## Searching for the End of Uncertainty

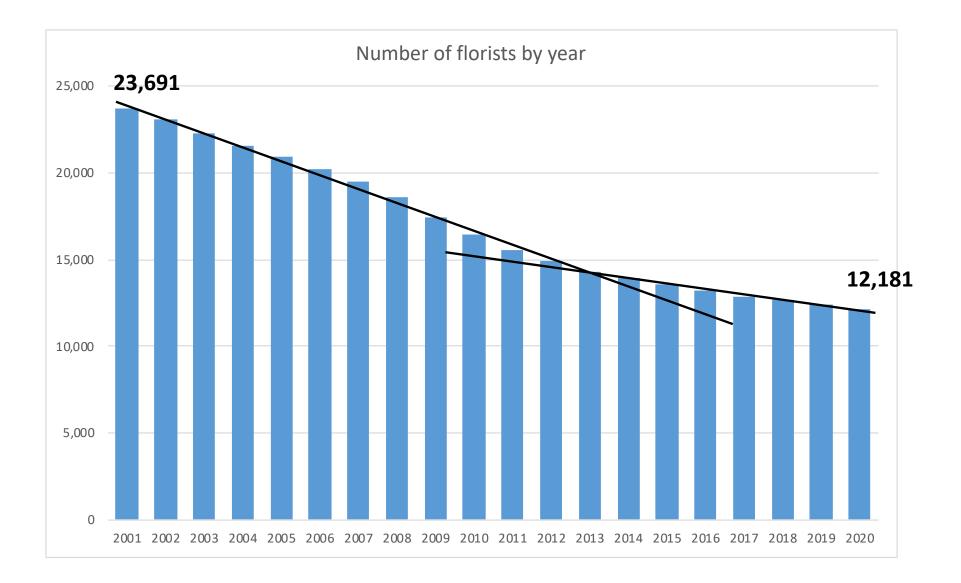
Dr. Charlie Hall, Ellison Chair of International Horticulture Texas A&M University

### Outline for today

**1.** What was happening in the floral industry pre-COVID?

2. How did COVID affect the industry in 2020 & 2021?

## Take me back to those good old (pre-COVID) days again.



### Industry study of floral industry driving forces (pre-COVID)





5

Supermarkets – imports, consolidation, mass prestige

Increased usage of online floral channels

Oirect-to-consumer channels gain traction

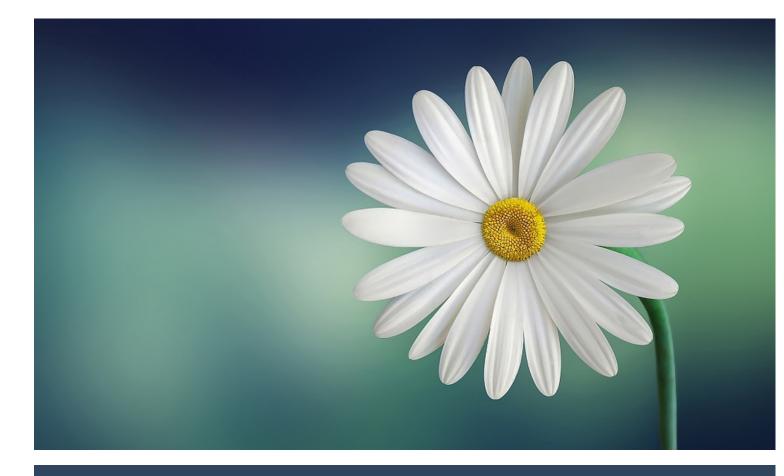
Demographic shifts in knowledge and perceptions

Proliferation of event, studio, & lifestyle florists

Changes in spending on funeral and wedding flowers

Rate of technology adoption is mixed

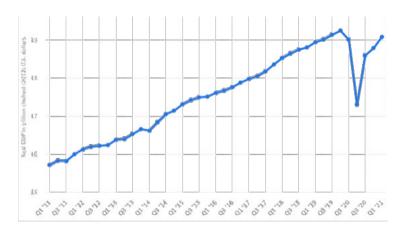
Advances in supply chain logistics/transportation



## Causes for concern (pre-COVID)

- The lack of relevant and timely data
- Industry operates as silos
- Current inventory management practices
- Resistance to change
- The availability and retention of labor
- Lack of succession planning

