72%	51%	58%	59%	24%	22%	80%	86%	88%	90%	82%	80%	86%			
		Anytime Fitness		20%	10%	9%	-10%	-25%	13%	87%	16%	-80%	-77%	-84%	-85%	-85%	-83%			
		Classpass	US App Downloads	63%	52%	45%	30%	40%	1%	-88%	-55%	-64%	-63%	-76%	-62%	-64%	-66%	Sensor Tower		
		Libur		-15%	-17%	-11%	-14%	-20%	-32%	89%	70%	-71%	-72%	-64%	-63%	-68%	-51%			
	Commuting	Lyft		-11%	-2%	4%	2%	8%	-27%	56%	-70%	-70%	-72%	-65%	-62%	-59%	-56%			
		Waze		-49%	-18%	-12%	-10%	-15%	28%	-57%	-63%	-70%	-69%	-66%	-58%	-57%	-56%	EIA		
		Gas Demand		1%	1%	1%	1%	3%	3%	3%	27%	48%	46%	44%	30%	-32%				
	Community Mobility Reports	Google COVID-19	Transit % change from baseline			1%	1%	4%	3%	6%	-33%	-48%	-50%	-52%	-50%	-48%	-44%	Google		
		Workplaces % change from baseline				-2%	3%	3%	-3%	29%	-42%	-46%	-49%	-45%	-44%	-44%				
	Starbucks	US App Downloads		-6%	37%	20%	25%	51%	-7%	-11%	-50%	-54%	-50%	-49%	-41%	-35%	15%	Sensor Tower		
		US Top 10 Gross		27%	-19%	26%	-21%	-16%	-64%	-88%	-100%	-100%	-100%	-100%	-100%	-100%	-100%	Box Office Mojo		
	Box Office	Movies Released		-22%	24%	8%	6%	8%	-8%	16%	42%	88%	88%	88%	88%	88%	98%			
		ESPN		-8%	-30%	-24%	-13%	-15%	-53%	-25%	-45%	-51%	-66%	45%	19%	-51%	-54%			
	Sports TV	NBCSN		-26%	18%	-12%	-17%	-7%	-46%	-89%	-75%	-86%	-80%	87%	88%	82%	89%	Nielsen		
		FS1		15%	26%	23%	6%	6%	-39%	-53%	-36%	-46%	-11%	-25%	-34%	-43%	-46%			
	Dining	OpenTable	Seated diners		-8%	-6%	7%	8%	-7%	-15%	33%	-69%	-46%	-46%	-45%	-43%	-49%			
		Weekly Visits		-9%	-7%	-2%	0%	-7%	-30%	82%	99%	-100%	-100%	-100%	-100%	-99%				
	Retail	Outlet Malls	Weekly Visits		-8%	-7%	-2%	0%	-7%	-30%	82%	99%	-100%	-100%	-100%	-100%	-99%	Open Table		
		Beauty Aids \$store		0%	-8%	-5%	-7%	-8%	-5%	-28%	-40%	-29%	-21%	-24%	-13%	-21%	2%	ShopperTrak RCT Corporation		
		Shoing \$store		6%	8%	2%	4%	1%	10%	11%	10%	2%	4%	8%	6%	5%	5%	Catalina		
		Decorants \$store		2%	5%	2%	3%	9%	39%	39%	-10%	-13%	-13%	-19%	-10%	-18%	-12%			
	Department stores	Consumer spend							-27%	-66%	-67%	-64%	-61%	-42%	-47%	-39%		Facteus		
		% change from baseline				4%	8%	8%	2%	-28%	-42%	-42%	-46%	-42%	-40%	-34%				
	Retail and Recreation	Google COVID-19	Community Mobility Reports								-33%	-82%	-85%	-81%	-83%	-80%		Google		
		Amusement Parks	Consumer Spend						-27%	-70%	-83%	-73%	-73%	86%	-78%	-51%				
		Tourist Attractions	Consumer Spend						-29%	-89%	-90%	-84%	-86%	86%	-85%	-84%				
	Airlines	United Airlines	TSA checkpoints						-12%	-43%	79%	88%	82%	84%	82%	80%	93%	TSA		
		Alaska Airlines	Consumer spend						-57%	-81%	-89%	-82%	-84%	90%	-85%	-88%				
		Top 5 US Airports (Int Passenger Arrivals)		-1%	-2%	-3%	-6%	-14%	-23%	-41%	-76%	-85%	-94%	-99%	-99%	-95%				
Lodging	US Occupancy		-1%	0%	2%	2%	-7%	-24%	-58%	-67%	-69%	-70%	64%	-62%	-59%					
	US ADR		1%	1%	1%	2%	-5%	-11%	-30%	-39%	-42%	-46%	-42%	-43%	-44%					
	Hilton	Google Search Traffic		-7%	1%	0%	7%	-3%	-14%	-38%	-55%	-60%	-66%	-55%	-51%	-49%	Google			
Online Travel	Marriott		-12%	-6%	-6%	-8%	-22%	-31%	-51%	-69%	-74%	-76%	-75%	-74%	-70%					
	Expedia		84%	55%	42%	46%	36%	48%	-49%	-67%	-72%	-70%	65%	-64%	-67%	-63%				
Live Events	Booking.com		13%	9%	8%	9%	-14%	30%	69%	75%	-75%	-79%	73%	-73%	-61%	-61%				
	TripAdvisor		35%	51%	46%	24%	14%	6%	63%	75%	-73%	-71%	64%	-60%	-61%	-61%	Sensor Tower			
	Live Nation	US App Downloads		73%	88%	18%	38%	15%	42%	90%	92%	83%	-91%	90%	97%	99%	95%			
Eventbrite		9%	5%	8%	11%	-18%	53%	89%	89%	-89%	-88%	88%	89%	-87%	-87%	83%				

