



PERSPECTIVE ON THE U.S. PORK INDUSTRY

MARCH 18, 2020

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TOPICS FOR TODAY

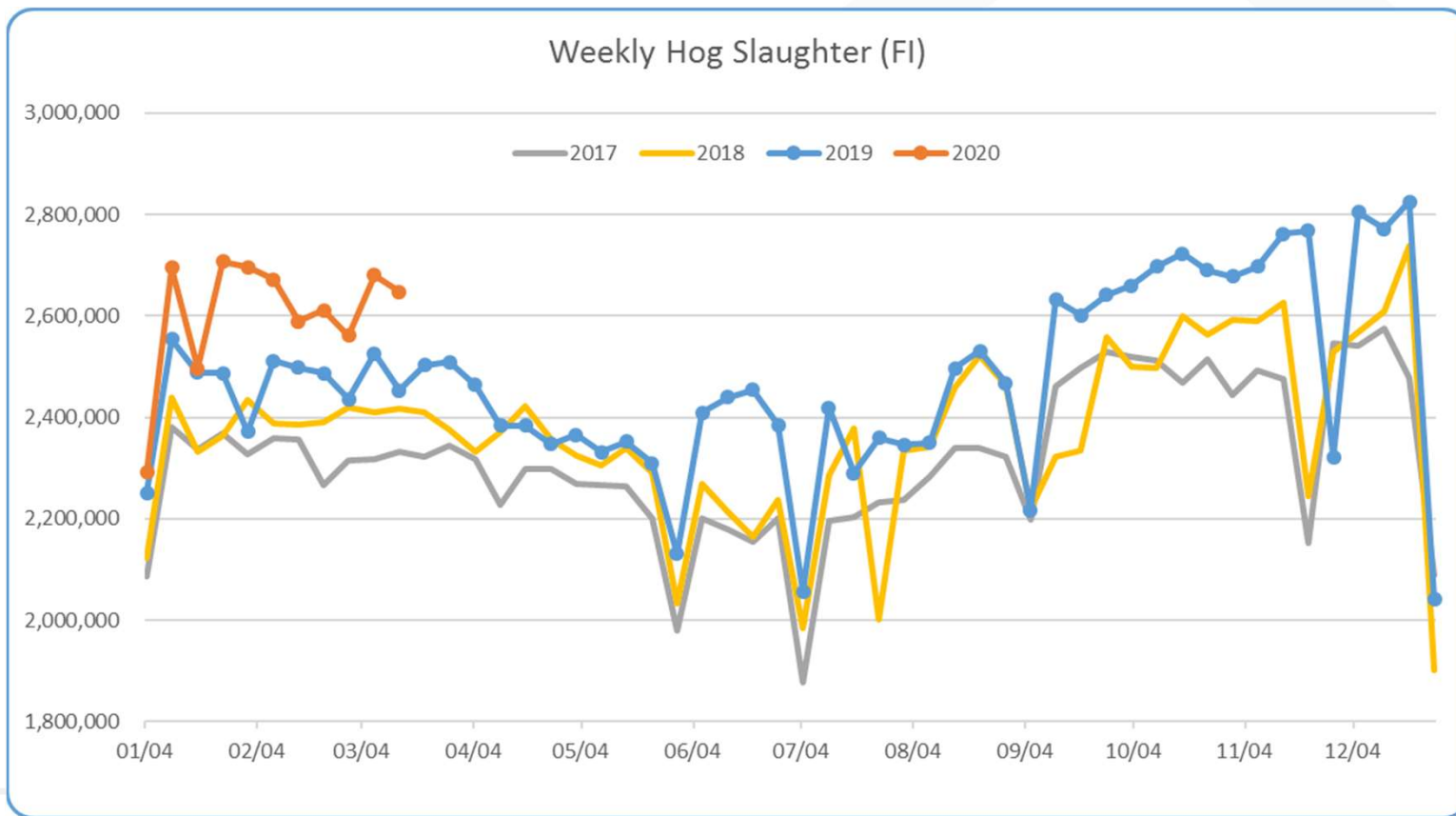
- **Swine Industry Supply Growth**
- **Global Pork Demand – Key Markets**
- **Profitability and cost of production**

USDA HOGS & PIGS REPORT

December 1 Quarterly Hogs & Pigs

(000's)	<u>12/1/2015</u>	<u>12/1/2016</u>	<u>12/1/2017</u>	<u>12/1/2018</u>	<u>12/1/2019</u>		<u>% of 18</u>	<u>% of 15</u>
Breeding Herd	6,002	6,110	6,179	6,326	6,461		102.1%	107.6%
Under 50 lbs.	20,008	20,887	21,407	21,858	22,128		101.2%	110.6%
50 - 119 lbs.	17,262	18,102	18,544	19,369	19,696		101.7%	114.1%
120 - 179 lbs.	13,370	13,786	13,925	14,323	14,976		104.6%	112.0%
180 lbs. +	12,276	12,660	13,089	13,195	14,076		106.7%	114.7%
All Market Hogs	62,917	65,435	66,966	68,745	70,877		103.1%	112.7%

HOG SLAUGHTER UP 6.0% SINCE 12/01/2019

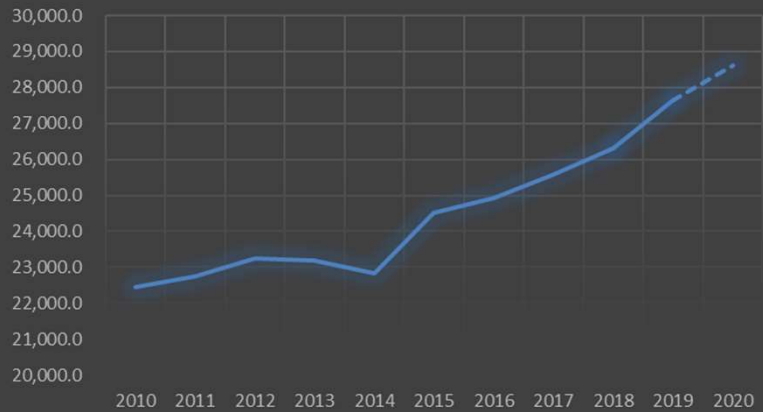


PACKER CAPACITY IS GROWING

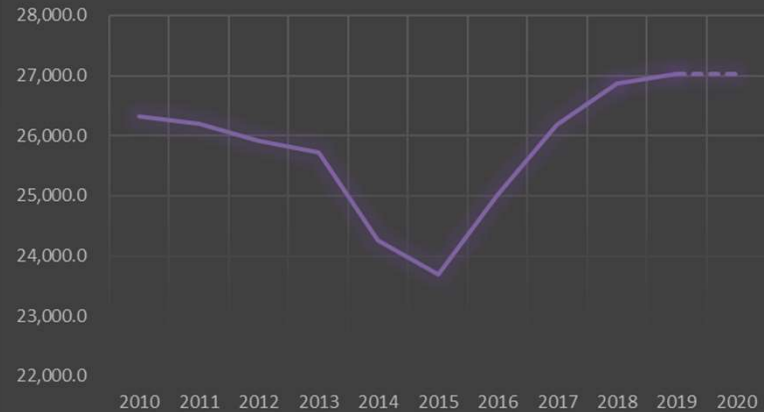
- Total capacity is 510,000 head per day, we are running about 495,000 to 497,000 today.
- Facility capacity is 510,000 or 2,754,000 per week, but labor has kept that capacity at near 2,684,000 head per week.
- More slaughter capacity by fall at Clemens Foods (Coldwater), Prestage Foods (Wright County), and Seaboard – Triumph Foods (Sioux City), but dependent on Labor.
- Increased capacity could add 70,000 per week (2.5%) to capacity, without double shifting Clemens Foods or Prestage Foods.

U.S. MEAT PRODUCTION

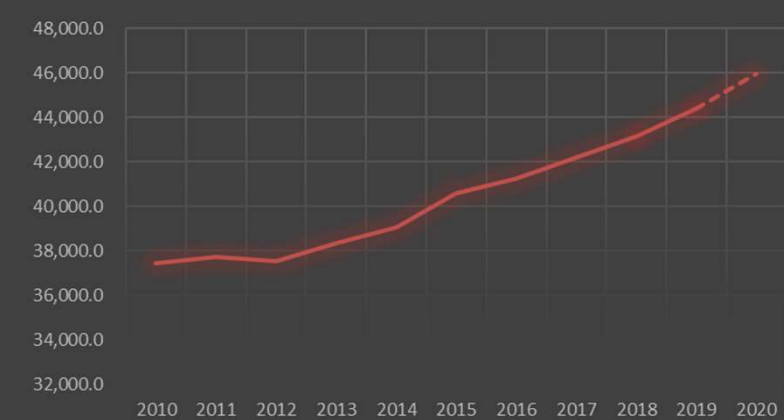
Annual Pork Production (MM Lbs.)



Annual Beef Production (MM Lbs.)



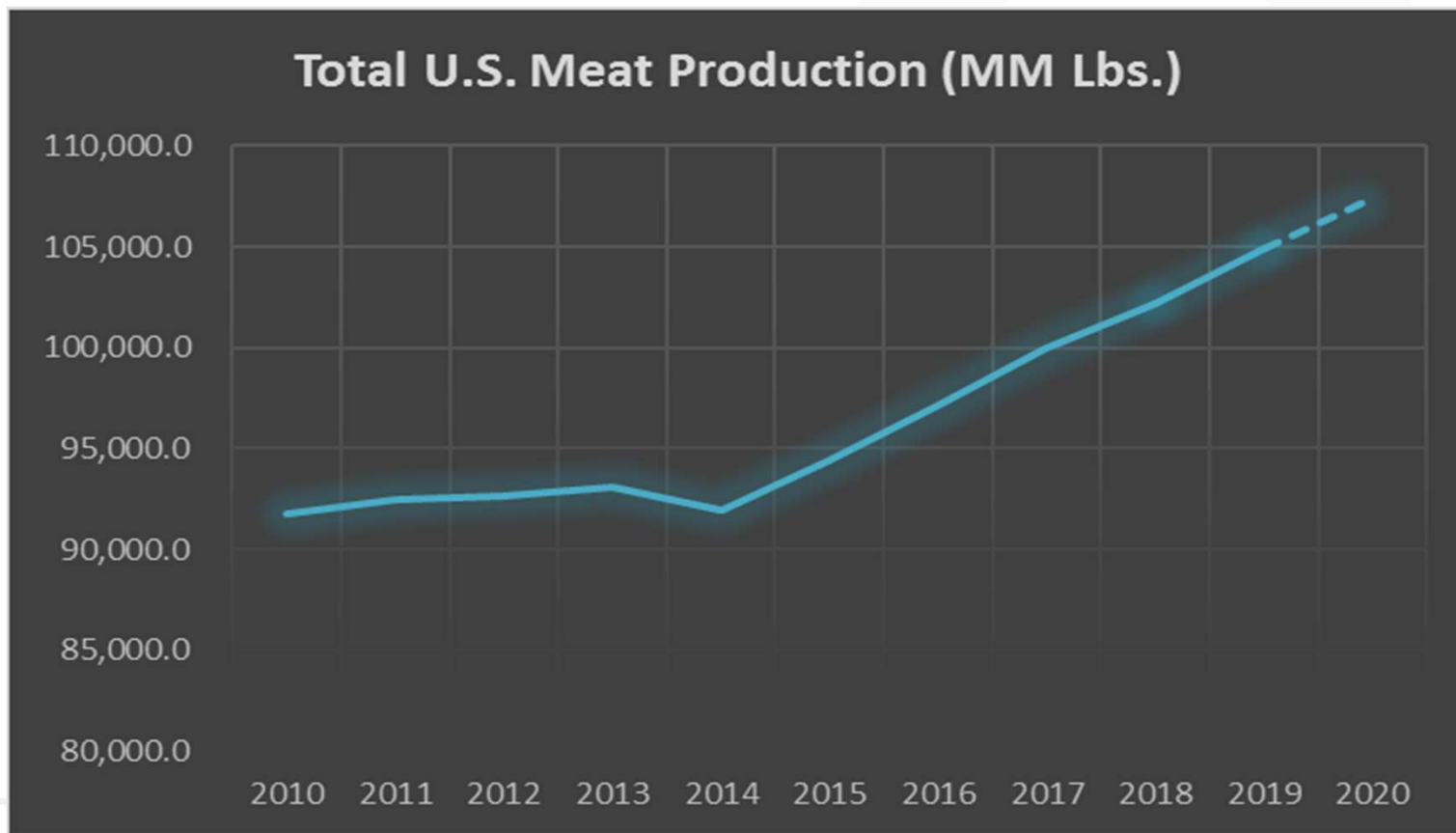
Annual Chicken Production (MM Lbs.)