# What was the state of the economy PRE-COVID?



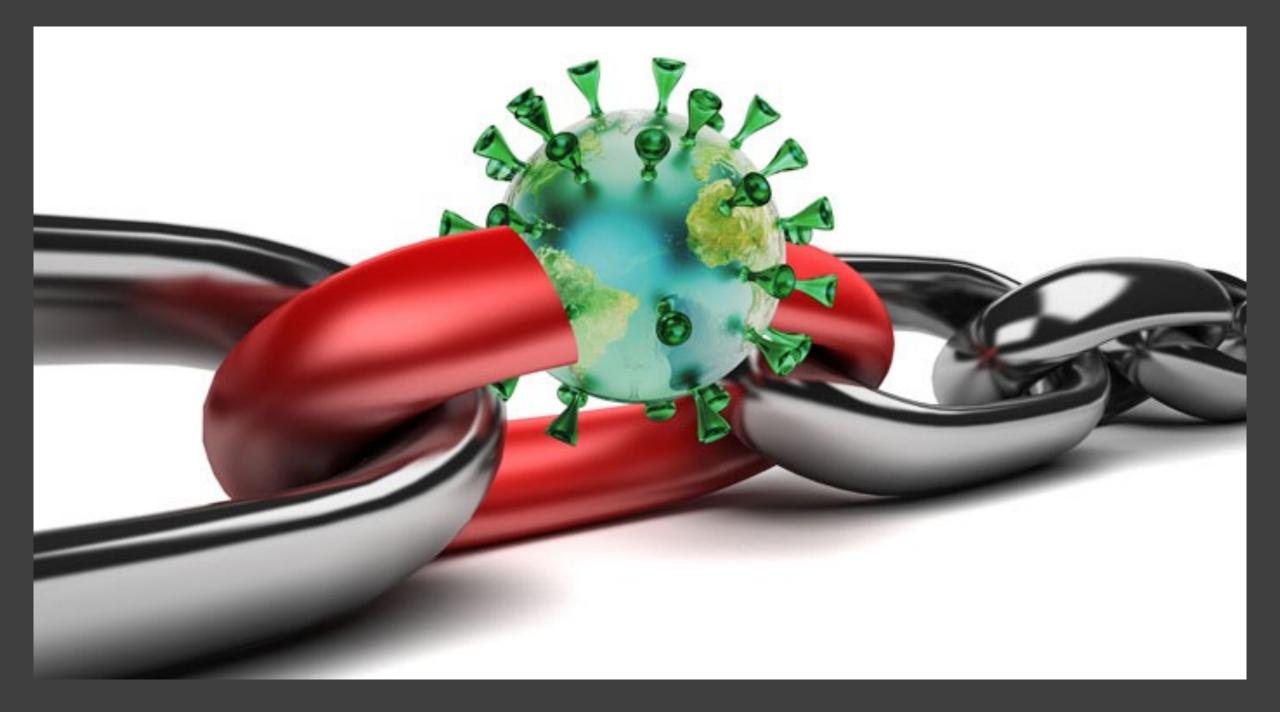
#### • 128 months

- Housing was peaking
- Inflation was in check
- Consumption steady
- Job growth slowing
- Stock market steady



### Then, enter...

## CORONAVIRUS (COVID-19)



#### Supply Chain Pressure Gauge

·									-												
Indicator		Feb-20	Mar-20	Apr-20	May-20	Jun-20	Jul-20	Aug-20	Sep-20	Oct-20	Nov-20	Dec-20	Jan-21	Feb-21	Mar-21	Apr-21	May-21	Jun-21	Jul-21	Aug-21	Sep-21
	ISM Manufacturing Supplier Deliveries	57.3	65.0	76.0	68.0	56.9	55.8	58.2	59.0	60.5	61.7	67.7	68.2	72.0	76.6	75.0	78.8	75.1	72.5	69.5	
Time	ISM Services Supplier Deliveries	52.4	62.1	78.3	67.0	57.5	55.2	60.5	54.9	56.2	57.0	62.8	57.8	60.8	61.0	66.1	70.4	68.5	72.0	69.6	
	Ships at Anchor-LA & Long Beach (Mo. Avg.)	0.0	0.0	0.0	0.0	0.0	0.5	2.0	1.5	4.3	10.0	22.2	32.1	32.6	26.5	21.5	18.9	13.8	21.4	33.4	40.6
	Taiwan Electronic Product Exports (YoY)	46.2%	18.1%	24.3%	13.2%	23.8%	15.6%	19.1%	26.1%	21.8%	19.5%	22.2%	47.5%	14.4%	24.5%	34.0%	29.6%	29.8%	33.6%	21.9%	
Volume	Cass Freight Index (YoY)	-7.5%	-9.2%	-22.7%	-23.6%	-17.8%	-13.1%	-7.6%	-1.8%	2.4%	2.7%	6.7%	8.6%	4.1%	10.0%	27.6%	35.3%	26.8%	15.6%	12.3%	
	Unfilled Orders (3-Mo. Ann.)	7.6%	3.7%	0.9%	-2.2%	-0.3%	2.8%	4.0%	5.1%	6.2%	7.4%	6.7%	8.4%	10.8%	14.7%	15.1%	15.3%	13.2%	13.3%		
	World Container Index (WCI) (USD/40ft Box)	\$1,633	\$1,520	\$1,500	\$1,549	\$1,788	\$2,009	\$2,144	\$2,541	\$2,592	\$2,806	\$3,955	\$5,263	\$5,227	\$4,991	\$4,919	\$5,898	\$7,052	\$8,879	\$9,556	\$10,036
Price	WCI: Shanghai-Los Angeles (USD/40ft Box)	\$1,525	\$1,433	\$1,615	\$1,718	\$2,343	\$2,923	\$3,283	\$3,934	\$4,072	\$4,047	\$4,118	\$4,186	\$4,292	\$4,234	\$4,267	\$5,453	\$6,793	\$9,797	\$10,721	\$11,539
Price	PPI Transp. & Ware. of Goods (3-Mo. Ann.)	0.3%	-1.9%	-7.6%	-12.2%	-8.8%	1.0%	9.0%	8.0%	6.5%	7.8%	10.2%	10.7%	13.0%	16.3%	16.5%	20.7%	16.0%	12.6%	6.5%	
	Dry Van Rate Per Mile (YoY of 4-Wk. Mov. Avg.)	-3.3%	-2.3%	4.1%	-3.6%	-4.5%	3.4%	20.2%	33.0%	41.3%	48.7%	48.1%	39.0%	36.5%	49.5%	51.4%	70.0%	69.2%	43.7%	28.6%	22.9%
	Inventory-to-Sales Ratio (All Businesses)	1.42	1.50	1.73	1.55	1.41	1.36	1.35	1.35	1.35	1.35	1.35	1.30	1.33	1.26	1.25	1.26	1.25			
	ISM Manufacturing Inventories Index	46.5	46.9	49.7	50.4	50.5	47	44.4	47.1	51.6	50.8	51	50.8	49.7	50.8	46.5	50.8	51.1	48.9	54.2	
Inventory	ISM Manufacturing Consumer Inventories	41.8	43.4	48.8	46.2	44.6	41.6	38.1	37.9	36.7	36.3	37.9	33.1	32.5	29.9	28.4	28.0	30.8	25.0	30.2	
	Inventory Too Low (Net % of Firms)	-3.5%	-1.5%	-6.6%	-4.5%	1.2%	1.3%	2.7%	4.8%	4.4%	4.9%	6.5%	5.3%	4.5%	2.5%	7.0%	8.0%	11.0%	12.0%	11.0%	
lahar	Production & Manuf. Posts (vs. Feb. 2020)	0.2%	1.3%	-30.0%	-31.6%	-23.7%	-13.8%	-6.1%	4.2%	12.9%	20.6%	27.4%	26.3%	38.2%	46.8%	63.5%	74.8%	76.7%	84.0%	78.0%	
Labor	Loading & Stocking Posts (vs. Feb. 2020)	1.4%	-0.4%	-32.5%	-32.7%	-17.6%	-0.8%	4.6%	12.3%	28.2%	38.8%	39.0%	26.3%	38.9%	46.4%	61.7%	72.7%	76.6%	90.2%	72.0%	