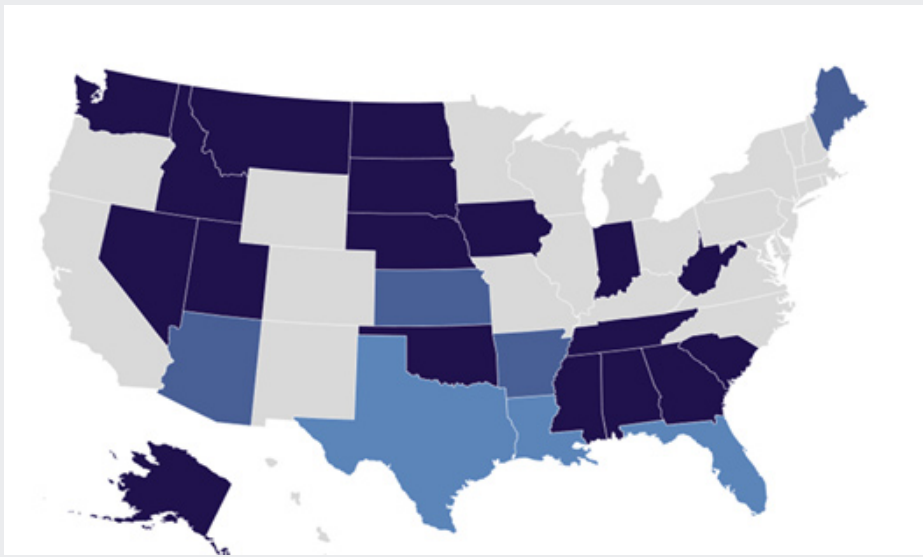
Source: Sources in exhibit, compiled by Goldman Sachs Global Investment Research

This week, our Restaurants Analyst Katherine Fogertey explains how the recent re-opening of dining rooms in restaurants could unfold in the coming weeks....

In-room dining and digital businesses are simultaneously rebounding. Our analysis suggests that nearly all restaurants are on track to have dining rooms reopened by the end of 2Q. Bloomin' Brands and Brinker International reported dine-in locations producing 20-25% SSS. At the same time, Limited Service app downloads are also growing. Starbucks has started to re-open its store base and with this, downloads of its app (which allows contact-less Mobile Order and Pay) has surged > 100% off March lows (now up 15% y/y). Chipotle has also seen app downloads grow >110% from pre COVID-19 levels.