Annual Turkey Production (MM Lbs.)



U.S. MEAT PRODUCTION HAS GROWN SIGNIFICANTLY SINCE 2014 (13 BILLION LBS.)



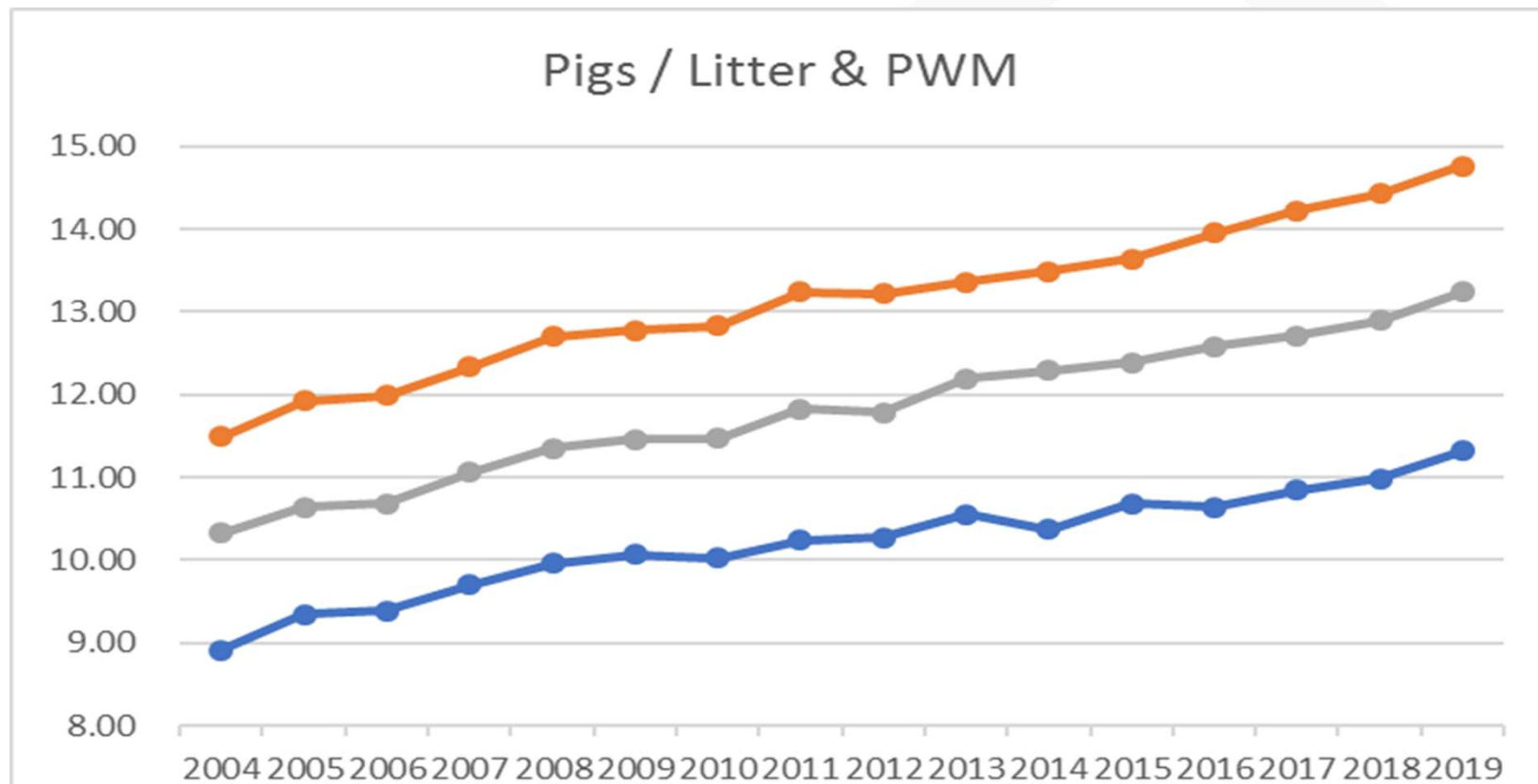
The background is a solid teal color. A large, faint, light-teal outline of a house is centered in the upper half. Below the house outline, there is a stylized bar chart with four vertical bars of increasing height from left to right. A small, horizontal yellow-green line is positioned below the second bar from the left.

PRODUCTION EFFICIENCY:

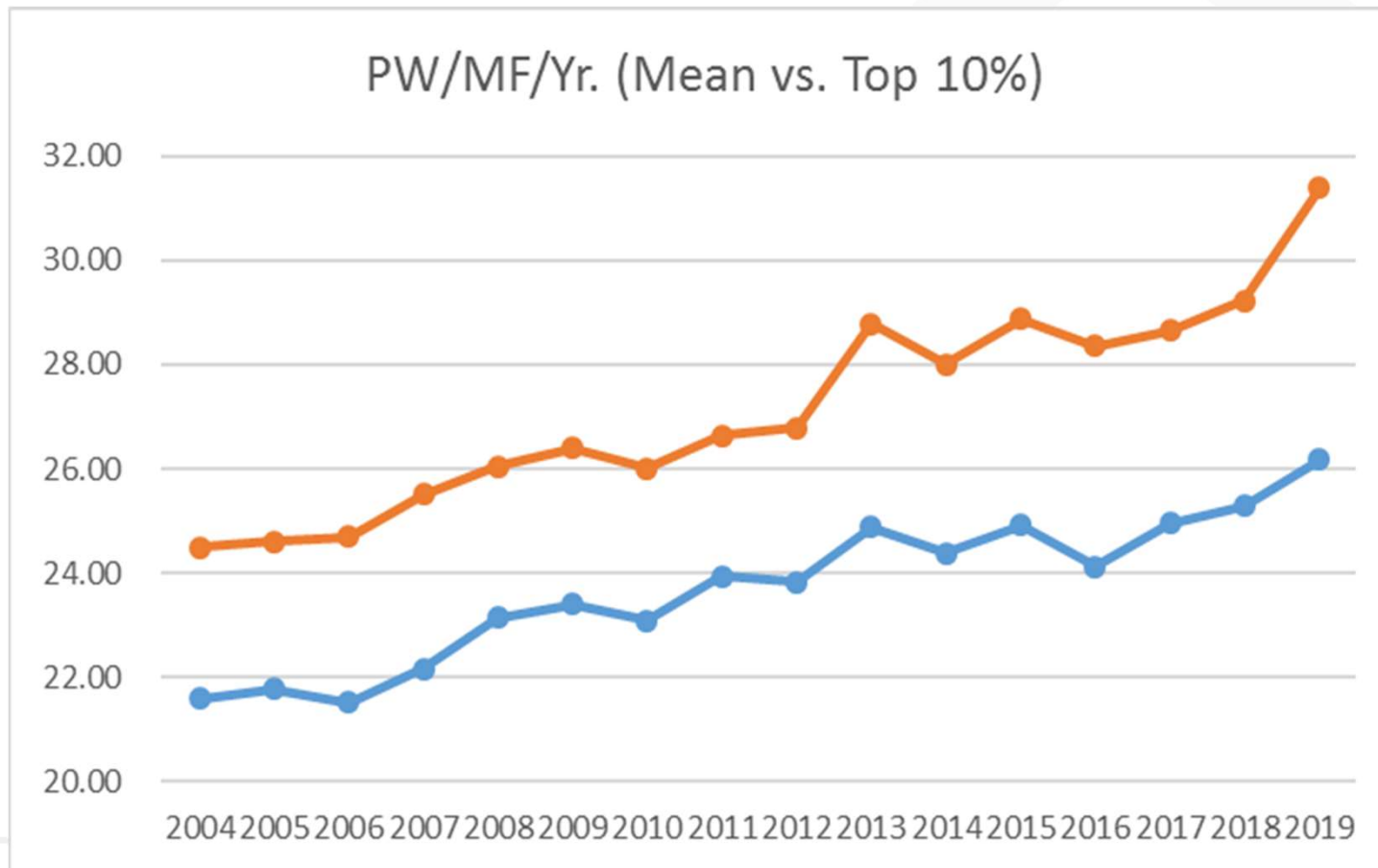
BREED TO WEAN PERFORMANCE



PIG CHAMP AVERAGE HERD PERFORMANCE



AVERAGE VS. TOP 10% PERFORMANCE



WEAN TO FINISH PERFORMANCE



METAFARMS DATA

	<u>2017</u>	<u>2018</u>	<u>2019</u>
Start Weight	12.9#	13.2#	13.1#
Out Wt. (w/o deads)	278.9#	279.0#	281.0#
Culls	1.7%	1.8%	1.8%
Death Loss	6.6%	7.4%	6.3%
Market Sales	91.7%	90.8%	90.9%
ADG (Live)	1.625	1.65	1.66
FCR (Live)	2.56	2.52	2.52
Days to First Sale	147.5	146.5	145.5
Average Days on Feed	163.3	161.3	162.1

THOUGHTS ON THE METAFARMS DATA:

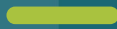
- **We need to market more than 90 – 92% of pigs weaned and placed in wean-finish or nurseries**
 - Quality of pigs coming in.
 - Health, robustness, and management.
- **We should be able to take 8 – 10 days out of the average days on feed**
 - With less ractopamine??
 - 5% less finishing space if attained
- **Understanding wean to finish performance is complex and many end up chasing various metrics. We haven't even talked about the ability to get the right pig on the truck at the right time.**

PRODUCTION DRIVERS OF COST:

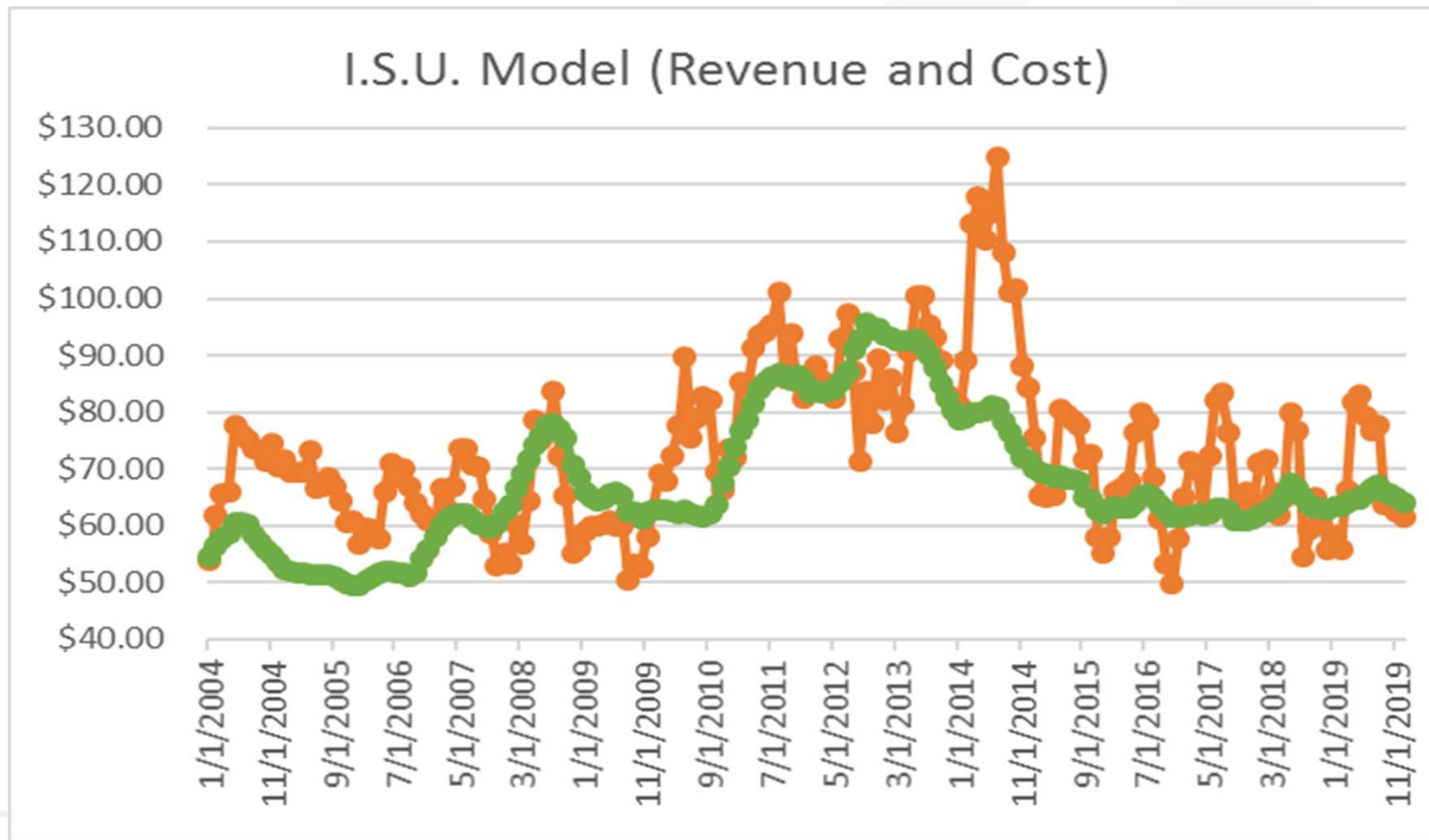
- **Pigs marketed (primary market) as a percent of pigs weaned.**
 - Maybe a percentage hitting the target weight range
 - Incorporates mortality and culls
- **Feed cost per pound of gain from wean to market**
 - At one time it was all about F/G in that period (Corn/soy diet)
 - Maybe caloric conversion is the right metric??
- **Total facility cost per pig or per cwt. produced (wean to finish)**
 - Improving space utilization to reduce costs
 - Incorporates average daily gain
- **Weaned pig cost per head**
 - P/MF/Y; Feed cost per head; Facility cost per head, Labor cost per head

A stylized, light blue outline of a house with a gabled roof. Inside the house, there is a bar chart with four vertical bars of increasing height from left to right. The text 'HOW DOES MY FARM COMPARE?' is centered within the house outline.

**HOW DOES MY FARM
COMPARE?**



IOWA STATE UNIVERSITY RETURN MODEL



DATABASE SUMMARY – PROFIT & LOSS

	Q3 2019	2018	2017	2016	2015	2014
Livestock Revenue	\$69.37	\$65.81	\$70.35	\$65.51	\$72.69	\$102.17
Operational Cost of Production	(\$68.92)	(\$69.10)	(\$66.26)	(\$68.78)	(\$72.95)	(\$80.91)
Operational Profit or Loss	\$0.45	(\$3.29)	\$4.09	(\$3.26)	(\$0.26)	\$21.26
Hedge Gain or Loss	\$0.64	\$2.60	(\$0.77)	\$2.49	\$5.19	(\$7.07)
Consolidated Profit or Loss*	\$2.55	\$0.71	\$5.32	\$1.92	\$6.39	\$17.91
Total Cost of Production	(\$66.82)	(\$65.10)	(\$65.04)	(\$63.60)	(\$66.30)	(\$84.26)
Carcass Weight (LB)	213.7	213.6	211.8	210.8	212.0	212.6

*Total Cost of Production = Livestock Revenue – Consolidated Profit or Loss
 Normalizes for other enterprises, hedging, and non-operational expenses

DATABASE SUMMARY – BALANCE SHEET

	9/30/2019	9/30/2018	9/30/2017	9/30/2016	9/30/2015	9/30/2014
Owner Equity	59%	64%	66%	66%	67%	55%
WC/Sow*	\$857	\$1,042	\$1,247	\$1,322	\$1,202	\$823
Fixed Debt/Sow	\$859	\$854	\$847	\$996	\$758	\$755
Operating Debt/ Pig on Feed	\$48	\$34	\$27	\$26	\$36	\$57