Source: ISM, Bloomberg LP, Taiwan Ministry of Finance, U.S. Department of Labor, Drewry, U.S. Department of Commerce, NFIB, Indeed.com and Wells Fargo Securities





- Retirements
- Schools shut down
- Teams harder to form
- Requirements

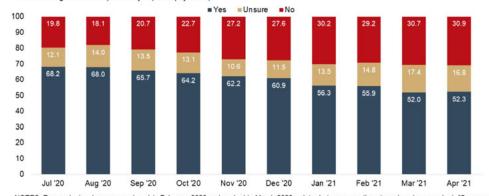
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- No-touch freight
- Standardize boxes
- More pay
- Higher rates



#### "The Great Re-evaluation" "The Great Resignation"

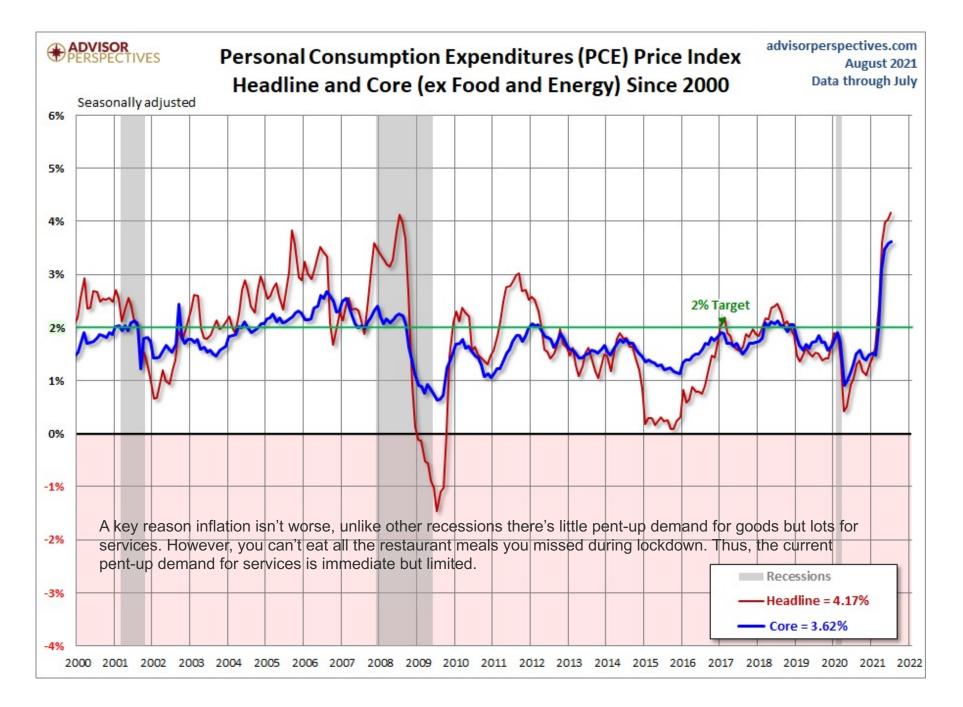
Real-Time Population Survey Indicates Reluctance to Return to Previous Position Percent willing to return to previous job (same pay/hours)



NOTES: Respondents who were employed in February 2020 and worked in March 2020 or later but are currently not employed were asked, "Suppose that tomorrow your old employer gives you the option to return to work and resume the same activities you were doing before at the same rate of pay. In this scenario, would you be willing to return to work tomorrow?" The bars plot the three-month moving average of the share of responses. SOURCES: Real-Time Population Survey (RPS); "Real-Time Labor Market Estimates During the 2020 Coronavirus Outbreak," by Alexander Bick and Adam Blandin, working paper, revised May 2021.

Federal Reserve Bank of Dallas





Durable goods are goods that have an average useful life of at least 3 years.

Nondurable goods are goods that have an average useful life of less than 3 years.

#### Services are

commodities that cannot be stored or inventoried and that are usually consumed at the place and time of purchase.

#### **Consumer High-Frequency Monthly Dashboard**

All Indicators either Month-over-Month Percent Change (MoM) or Monthly Difference (MD)