Exhibit 7: The majority of the US dine-in is on pace to be opened by the end of the month

Navy: Restaurants open at 50% capacity limits; Medium Blue: States opening with social distancing guidelines, but not indicating a specific capacity; Light blue: Texas and Florida are operating at just 25% capacity.



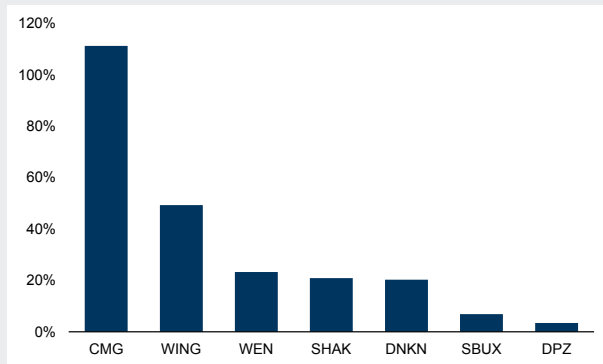
Source: State Government Websites, Data compiled by Goldman Sachs Global Investment Research, Company data, Goldman Sachs Global Investment Research

While Dine-In is reopening, we still see growing importance of Mobile Order Ahead

While consumers seem more willing to go out to eat, they are still leaning on mobile order technology for off premise consumption. Even as dining rooms reopen, one structural shift we expect will hold in restaurants throughout COVID-19 is consumers favoring opportunities to use mobile ordering for a contactless meal. As an example, in April, nearly 75% of the Starbucks locations in the US were closed, and only the drive through locations were open. But, over the past two weeks, Starbucks has started to re-open its store base and with this, downloads of its app (which allows Contactless Mobile Order and Pay) has surged > 100% off the March lows. It is also noteworthy that Chipotle has seen its app downloads >110% from levels prior to COVID-19 as consumers are seeking dining options where they can pick up (or deliver) and avoid waiting in crowded lines.

Exhibit 8: CMG and WING app downloads are more than 50% higher than prior to COVID-19

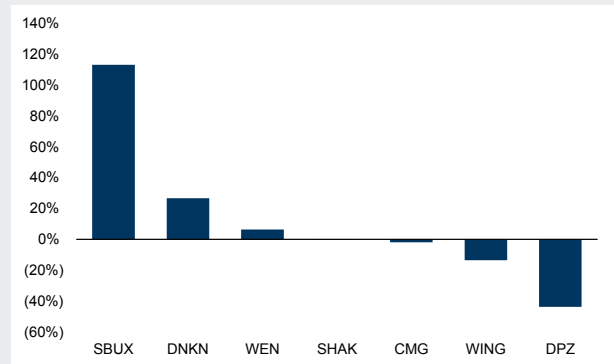
Weekly average downloads for last week compared to three month average Dec 2019 - Feb 2020



Source: Sensor Tower, Data compiled by Goldman Sachs Global Investment Research

Exhibit 9: SBUX app downloads have materially improved from late March levels as the company has reopened stores

Average daily app downloads for last week compared to last two weeks of March, 2020



Source: Sensor Tower, Data compiled by Goldman Sachs Global Investment Research

Business Activities

Business activities continue to be heavily impacted by COVID-19, including aerospace and autos. TSA passenger throughput is still down -93% y/y for May 4-10, and North America airline schedules 1-month out is down -61% y/y. Google search trends for automobiles have seen some rebound off the bottom, with traffic -6% y/y in the most recent week, compared to -29% at the beginning of April. Redfin reports that homes sold were -32% in the week of April 20, which was worse than prior weeks (-12%, -21% and -20% y/y in the three week before). As peoples' mobility continues to be restricted across a number of states, most industrials trade metrics are still down y/y, though we expect these activities to resume fairly quickly as restrictions begin to be lifted and consumer demand recovers.