*Working Capital excludes breeding livestock and includes operating debt

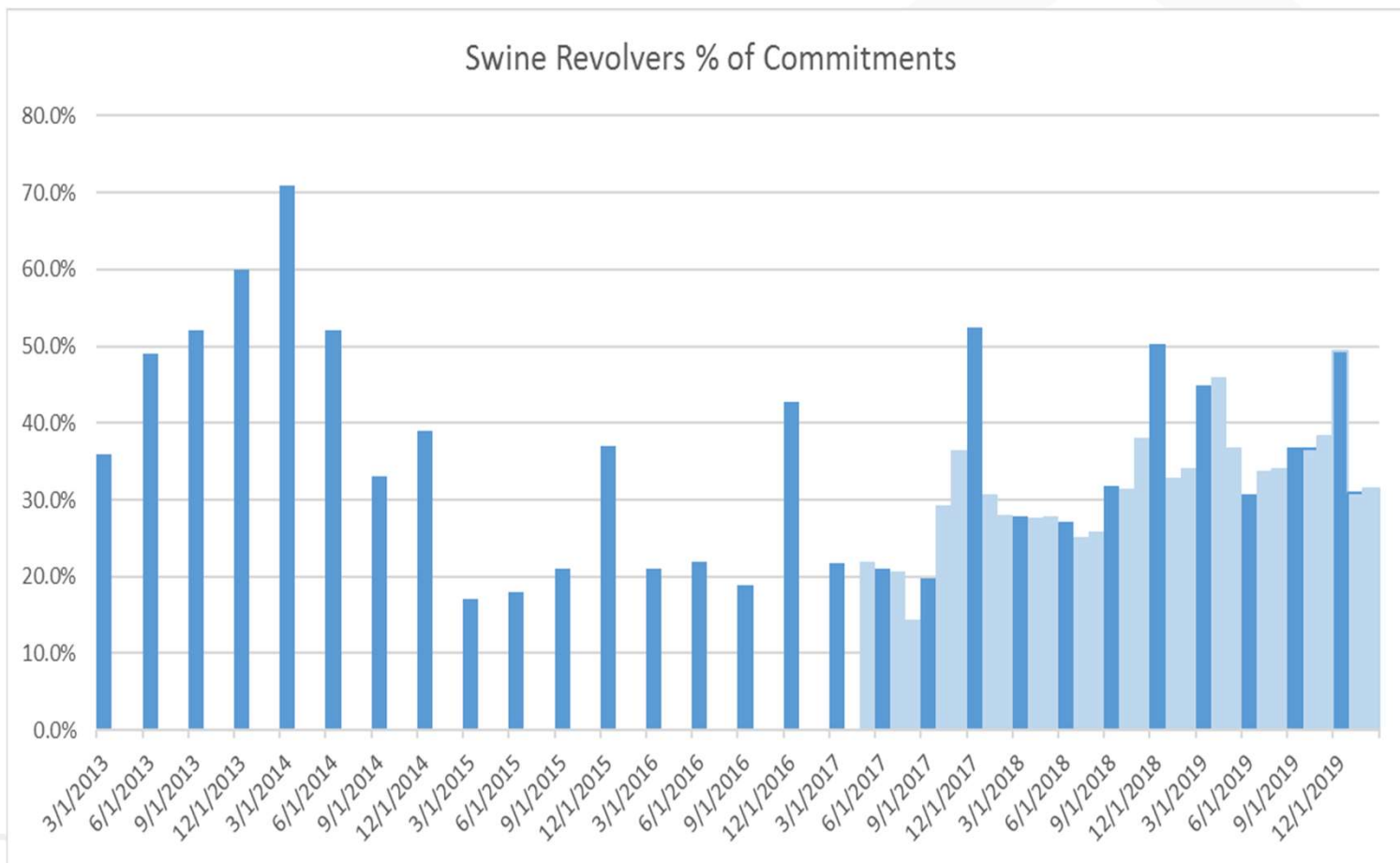
REVENUE



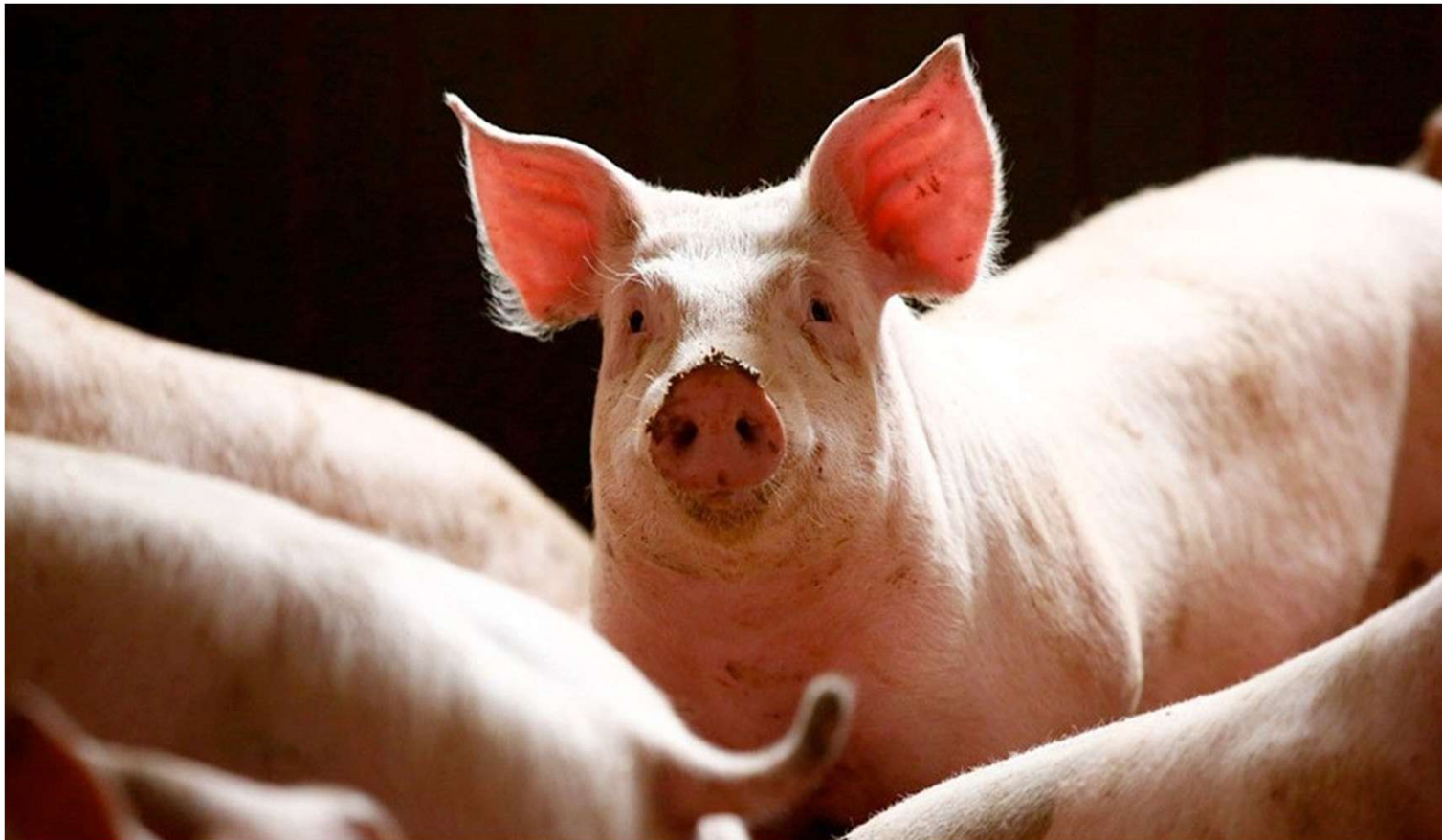
COST OF PRODUCTION



TOTAL PORTFOLIO REVOLVER USAGE



QUESTIONS?





COMPEER
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ECONOMICS - WHAT'S HAPPENING

FEAR BEGETS RISK AVERSION

Bill Moore, Chief Risk Officer
Swine Outlook Meetings
Written March 17, 2020

WHERE ARE WE

- As we have communicated for nearly two years, the markets were stretched and fragile, and self-fulfilling cycles can take hold
- The markets don't like uncertainty
 - The market reacts hard to things they didn't expect
 - + This is the mother of uncertainties and those two things together translate to what we are experiencing that today
- Today's market prices reflect the collective market's expectation of the future path of the disease and disruption to economic activity
 - Stock declines greater than 30% from peak
 - Rise in volatility equal to 2008
 - Credit market conditions as fragile yet functional
 - Coincidental oil price war has added a third dimension to the mess

BIG SWINGS

Dow Jones Swings the Week of March 9th

Mon	Tues	Wed	Thurs	Fri	Mon
▼ 2,014	▲ 1,167	▼ 1,464	▼ 2,352	▲ 1,985	▼ 2,997

Biggest Post-War S&P Single Day % Losses

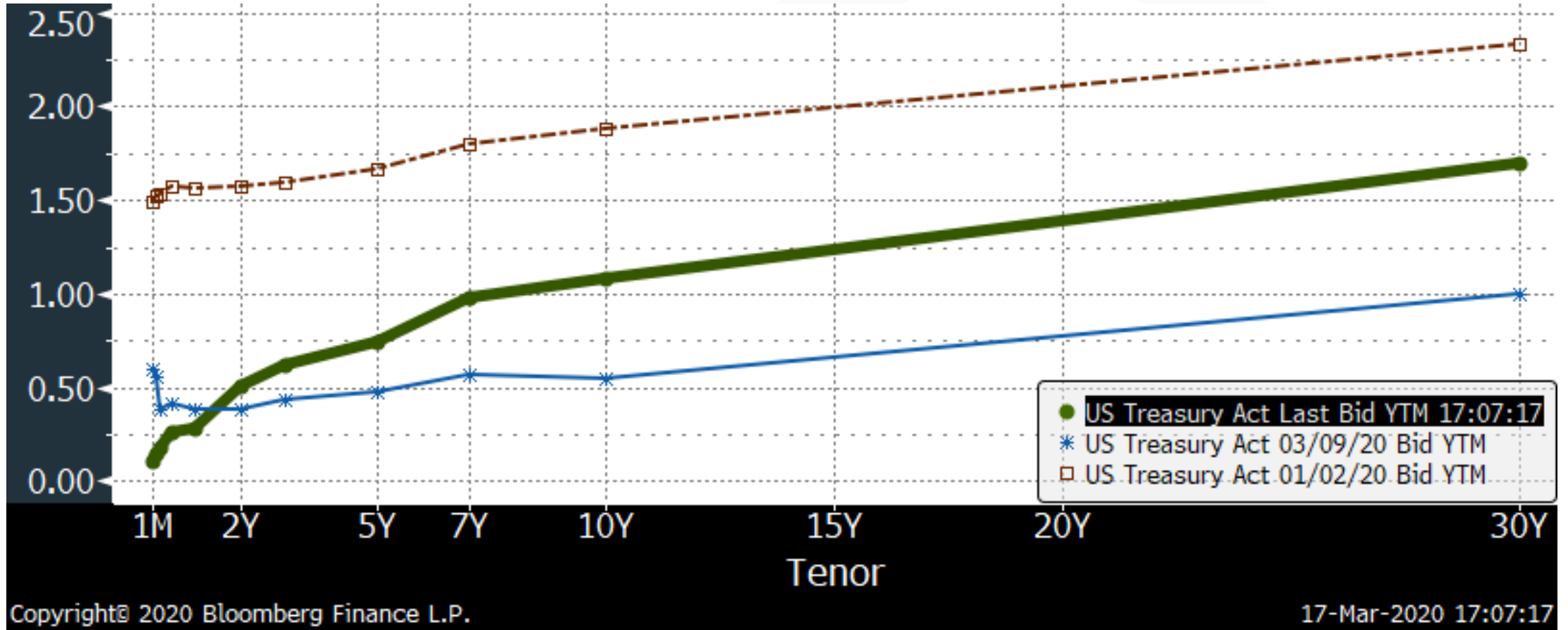
Oct 18, 1987	Mar 16, 2020	Mar 12, 2020	Oct 15, 2008
▼ 20.47%	▼ 11.98%	▼ 9.51%	▼ 9.04%

10 YEAR TREASURY



Last Week

YIELD CURVE





FED ACTION

- The Fed was not going to be behind the eight ball as the virus began to disrupt world events
- On March 3 and again March 15, the FOMC voted to cut the Fed Funds Rate by an aggregate of 150bps
 - The move isn't unprecedented, but it's rare
- We likely have entered a new era of zero percent interest rates
- Outside of that day, it has only done so eight times since 1994 when Alan Greenspan made the Fed's actions more transparent.

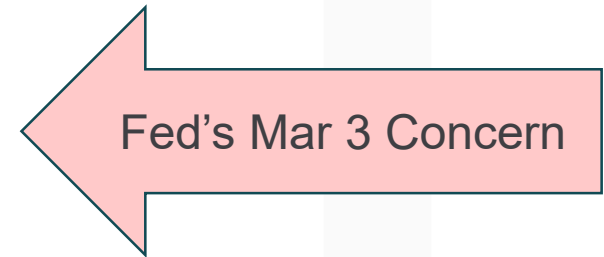
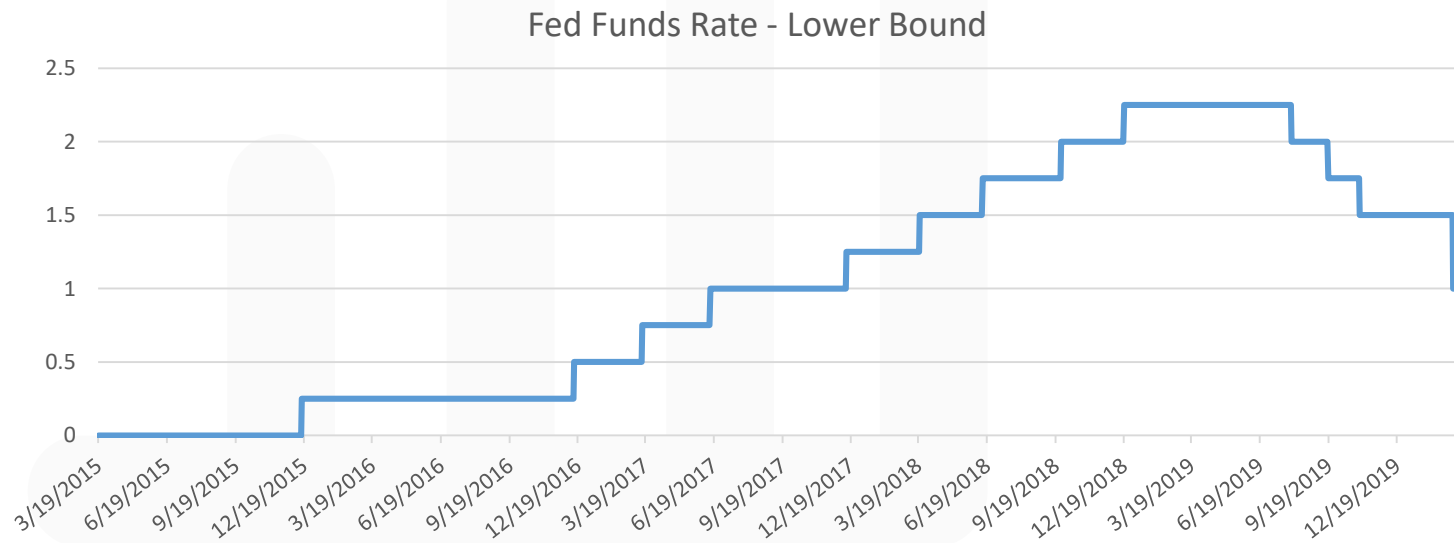
EMERGENCY CHANGE

- All but 1994's 25bps raise that started a large cyclical trend, it rates were attached to momentous events

March 15, 2020	CORONAVIRUS PART II
March 3, 2020	CORONAVIRUS PART I
Oct. 8, 2008	LEHMAN BROTHERS BANKRUPTCY
Jan. 22, 2008	MORTGAGE CRISIS PART II
Aug. 17, 2007	MORTGAGE CRISIS PART I
Sept. 17, 2001	9/11 TERRORIST ATTACK
April 18, 2001	RECESSION PROTECTION
Jan. 3, 2001	DOT COM BUBBLE
Oct. 15, 1998	RUSSIA FINANCIAL CRISIS
April 18, 1994	START OF HIKES