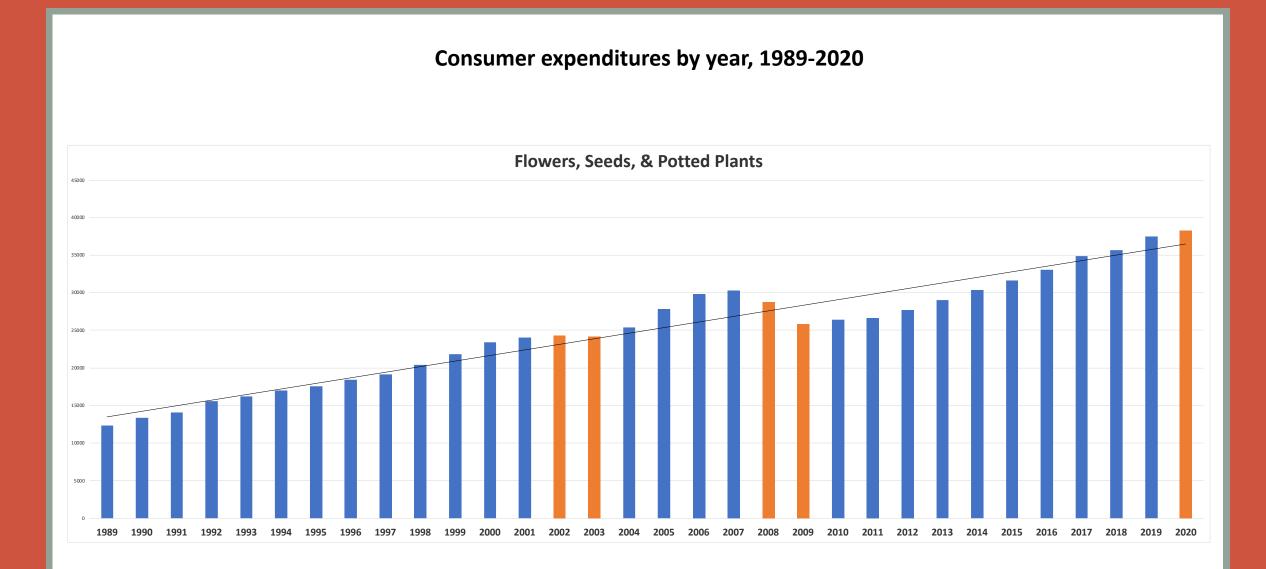
								2												
Indicator	Feb-20	Mar-20	Apr-20	May-20	Jun-20	Jul-20	Aug-20	Sep-20	Oct-20	Nov-20	Dec-20	Jan-21	Feb-21	Mar-21	Apr-21	May-21	Jun-21	Jul-21	Aug-21	Sep-21
Retail Sales (MoM)	-0.2%	-8.6%	-14.7%	18.2%	8.7%	1.4%	0.8%	2.2%	0.1%	-1.4%	-1.2%	7.6%	-2.9%	11.3%	0.9%	-1.4%	0.9%	-1.8%	0.7%	
PCE (MoM)	0.1%	-6.9%	-12.6%	8.6%	6.4%	1.7%	1.0%	1.5%	0.4%	-0.5%	-0.5%	3.3%	-1.1%	5.2%	1.0%	0.1%	1.1%	0.3%		
PCE on Goods (MoM)	-0.2%	-1.8%	-13.1%	14.0%	6.7%	2.0%	0.4%	1.8%	0.1%	-1.2%	-1.9%	7.9%	-2.9%	10.7%	0.4%	-1.8%	1.0%	-1.1%		
PCE on Services (MoM)	0.3%	-9.2%	-12.4%	6.0%	6.2%	1.6%	1.3%	1.3%	0.6%	-0.2%	0.2%	0.9%	-0.1%	2.3%	1.4%	1.1%	1.1%	1.0%		
Unemployment Benefits Paid (MD)	-\$0.1B	\$1.2B	\$44.2B	\$45.3B	\$22.0B	-\$6.3B	-\$55.6B	-\$19.5B	-\$7.9B	-\$1.2B	\$2.3B	\$6.4B	\$10.2B	\$4.6B	-\$11.1B	-\$2.6B	\$4.0B	-\$10.8B	\$0.9B	
Economic Impact Payments Paid (MD)	-	-	-	-	-	-	-	-	-	-	\$0.4B	\$130.9B	-\$127.6B	\$313.9B	-\$264.5B	-\$45.2B	-\$1.3B	-\$3.6B	-\$0.8B	
Daily New COVID Cases (MD)	0.0K	6.2K	23.4K	-6.5K	5.0K	34.0K	-15.0K	-6.8K	22.0K	87.9K	57.2K	-9.0K	-112.6K	-27.3K	4.4K	-33.3K	-16.3K	29.1K	94.8K	16.6K
U.S. Stringency Index (MD)	5.6	40.0	27.1	0.0	-2.0	-2.5	-1.1	-2.7	-0.4	5.9	2.0	-0.2	-3.3	-4.9	-6.6	-5.1	3.1	-2.6	2.2	3.5
Consumer Confidence Index (MD)	2.2	-13.8	-33.1	0.2	12.4	-6.6	-5.4	15.0	0.1	-8.5	-5.8	0.0	8.1	19.7	2.6	2.5	8.9	-3.8	-11.3	
Consumer Sentiment Index (MD)	1.2	-11.9	-17.3	0.5	5.8	-5.6	1.6	6.3	1.4	-4.9	3.8	-1.7	-2.2	8.1	3.4	-5.4	2.6	-4.3	-10.9	
Total BEA Credit Card Spending (MoM)		-4.5%	-11.1%	13.0%	7.7%	-2.0%	0.6%	0.4%	-3.9%	1.1%	1.4%	7.0%	-6.4%	8.4%	1.7%	-1.8%	2.9%	-0.6%	-0.3%	
Chicago Fed Adv. Retail Sales Ex-Auto (MoM)	-0.4%	-4.3%	-15.1%	12.2%	8.4%	2.0%	1.1%	1.6%	0.1%	-1.2%	-2.1%	8.3%	-2.7%	9.8%	-0.1%	-0.4%	1.6%	-0.4%	1.3%	
Johnson Redbook Sales (MoM)	-0.2%	1.0%	-7.5%	-3.9%	-1.9%	1.3%	3.3%	-0.9%	0.7%	-0.4%	-1.3%	-1.6%	-1.1%	-17.8%	-23.4%	27.0%	11.9%	0.6%	-0.4%	9.4%
Google Retail & Rec. Locations (MD)	-	-52.0	6.0	11.0	13.0	-4.0	-1.0	1.0	-2.0	-5.0	12.0	-18.0	11.0	10.0	-2.0	0.0	7.0	-4.0	-1.0	-1.0
Google Grocery Visits (MD)		-23.0	7.0	5.0	5.0	-3.0	-5.0	2.0	7.0	-14.0	31.0	-35.0	6.0	8.0	1.0	1.0	4.0	1.0	-1.0	-2.0
Auto Sales (MD)	0.0K	-5.5K	-2.8K	3.6K	0.8K	1.5K	0.7K	1.2K	-0.1K	-0.7K	0.7K	0.4K	-1.0K	2.1K	0.8K	-1.5K	-1.6K	-0.6K	-1.7K	
National Avg. Retail Gas Prices (MoM)	-4.0%	-9.2%	-17.1%	2.3%	11.2%	4.3%	0.1%	0.3%	-1.2%	-2.3%	3.9%	7.1%	8.4%	11.0%	1.3%	4.6%	2.2%	2.5%	0.7%	0.3%
OpenTable Seated Diners (MD)	-	-58.4	-43.0	7.8	24.4	6.6	9.0	10.9	0.4	-10.6	-10.5	5.2	9.2	15.7	7.6	11.5	3.3	4.9	-5.1	2.0
TSA Throughput (MD)	160K	-1,025K	-1,024K	122K	252K	186K	31K	16K	111K	23K	1K	-90K	112K	354K	167K	215K	281K	148K	-184K	-187K
Cruise Ships Underway (MD)	-5.0	-45.0	-39.0	-3.0	-18.0	-1.0	0.0	-9.0	2.0	4.0	8.0	-5.0	-4.0	-3.0	0.0	10.0	6.0	21.0	18.0	7.6
Hotel Occupancy Rate (MD)	9.1	-25.1	-14.4	8.7	9.1	4.8	1.6	-0.4	0.0	-8.0	-3.8	2.8	6.0	9.3	2.9	1.8	7.2	2.6	-4.4	-3.3
NYC Subway Entrances/Exits (MD)	-	-	-1,990K	102K	305K	252K	87K	291K	121K	-93K	-52K	-76K	72K	239K	139K	110K	297K	-22K	-17K	83K
Google Transit Station Visits (MD)	-	-56.0	2.0	17.0	0.0	2.0	-4.0	-1.0	10.0	-16.0	-3.0	3.0	10.0	0.0	6.0	-10.0	12.0	15.0	-17.0	10.0
Google Workplace Visits (MD)	-	-53.0	2.0	31.0	-21.0	0.0	2.0	3.0	22.0	-24.0	-18.0	34.0	5.0	-18.0	3.0	-44.0	40.0	22.0	-20.0	21.0
Google Residential Locations (MD)	-	22.0	-1.0	-14.0	6.0	-1.0	-1.0	-1.0	-5.0	9.0	3.0	-8.0	-3.0	4.0	-2.0	9.0	-9.0	-6.0	6.0	-5.0