Exhibit 10: Business Activity metrics are also falling to reflect the economic impact of the crisis

Basket	Sector	Company/App	Metric	y/y % change, unless otherwise noted												Source			
				Feb 3 - Feb 9	Feb 10 - Feb 16	Feb 17 - Feb 23	Feb 24 - Mar 1	Mar 2 - Mar 8	Mar 9 - Mar 15	Mar 16 - Mar 22	Mar 23 - Mar 29	Mar 30 - Apr 5	Apr 6 - Apr 12	Apr 13 - Apr 19	Apr 20 - Apr 26		Apr 27 - May 3	May 4 - May 10	
Business Activity	Industrial consumer		TSA passenger throughput					-12%	-23%	-69%	-90%	-94%	-96%	-95%	-94%	-93%	TSA		
			N.A. Airline forward schedules (1 month out)							-27%							OAG		
			Actual air traffic growth							-53%								IATA	
			Passenger aircraft in service															Cirium	
		3M	Monthly sales															Company data	
	Autos		US Refinery Utilization %															EIA	
			Auto SAAR															Wards	
			Domestic ethanol blending															EIA	
			Google Search Traffic															Google	
			Mortgage Applications															Mortgage Bankers Associates	
	Industrial housing		State Permits															Census Bureau	
			New Home For-Sale Inventory (Months of Supply, SAAR)															Census Bureau	
			Existing Home For-Sale Inventory (Months of Supply, SAAR)															National Association of Realtors (NAR)	
			New Home Prices (Median)															Census Bureau	
			Existing Home Prices (Median)															NAR	
			New Home Sales (Units, SAAR)															Census Bureau	
			Existing Home Sales (Units, SAAR)															NAR	
			Texas cement shipments																Refidin
		Online Real Estate	Redfin	Homes Sold															Thumbtack
			Thumbtack	Customer Projects on Home Construction															Thumbtack
	Thumbtack		Customer Projects on Moving															Thumbtack	
	Industrial equipment	Caterpillar	Retail sales															Company data	
		Boeing	New aircraft orders															Company data	
			US industrial distributor sales (avg.)															Company data	
		Komtrax	Komtrax operating hours															Komtrax	
Michelin		North America replacement tire volumes															Company data		
Industrial trade		Weekly rail economically sensitive carloads (US rail)															AAR		
		Weekly rail intermodal carloads (US rail)															AAR		
		Truck spot pricing															Truckstop		
		DAT lead to win ratio															DAT		
		Cass freight index															CASS		
Multi-Industry		*Big 3 west coast ports inbound loaded containers															Port data		
	FAST	Daily sales															Company data		
	NSM	Daily sales															Company data		
	GWW	Daily sales															Company data		

Source: Sources in exhibit, Goldman Sachs Global Investment Research

The GS Reopening Scale

To look at all these metrics in aggregate and quantify where consumers are on the path to economic recovery, we created a composite scale that is based on the inverse average of growth in all the sectors within “Stay at Home” categories and the normal average of “Back to Normal” categories relative to the week of February 3rd, reflecting where the consumer is between the two categories. We index a value of 100 to consumer activity in the week of February 3rd, before the impact of COVID-19 in the US, and the minimum value that the composite scale has reached is 36. We then translate the composite scale onto a GS reopening scale of 1-10 (Exhibit 11), where values less than or equal to 50 represent a 1 and a return to Feb 3rd levels would represent a 10.

The GS reopening scale, based on the trajectory of the Composite Scale (Exhibit 12), first reached 1 in the week of March 16th, where it has remained for the 7 weeks since, indicating that consumers are still at the trough of impacts from COVID-19. However, despite the Reopening Scale remaining at 1, we’ve seen the composite scale begin to recover slightly from troughs we saw at the end of March and in early April, indicating that consumer behavior is heading in the right direction. We expect that as states begin to reopen for business these metrics will slowly begin to recover more meaningfully, bringing to scale back up. However, we would expect the recovery to a 10 to take at least a number of months, during which period the “Stay at Home” category will show significantly slower growth, while the “Back to Normal” category will likely moderate declines as people resume daily activities of dining, commuting and travel, among

others.