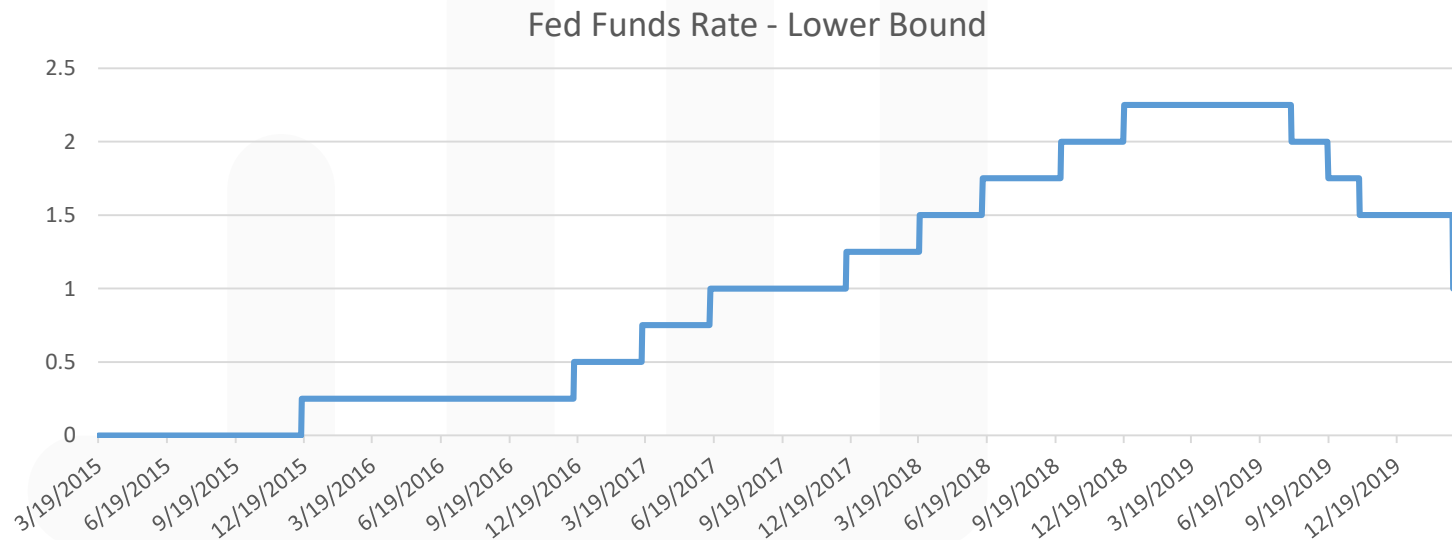
FED ACTIONS PART I

- Monetary stimulus
 - Willingness to purchase a variety of financial assets



FED ACTIONS PART II

- Monetary stimulus
 - Willingness to purchase a variety of financial assets
 - Fed increasing access to discount window & repo markets & PDCF & CPFF





ADDITIONAL GOVERNMENT RESPONSE

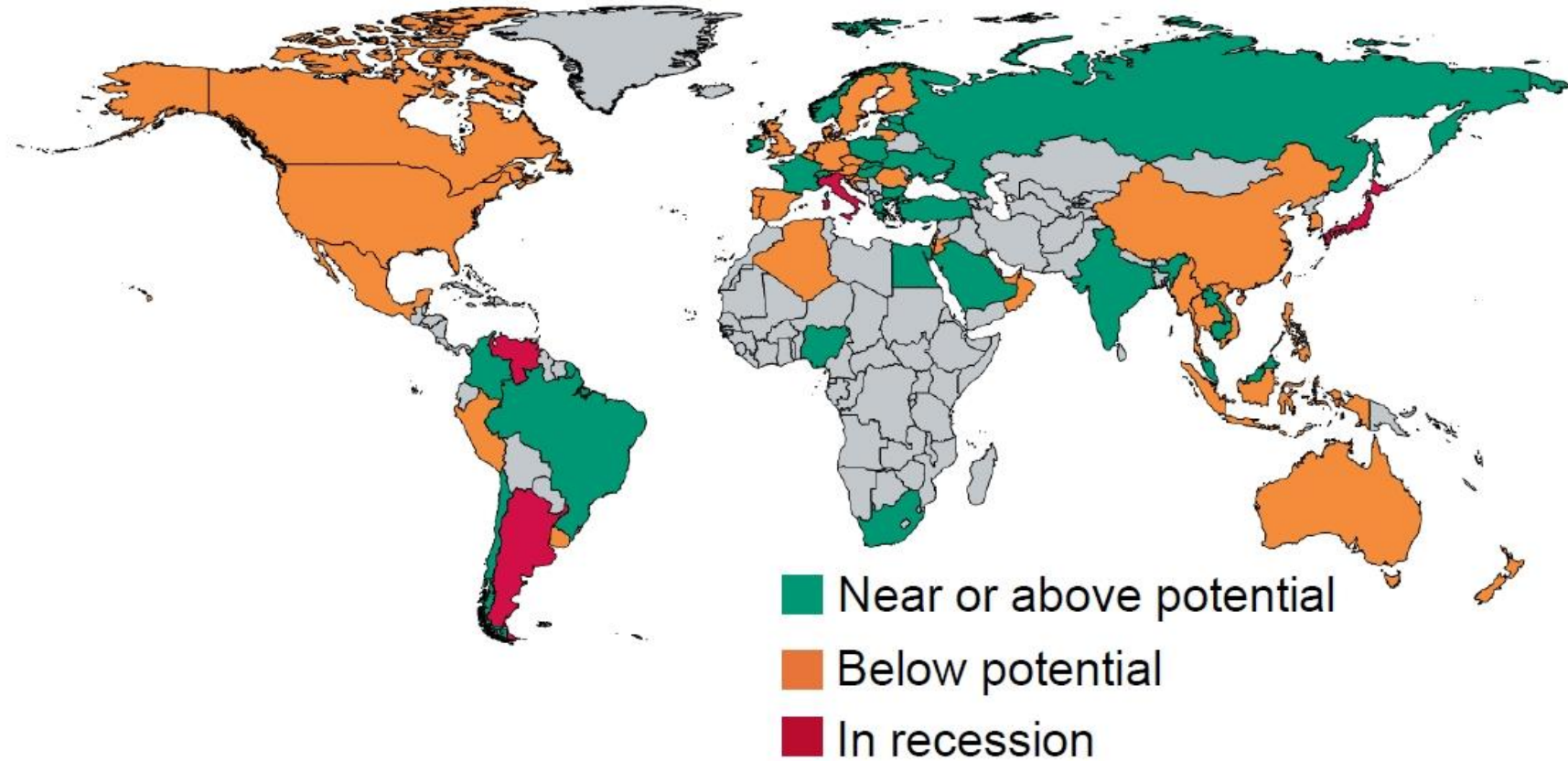
- Treasury Department assuring banks liquidity
- Fiscal stimulus
 - House and White House agree on paid leave, food & health security bill
 - \$1.2 trillion spending proposal including \$1,000 direct payments
- SBA will provide up to \$2 million in Economic Injury Disaster Loans to businesses impacted by the outbreak
 - Businesses with credit available elsewhere are not eligible

RECESSION 2020

- The pandemic, unprecedented in modern times, will likely tip the globe into a recession
 - The sudden stop to economic activity through quarantines, event cancellations, social distancing and even shelter in place, contribute to the downward revision
- The US economy could shrink by 2% in the first quarter and likely more than 3% in the second
 - Beyond that remains to be seen
- The good news?
 - A recession touched off by the coronavirus should look very different from the one launched by the 2008 financial crisis

Diminished Growth Prospects in 2020...