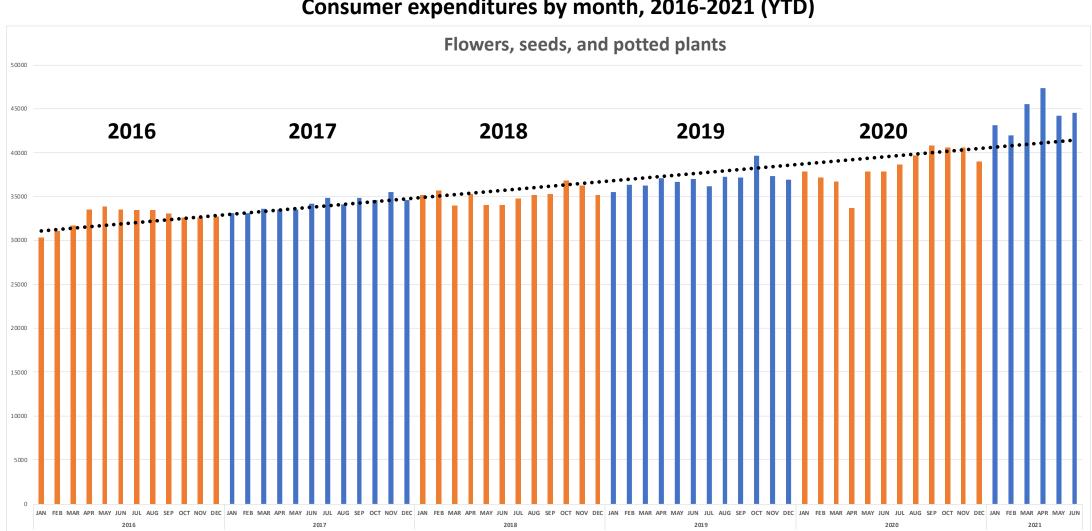


Source: U.S. Department of Commerce, U.S. Department of Treasury, The Conference Board, The University of Michigan, Redbook Research Inc., Google Inc., WARD's Automotive Group, OpenTable, TSA, CoStar, Bloomberg LP and Wells Fargo Securities