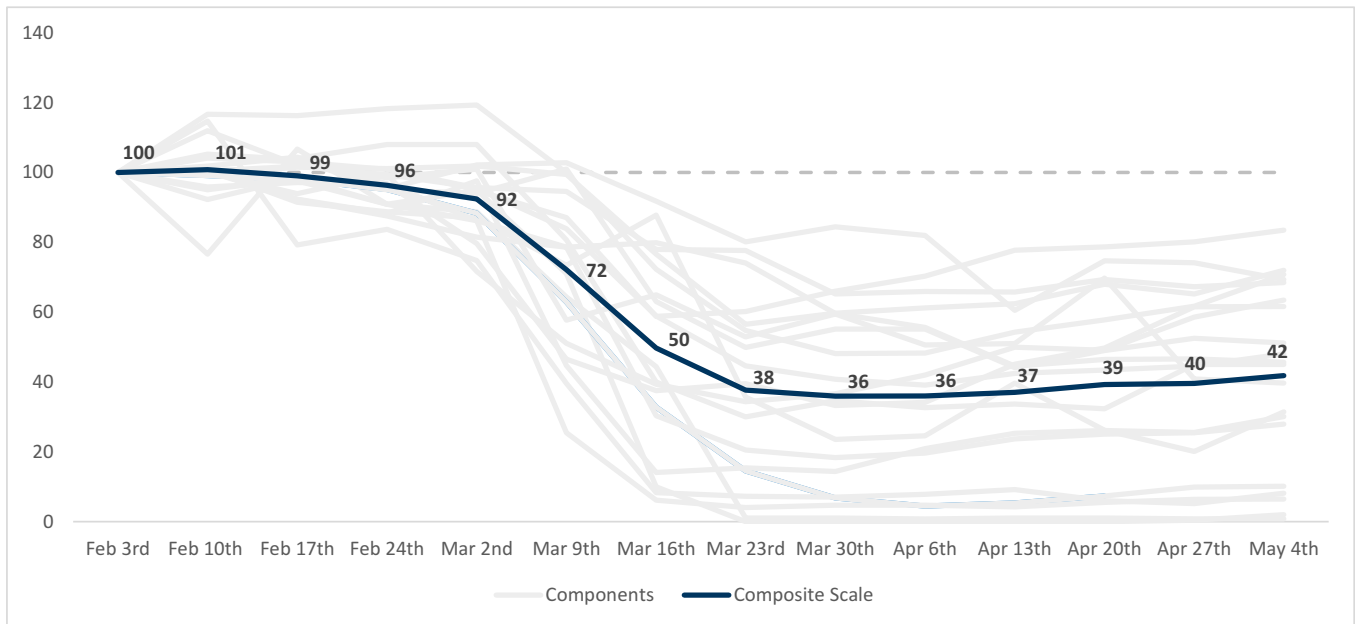
Exhibit 11: Composite scale to Reopening Scale

Composite Scale	Reopening Scale
100+	10
91-99	9
86-90	8
81-85	7
76-80	6
71-75	5
66-70	4
61-65	3
51-60	2
≤50	1

Source: Goldman Sachs Global Investment Research

Exhibit 12: Composite Scale, Feb. 3 - May 10th

Date on x-axis represents first day of week measured



This exhibit summarizes data from sources listed in Exhibits 5, 6 and 10.

Source: Goldman Sachs Global Investment Research

We plan to update and refine this data weekly as a tool to measure the pace of reopening, measure consumer behavior and highlight sectors and companies that may be benefiting or disproportionately impacted from the shape of that process.

Conference Q&A Insights

On Monday, May 11, we hosted a conference call to present the first edition of this series: Measuring the Reopening of America: Introducing the GS US Reopening Scale: Starting at 1 (Week of May 6). While there were more

investor questions sent in than we could address during the time allowed, we attempt to address some additional ones here.