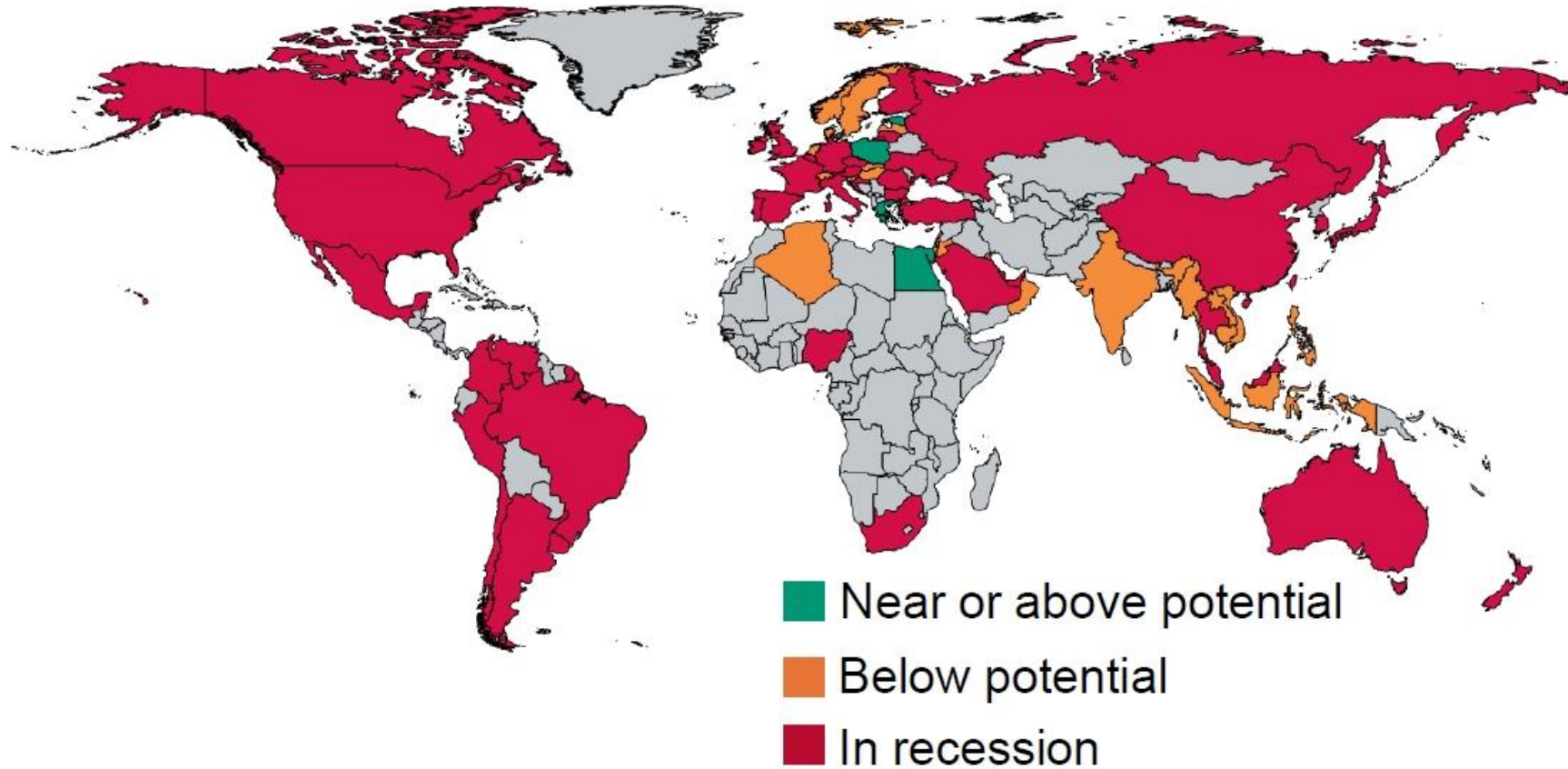
2020 GDP growth forecast, Mar baseline



Source: Moody's Analytics

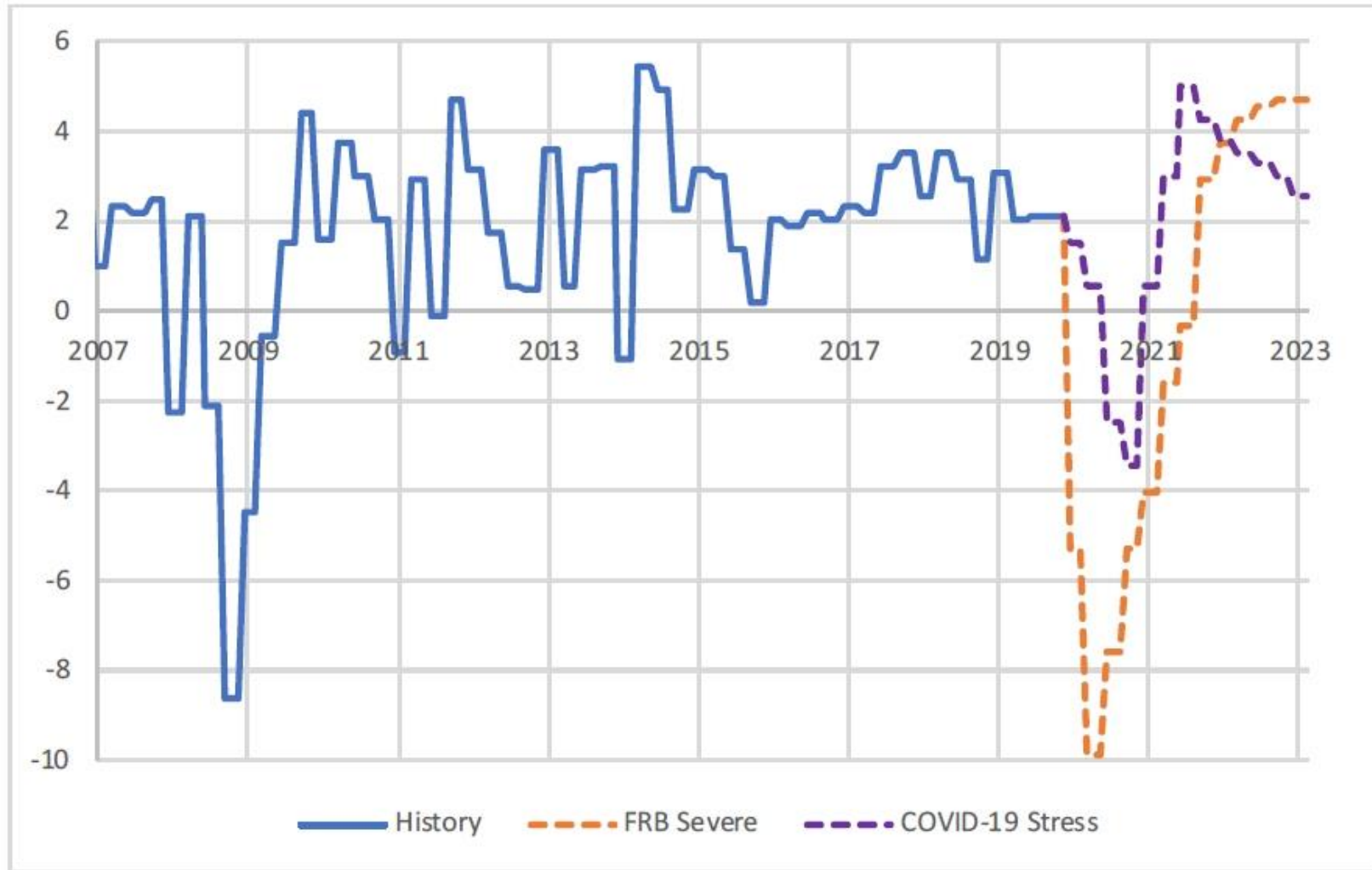
...And a Significant Risk of Recession

2020 GDP growth forecast, COVID-19 Pandemic scenario

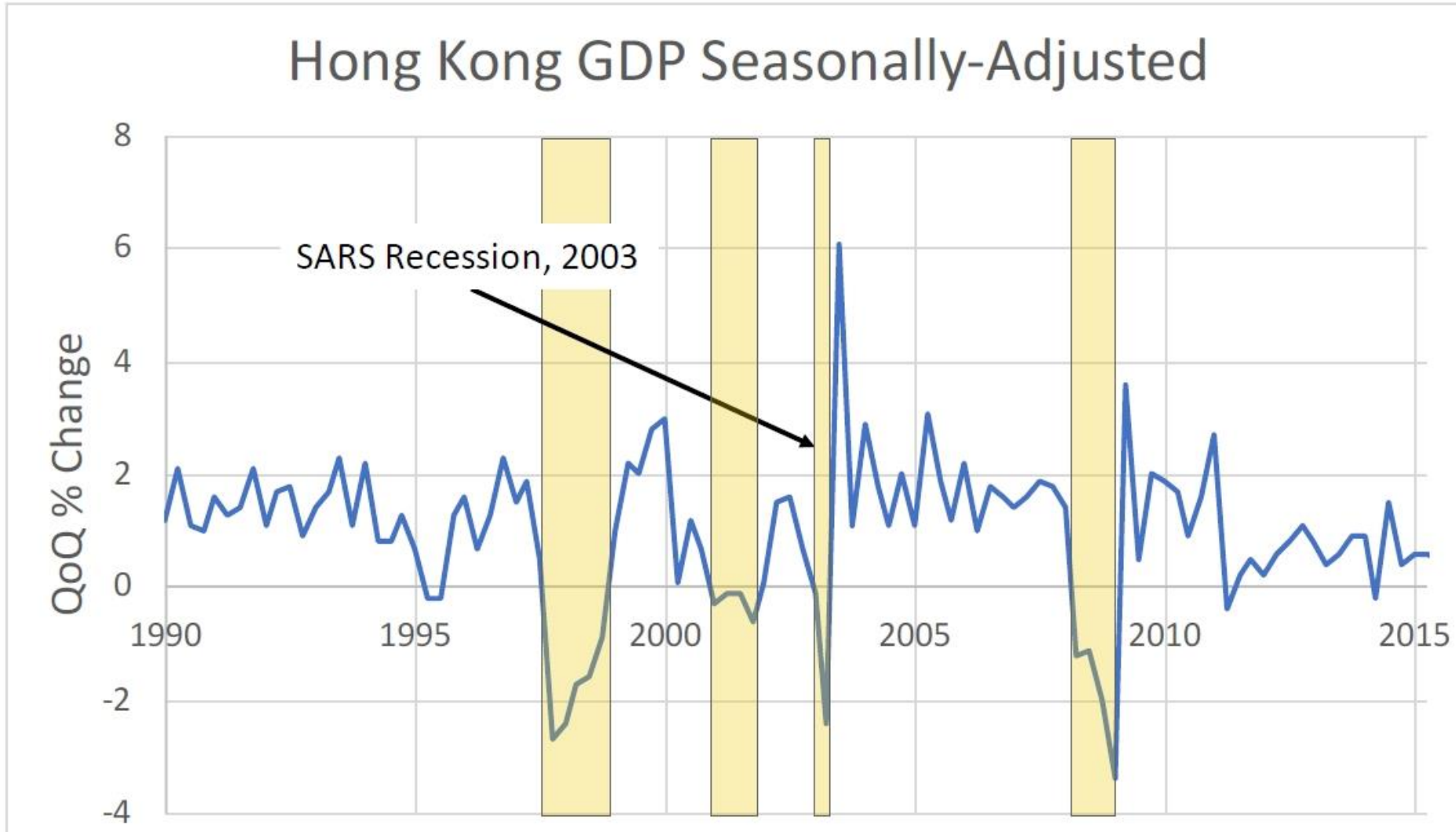


Source: Moody's Analytics

RMA MODELING VS. DFAST



SARS-LED RECESSION CASE STUDY



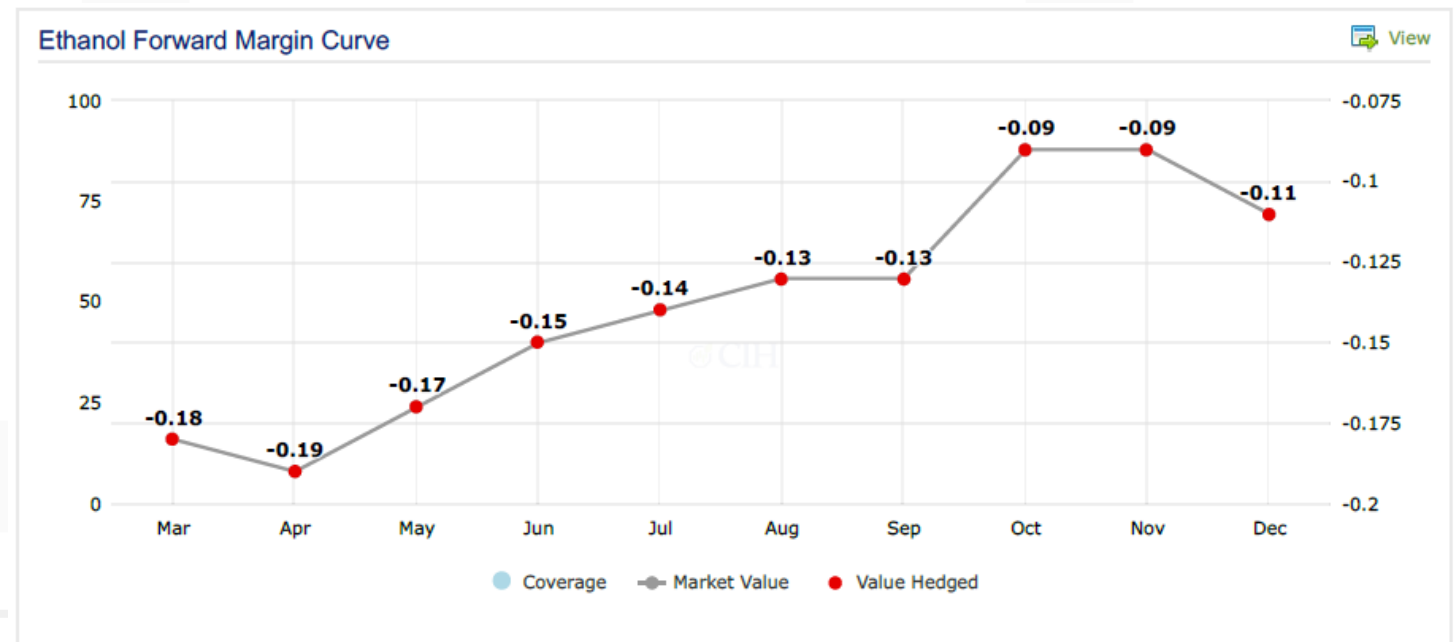


AG ECONOMY

- The Good News:
 - Ag is mostly uncorrelated from the general economy
 - + Meaning they don't necessarily move together
 - Interest Rates should help maintain land values
 - Food (and toilet paper) are running off the shelves
- But there are risks:
 - To labor availability – particularly for the livestock sector
 - Off-farm income sources
 - Transportation or logistics issues
 - Exposure to exports
 - Significant volatility in commodity prices peak to trough