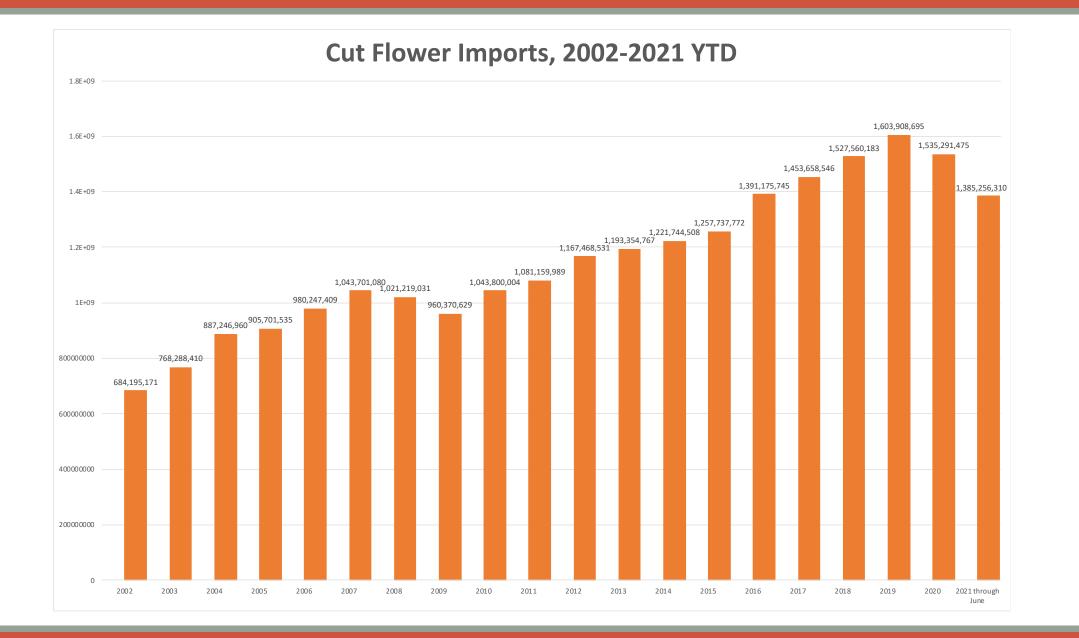


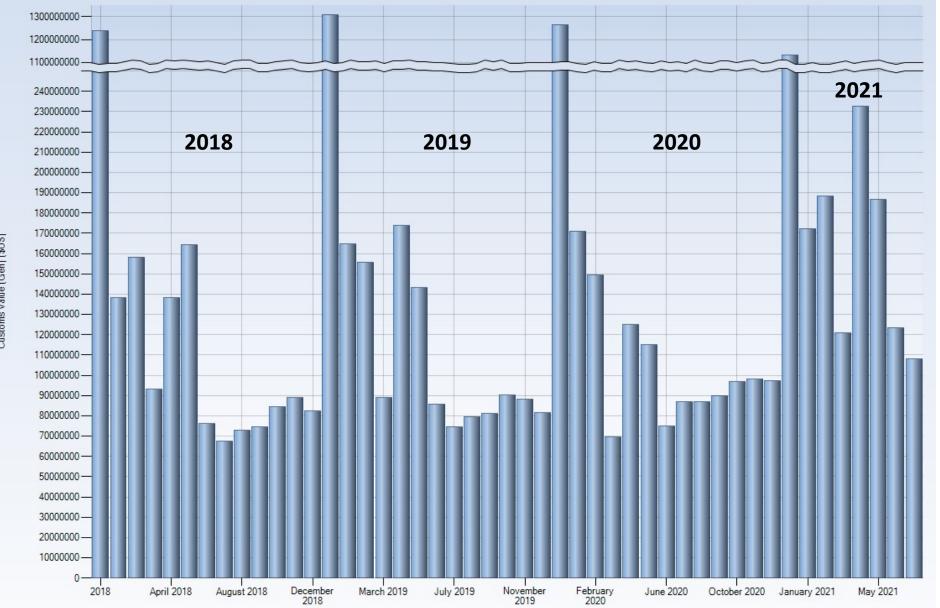
How have these supply chain disruptions and inflationary pressures affected floral?





#### Consumer expenditures by month, 2016-2021 (YTD)





Customs Value (Gen) (\$US)

### COVID effects on the... grower sector

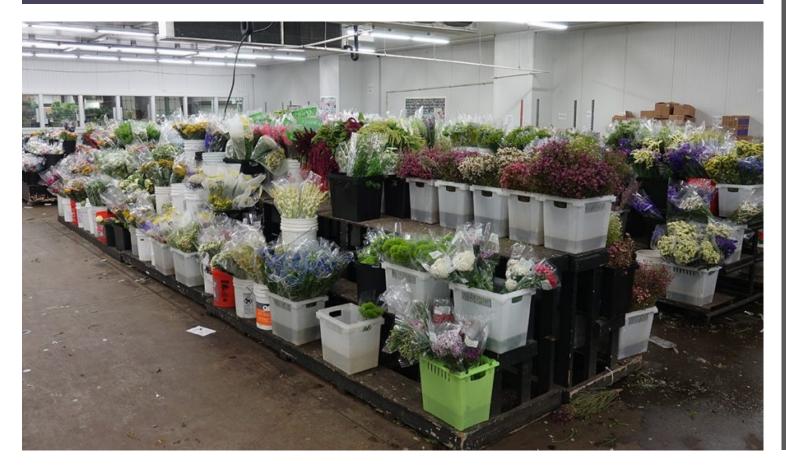


- Labor -- difficult to find.
- Shrink was high early on.
- Delayed delivery on inputs.
- Freight is expensive.
- Fewer new products coming online.
- Less discounting going on.
- Some went online and some found new partners.
- Production costs increasing.

#### Index of Prices Paid by Growers in the Green Industry, 2007-2022 (2007=100).

COST CATEGORY	WEIGHT	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021f	2022f
Containers & other plastics	10.24%	100	109.8	98.0	107.9	117.2	119.9	124.1	129.3	116.7	111.2	117.0	122.7	117.6	117.8	143.5	150.7
Media (peat-based)	3.94%	100	103.2	90.8	96.9	95.3	95.5	99.1	97.6	110.9	124.9	117.2	116.3	114.8	115.4	121.2	124.8
Propagative materials	23.62%	100	102.8	106.7	108.4	111.9	114.2	115.9	117.8	117.9	119.5	122.0	125.0	128.1	131.9	139.9	142.7
Plant protection products	1.57%	100	107.3	114.9	111.5	112.1	118.2	121.6	122.8	119.4	120.7	116.6	112.9	113.1	111.3	115.8	118.1
Fertilizers	1.57%	100	181.7	127.7	117.1	152.4	154.6	147.4	144.1	132.9	109.5	100.9	101.7	106.9	110.5	117.1	121.8
Labor	34.65%	100	104.5	106.0	107.0	108.2	111.4	115.0	116.9	121.1	125.4	128.9	136.7	144.2	146.3	150.8	154.6
Fuel/Energy	3.94%	100	130.2	86.6	107.4	137.2	136.2	135.0	134.3	87.1	76.3	86.7	97.5	101.0	98.5	104.1	106.2
Supplies & repairs	3.15%	100	102.9	104.9	106.9	111.2	114.5	115.5	117.6	117.7	117.9	120.0	124.1	127.6	129.6	145.2	148.1
Freight and trucking	17.32%	100	102.2	97.3	98.8	103.2	106.8	108.4	113.8	118.3	117.6	119.8	130.0	130.5	124.9	141.1	145.3
Weighted index (2007=100)		100	106.4	102.9	105.9	110.6	113.4	115.8	118.3	117.7	118.7	121.4	127.7	130.8	131.5	141.5	145.4
YOY increase/decrease			6.41%	-3.27%	2.84%	4.50%	2.50%	2.14%	2.16%	-0.50%	0.81%	2.33%	5.14%	2.48%	0.54%	7.59%	2.73%

## COVID effects on the... wholesale florist sector



- Contactless delivery.
- Longer advance planning.
- Number of flights decreased.
- Strategic grower partnerships.
- Demand increased in spite of wedding/event cancellations.
- Strong interest in local & sustainability.
- Non-traditional flowers used.
- More technology usage.
- B2B technologies expedited online.

### COVID effects on the... florist sector



- Hard time finding employees.
- Seeing "at home" décor increase.
- Online sales increased.
- Supply issues remain; subs are a norm for the time being.
- Constriction in product palette.
- Traffic count and \$/transaction up.
- Buying ahead & stocking up.
- Prices of inputs have gone up.
- Contactless is still the way to go.
- Events are up, but Delta dependent.
- Anxious to make LT customers.