What do you see as the greatest investor misconception about how your sector will turn back on?

Brett Feldman, Telecom & Cable: Based on my conversations, investors tend to discuss recovery as a linear process, and the debate is about whether it is shaped like a V or a U or a swoosh. Regarding the telecom and cable sectors, there does not seem to be a consensus as to whether investors should be positioned for a significant second wave of the disease that could change the shape of the recovery, or whether this would materially impact investors' views on the crisis's long-term impacts on key sub-sectors (wireless, broadband, pay-TV, SMB, etc.). Also, there has so far been limited conversations about the upcoming US election and how or whether it could impact investors' base cases for the post-crisis industry landscape, especially if there is a change in the administration and therefore new political leadership at the FCC and DOJ.

Kate McShane, Hardlines Retail: Based on client conversations, most are focused on 2021. However, we think there is a good degree of risk with the more cyclical retail names as we enter the back half of the year considering: 1) the level of discretionary spend in the back half, 2) a period of likely heavier mark downs due to heavier inventories, weaker competitors, etc. and 3) possible pull forward of sales if retailers start to liquidate.

Jordan Alliger, Airfreight & Logistics: As it relates to transports, I would say broadly that investors view that reopening equals the economy beginning to emerge from the downturn, but if the retail or industrial sectors emerge at a very slow pace and we don't get that restocking/replenishment needed, it could pose an issue for our transport outlook as we move into 2021 where most investors expect volumes and profits to be better.

Alex Walvis, Specialty Retail: We think the biggest risks are: 1) The degree of fixed cost deleverage, which is important if stores open well below prior sales productivities, and 2) the likelihood that changes in consumer behavior are more durable. For example, the shift to value retail, shift to e-commerce, less spending on apparel if people go out less / work from home more.

Bonnie Herzog, Beverages & Tobacco: While we think investors are largely accounting for the pull back in on-premise / immediate consumption now that all our covered names have reported calendar Q1 results and provided directional color on trends-to-date in Q2, we still think there's a good degree of risk that there isn't full appreciation for the potential for a prolonged period of downtrading in 2021 as a result of the recession. This could be particularly impactful for names with premiumized product mixes – although conversely it could be a tailwind for companies whose products typically trade at a discount to their categories. We're also not sure investors are contemplating the risk that margins stay depressed even after Q2 as we think companies are likely to step-up investment spend ahead of a broader topline recovery, the benefits of which will likely be realized with a lag.

Katherine Fogertey, Restaurants: From a Restaurants perspective, investors are highly focused on several items: 1) Will dining rooms remain open or will there will be closures? 2) How does the recovery in dine-in traffic affect the off-premise business? 3) How long will supply chain headwinds persist and what is the risk of supply outages? 4) What is the unit growth opportunity for all the chains coming out of the extreme pressures on the sector? If independents do not re-open, the chains should have better site selection and share gain opportunities, especially those with digital advantages. As for the greatest misconception, we believe it lies in the recovery in breakfast and coffee. While the buy-side consensus is that breakfast will remain under structural pressure for the next year or more as consumers work from home, we see share gain opportunities within the category that could surprise against bearish sentiment. With Starbucks reopening c. 75% of closed stores in the US, we have seen their own app downloads surge > 100% off March lows.

How fast will advertising come back and where will the spending be placed (ie: TV, Out of Home etc?)

Drew Borst, Media & Entertainment: Past recessions show that the advertising recovery is fairly coincident with the economic recovery, at least on a quarterly basis. When key macroeconomic variables – especially GDP, industrial production and employment – start to turn, advertising will turn with it. This recession/recovery may look a little different than the past ones. For example, local media (TV stations, radio stations and outdoor) have relatively high exposure to SMEs that may take longer to recover than the large corporations that buy national advertising. Since states are resuming economic activity at different times, this will impact the timing of local media advertising recovery on a state by state basis. On national media advertising, particularly broadcast and cable networks, Fortune 500 demand should recover with the economy, as long as the programming supply recovers, namely major sports and scripted and unscripted shows. Production activity has been halted for several months now and the inventory of fresh episodes is largely depleted.