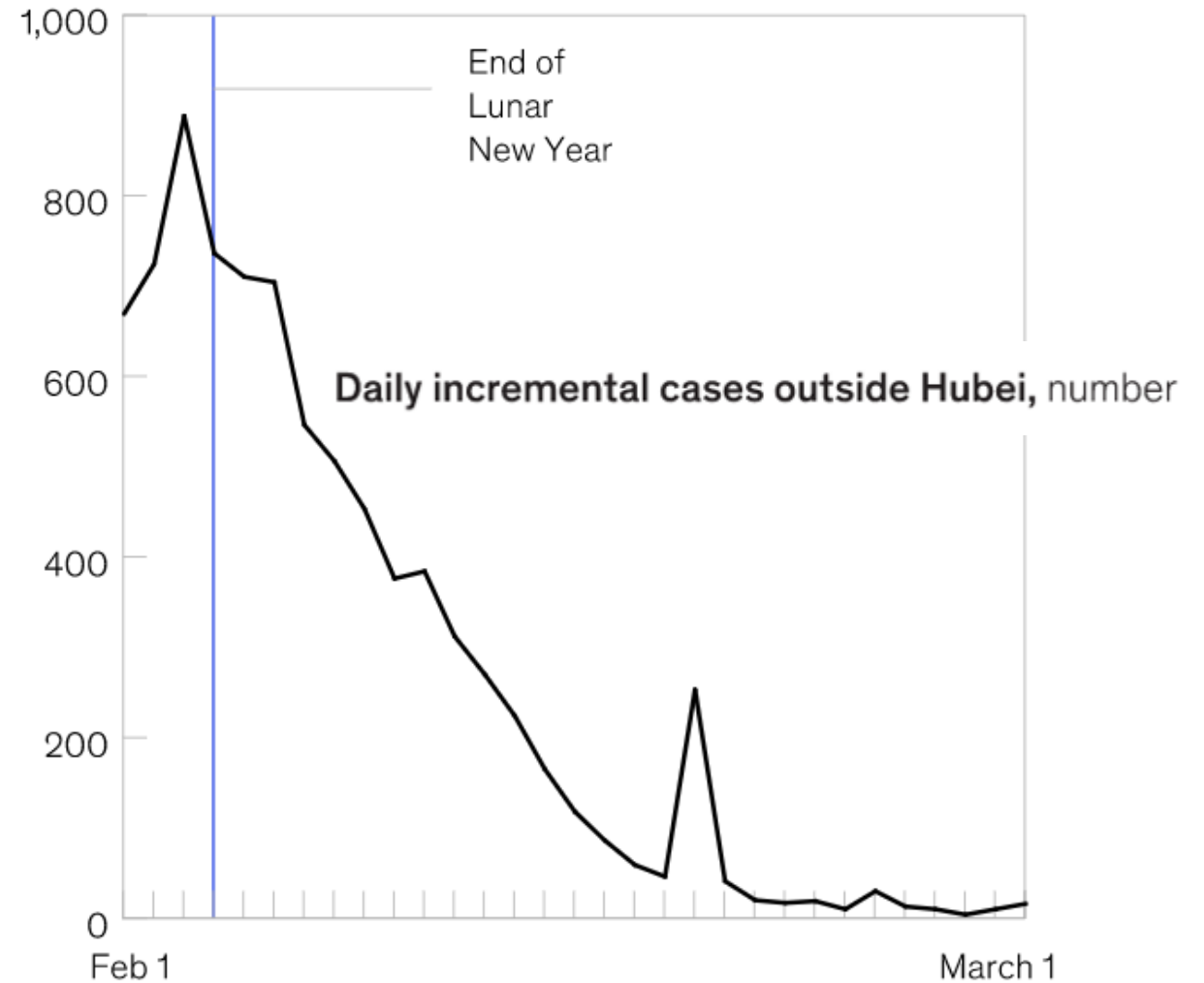
MIDWEST GRAIN

- Growing season **could** bridge Midwest grain through to any recovery
- Ethanol will be a factor if slowdown sustained
 - If gasoline consumption falls for extended period, corn used for ethanol production may lose 120 – 170 million bushels, or more
 - Gasoline futures have rapidly dropped from a 40c premium to Ethanol to 30c discount
 - To maintain margins at least parity, basis needs to change or corn would have to drop \$0.87/bu



EYE ON CHINA

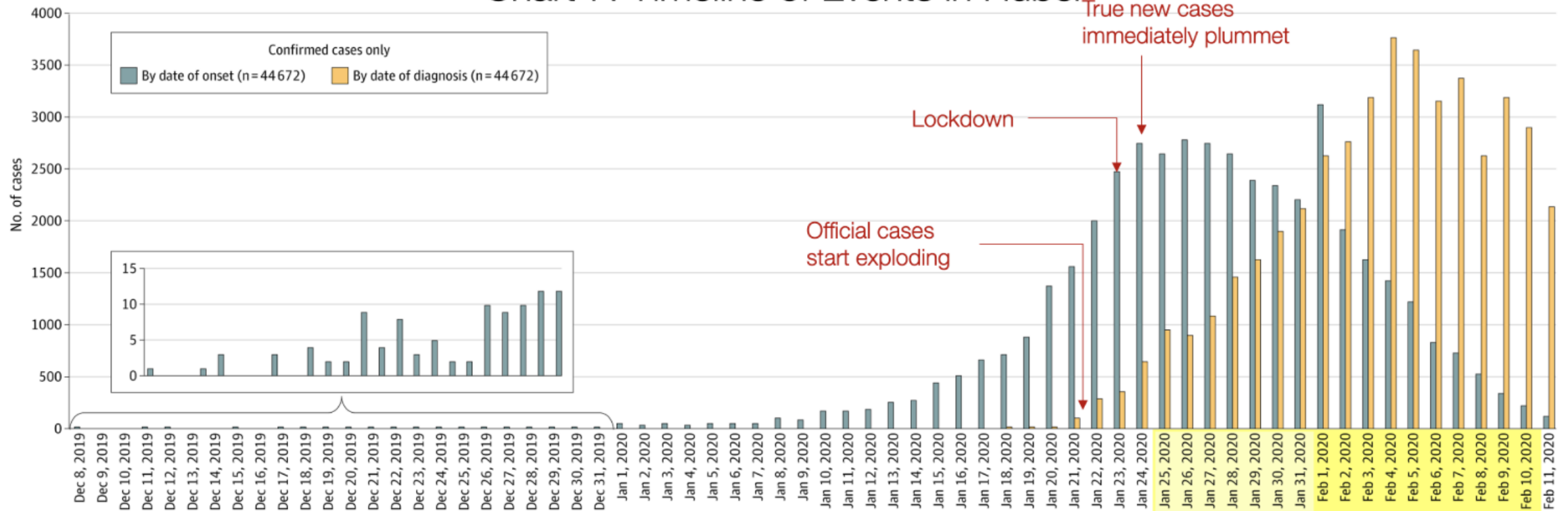
- Robust public-health responses, like those in China outside Hubei and in Singapore, can help stem the epidemic
- This is why we are self isolating, and holding webinars instead of conferences
- McKinsey & Co. noting the new cases in China have dramatically fallen



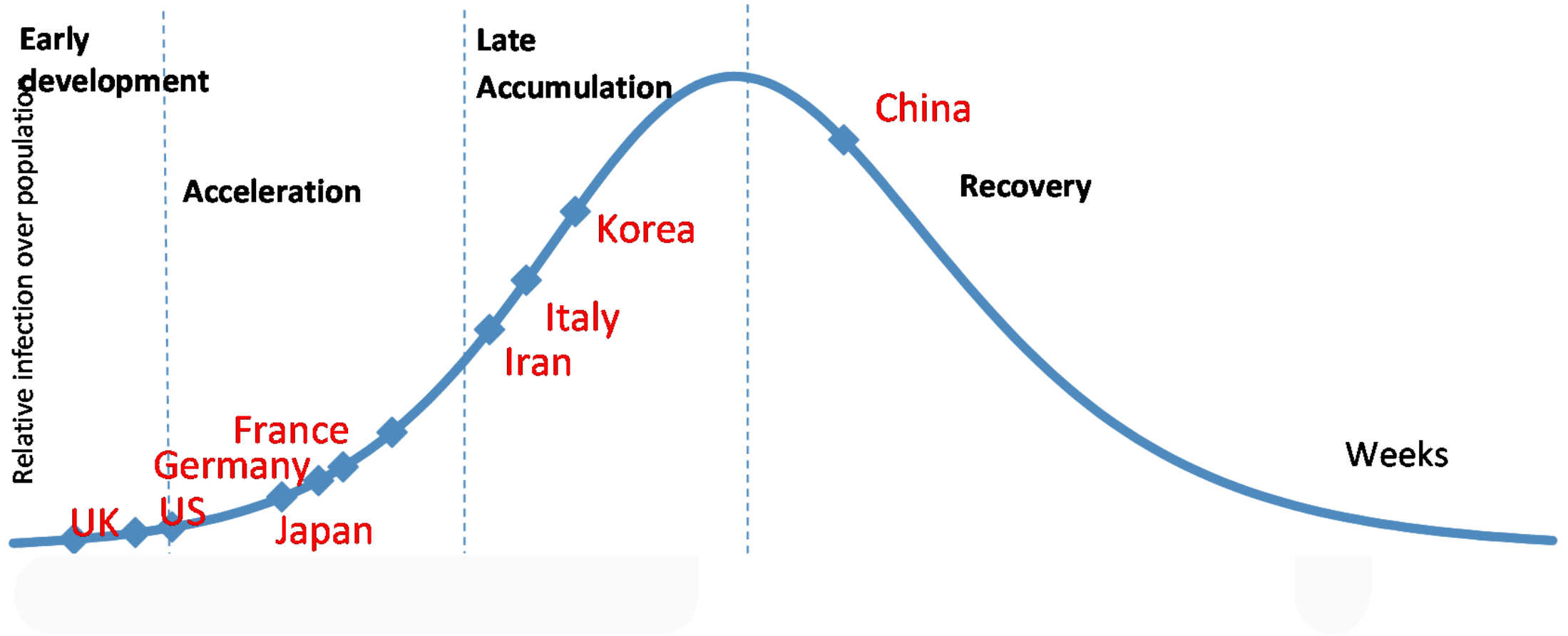
Source: *BMJ*; expert interviews; World Bank Development Indicators; World Health Organization