## COVID effects on the... supermarket sector



- March '21 sales up 39% YOY; '20 sales up over '19 by 26%.
- 72% of shoppers purchased for themselves.
- Higher prices points received.
- Challenges = Freight, Labor, Supply
- Working 1 year out with partners instead of 6 months.
- E-commerce sales were strong.
- Box standardization will help.



#### COVID effects on the... online/bouquet making sector



- "5 years of growth in 1 year."
- Sales up in 2021 44% YOY.
- Wire services up 28% YOY.
- Logistics is the big issue.
- Giant companies buying up farms that were previously supplying the open flower market
- Unlucky weather
- Increased cargo rates for international shipping
- Increased demand for product flowers are hot these days

### Now let's look at post-COVID. First up... the economy.



#### U.S. trends

1.000.000

Feb. 2020

Aug These are days with a reporting anomaly. Read more here.

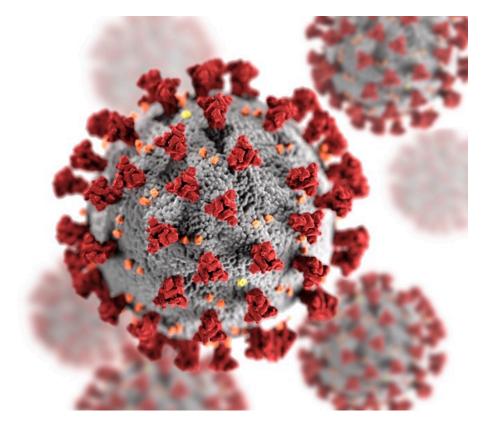


Feb. 2020

May

These are days with a reporting anomaly. Read more here.

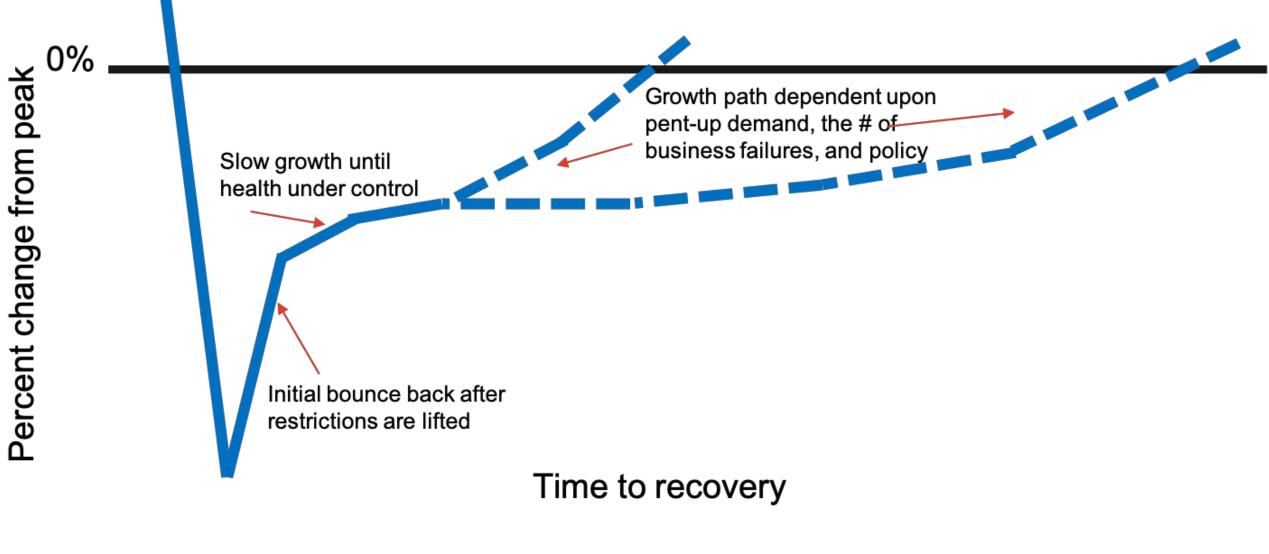
Feb. 2021



The "shape" of the economic recovery during COVID has been inversely correlated with the "shape" of the COVID curve.