Do we have a delayed white collar unemployment rate vs. the huge Q1 hit to low end service/blue collar jobs? If so is there a consensus on the size of the white collar layoff echo?

This section is authored by
GS Economist Joseph
Briggs

Joseph Briggs, Economist: We expect a 15% decline in professional and business services revenue due to lower demand from directly affected industries (Exhibit 2), resulting in layoff rates of 4-7% for white collar workers (Exhibit 4). White collar job losses were slightly higher than expected in last Friday's (5/8) jobs report, suggesting some upside risk in the layoff rate for white collar workers.

Do you have any data on when and how the stimulus checks will be spent? For example, what % on savings vs essentials (food, shelter, etc) vs disposable?

Joseph Briggs: This NBER paper shows that, on average, households spend \$0.25-\$0.35 per dollar in the first 10 days following receipt of stimulus cheques. Spending is spread roughly evenly on food, household goods, nondurables, and bill payments. Very little was spent on durable goods, likely reflecting physical barriers to purchases.

What percentage of laid off or furloughed workers as a result of Covid-19 will be hired back by year-end?

Joseph Briggs: We currently expect that employment will drop by about 40 million in Q2. However, the high number of the temporary layoffs bodes well for a quick recovery, and we expect that about 75% of these jobs will come back by the end of the year.

Should we see higher RevPAR in hotels where conventions are more of the business?

Stephen Grambling, Lodging, Leisure & Gaming: We generally anticipate urban focused hotels with greater international business travel & convention mix will take the longest to recover and see the sharpest downturn. While forward group trends have held up relatively well into 2H20 and 2021, much of the demand is unlikely to materialize as social distancing efforts are implemented, limiting crowded meetings. Furthermore, reduced air capacity will limit higher priced, international inbound visitation that usually pushes up nightly rates in these hotels.

Airlines, United in particular, has announced significant headcount reductions and reductions in flights. What is the risk that the airline industry will be nationalized?

Catie O'Brien, Airlines & Aircraft Lessors: The US government has already stepped in and provided material funding to the US airlines, via both the \$50 billion Payroll Support Program (70% grants/30% long-term, low cost loans) and \$50 billion under a secured loan/loan guarantee program. Both programs result in the government being issued warrants, with the two programs combined resulting in the airlines that see the most dilution potentially having a mid-single digit government stake, per our calculation. If demand does not rebound through the end of 2020 and into 2021, airlines will need to right-size operations (including reducing flights and headcount) to better match supply to demand in order to reduce cash burn. Per our current liquidity base case, we do not expect the government to be required to extend additional funds. However, if the duration of the demand downturn is significantly longer than we are expecting or if the airlines are unable to access the capital markets to raise additional financing of their own, this could change our base case expectation around the need for further government aid.

Disclosure Appendix

Reg AC

We, Heath P. Terry, CFA, Noah Poponak, CFA and Jason English, hereby certify that all of the views expressed in this report accurately reflect our personal views about the subject company or companies and its or their securities. We also certify that no part of our compensation was, is or will be, directly or indirectly, related to the specific recommendations or views expressed in this report.

I, Joseph Briggs, hereby certify that all of the views expressed in this report accurately reflect my personal views, which have not been influenced by considerations of the firm's business or client relationships.

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America- Non-Discretionary Broadlines Retail & Supermarkets: Aramark Holdings.

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America-Retail Specialty Hardlines, Supermarkets and Discount Stores: Advance Auto Parts Inc., AutoZone Inc., Bed Bath & Beyond Inc., Best Buy Co., BJ's Wholesale Club Holdings, Container Store Group, Costco Wholesale, Dick's Sporting Goods, Floor & Decor Holdings, Genuine Parts Co., Home Depot Inc., Lowe's Cos., Michaels Cos., National Vision Holdings, O'Reilly Automotive Inc., RH, Target Corp., Tractor Supply Co., Ulta Beauty Inc., Walmart Inc., Williams-Sonoma Inc..

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