May

Feb. 2021

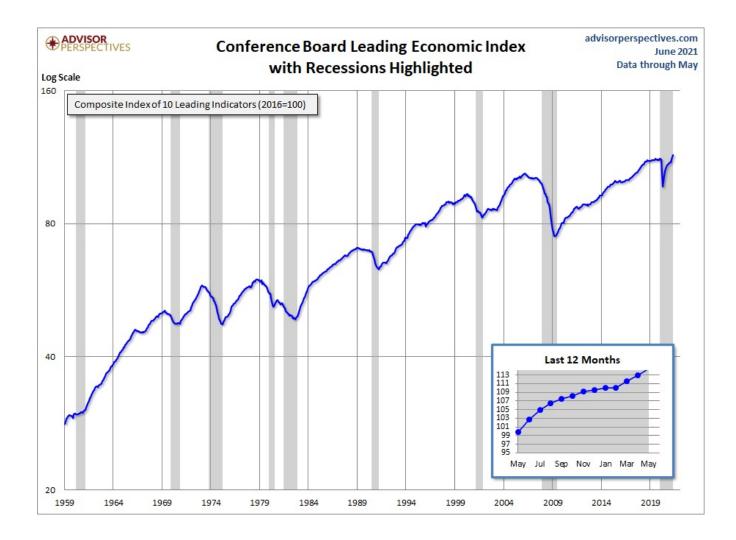


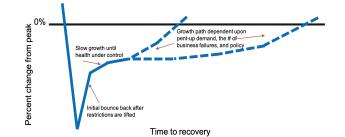
### Projected shape of the recovery

### Was my projection correct? Yep, so far...



### But what about the future?





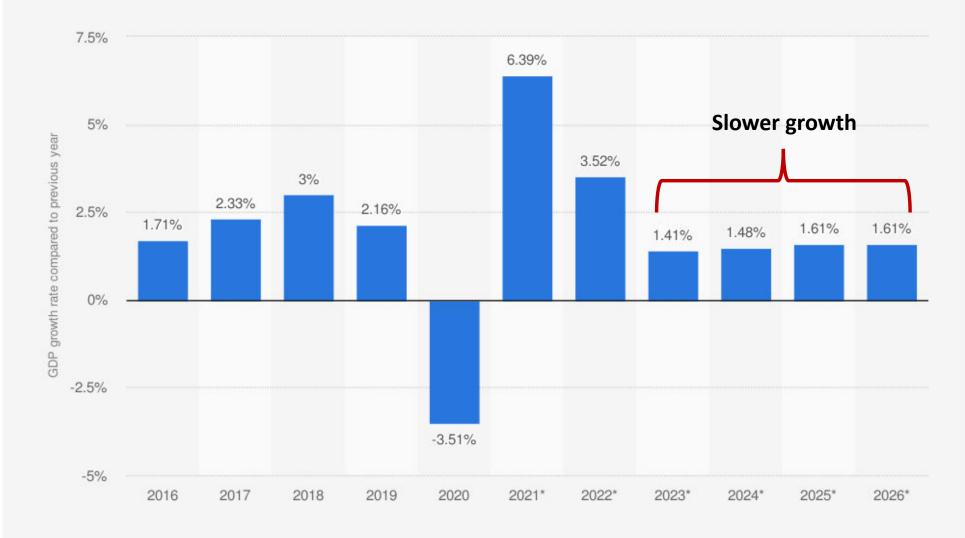
IF...we can contain COVID.

#### FOMC Projections, June 16, 2021



		Medi	an <u>1</u>	Range <sup>3</sup>							
Variable	2021	2022	2023	2021	2022	2023	Longer run				
Change in real GDP	7.0	3.3	2.4	6.3-7.8	2.6-4.2	1.7-2.7	1.6-2.2				
March projection	6.5	3.3	2.2	5.0-7.3	2.5-4.4	1.7-2.6	1.6-2.2				
Unemployment rate	4.5	3.8	3.5	4.2-5.0	3.2-4.2	3.0-3.9	3.5-4.5				
March projection	4.5	3.9	3.5	4.0-5.5	3.2-4.2	3.0-4.0	3.5-4.5				
PCE inflation	3.4	2.1	2.2	3.0-3.9	1.6-2.5	1.9-2.3	2.0				
March projection	2.4	2.0	2.1	2.1-2.6	1.8-2.3	1.9-2.3	2.0				
Core PCE inflation <sup>4</sup>	3.0	2.1	2.1	2.7-3.3	1.7-2.5	2.0-2.3					
March projection	2.2	2.0	2.1	1.9-2.5	1.8-2.3	1.9-2.3					
Memo: Projected	d appropriat	e policy pat	th								
Federal funds rate	0.1	0.1	0.6	0.1	0.1-0.6	0.1-1.6	2.0-3.0				
March projection	0.1	0.1	0.1	0.1	0.1-0.6	0.1-1.1	2.0-3.0				

#### Real gross domestic product (GDP) growth rate in the United States from 2016 to 2026 (compared to the previous year)



- Pent-up demand will continue into 2023 with increasing weddings and events. Funeral flowers are also in high demand. The Delta variant will be a pivotal influence.
- More business closures, mergers, & acquisitions (e.g., bouquet makers buying up farms, mega-wholesale florists developing economies of scale).



- Constrained supply chains until mid-2022 at least / reconfigured to ↓ risk (at a cost). May provide room for niche players. Demand for local/regional will be stronger. ST inventory build likely. Upcoming bullwhip effect.
- Airline rates will remain high, space availability limited, high container prices and severe driver shortages remain indefinitely. "No Touch" freight inevitable, as are standardized (better stackable) boxes.



- More B2B vertical coordination with consolidated ordering/selling, more standing orders, increased lead times (1 YR vs 6 mos.), greater use of webshops and online platforms, more virtual sales contacts/demos – but... RELATIONSHIPS are even more critical.
- Short-term constriction in customer palette. Certain flowers/greens will be in short; thus, an opportunity for other crops. Fewer new flower introductions likely in the near term.



- E-commerce applications will expand, and the use of technology will continue to disrupt (e.g., AI applications, order management, personalization, analytics, etc.)(see B2B study)
- Packaging innovation will lead to alternatives to plastics, standardized box sizes, sustainable packing materials (↓ weight, ↓ waste, ↓CF)



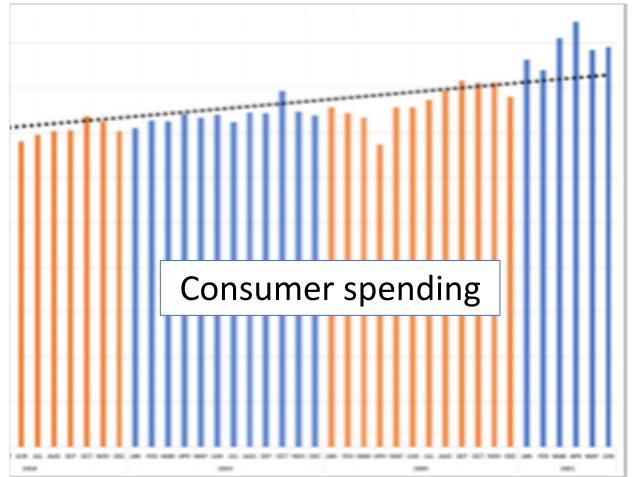
- Logistics innovations such as warehouse automation, big data analytics, AI, sea freight, alternative ports of entry, combining freight to create full truckloads.
- Rising input costs will necessitate price increases. Inflationary pressures won't subside until 2023. Less price sensitivity throughout the supply chain. Shrink, <u>labor</u>, & working capital still critical.



- Higher operating costs from worker/customer safety requirements and health care costs.
- Surpluses of certain flowers are inevitable (what's hot rules the day), but not until 2023 or beyond (hopefully).
- Numerous marketing efforts are underway. Now is the time to SHOUT flower benefits and sustainability initiatives that resonate. Focus on the experience + convenience.



## What's the one question I can't answer?



### Final Thoughts

"Organizations need to ask themselves, If we were to disappear, who would notice?"

"Sometimes you have to say just because we have always done it this way, is that what makes the most sense?"

"We need to choose to change with the times that are coming."

### Searching for the End of Uncertainty?

THINKS YOU CAN CONTROL THINGS THAT MATTER WHAT YOU SHOULD FOLLS ON