CHINA'S TIMELINE

Chart 7: Timeline of Events in Hubei

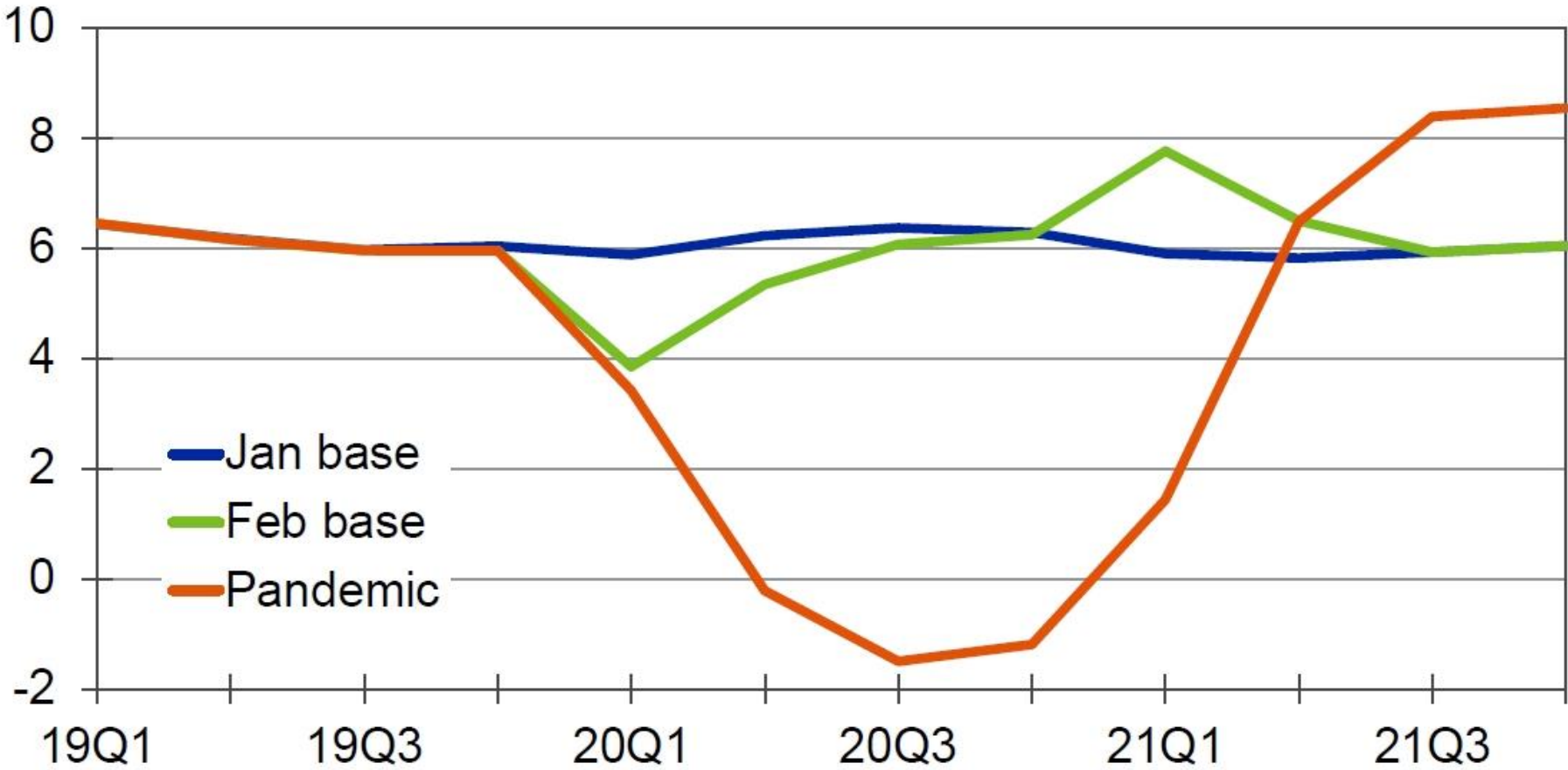


CYCLE LIFE



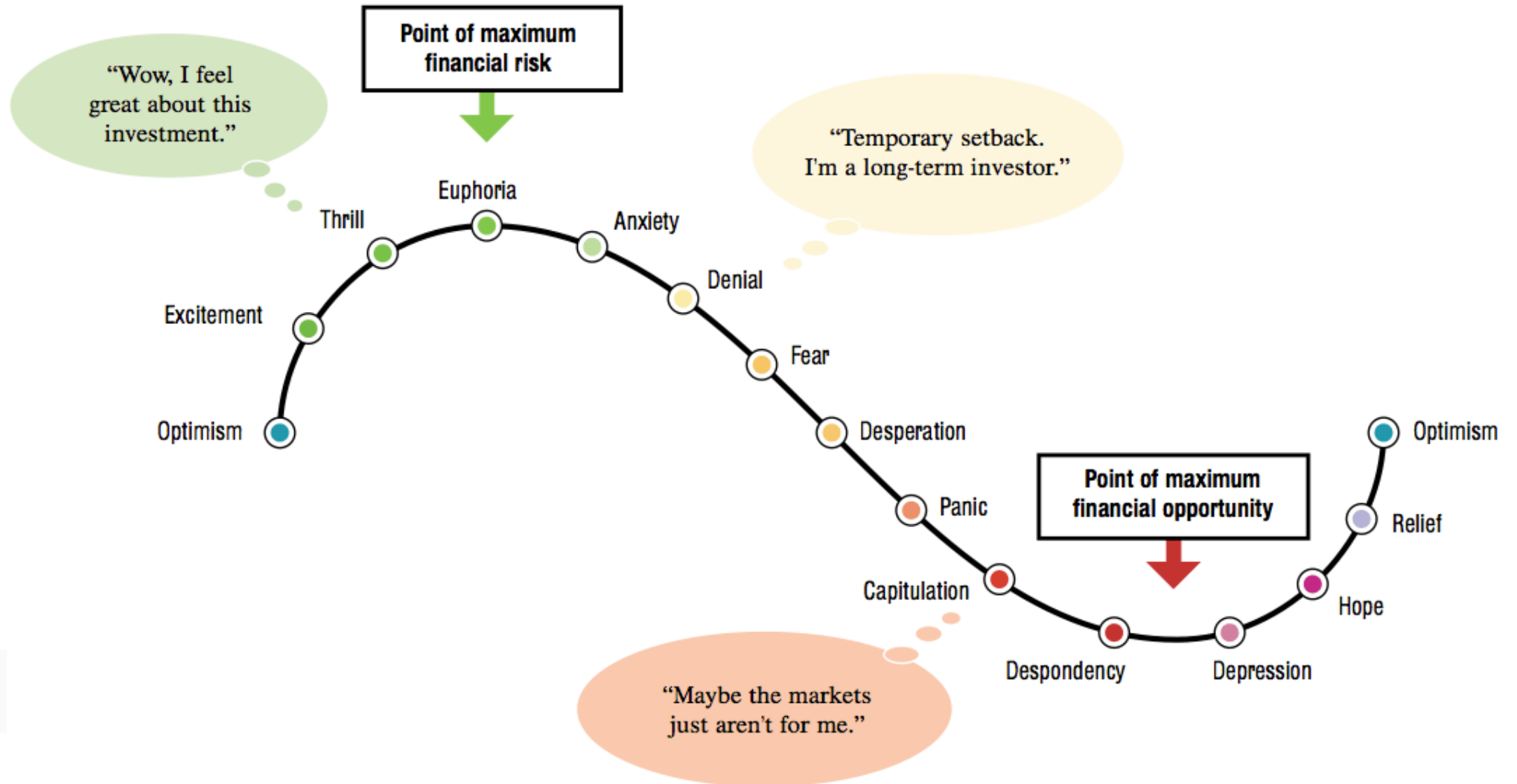
China's Economic Outlook

China real GDP growth, % change yr ago

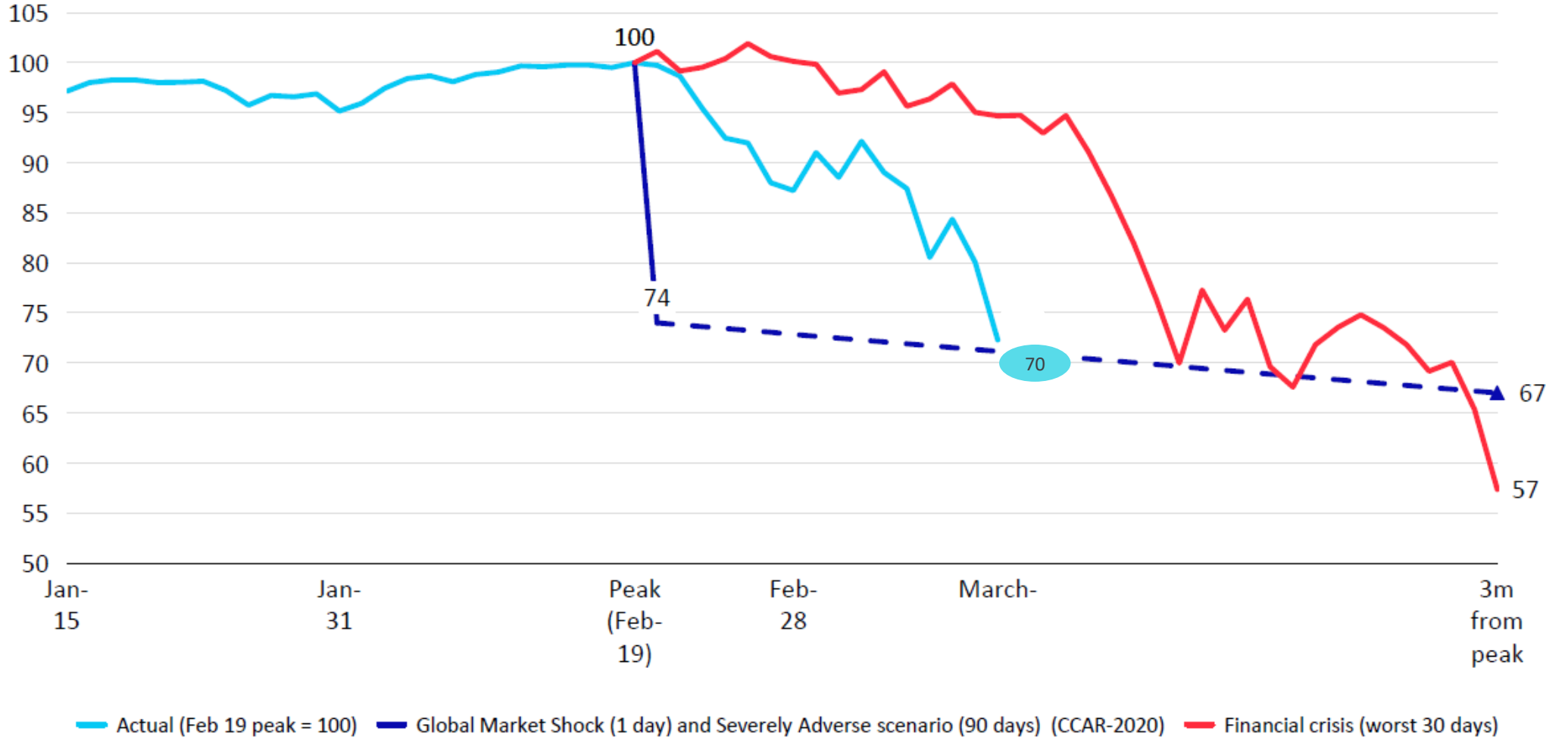


Sources: Government of China, Moody's Analytics

THE "CYCLE" OF EMOTIONS

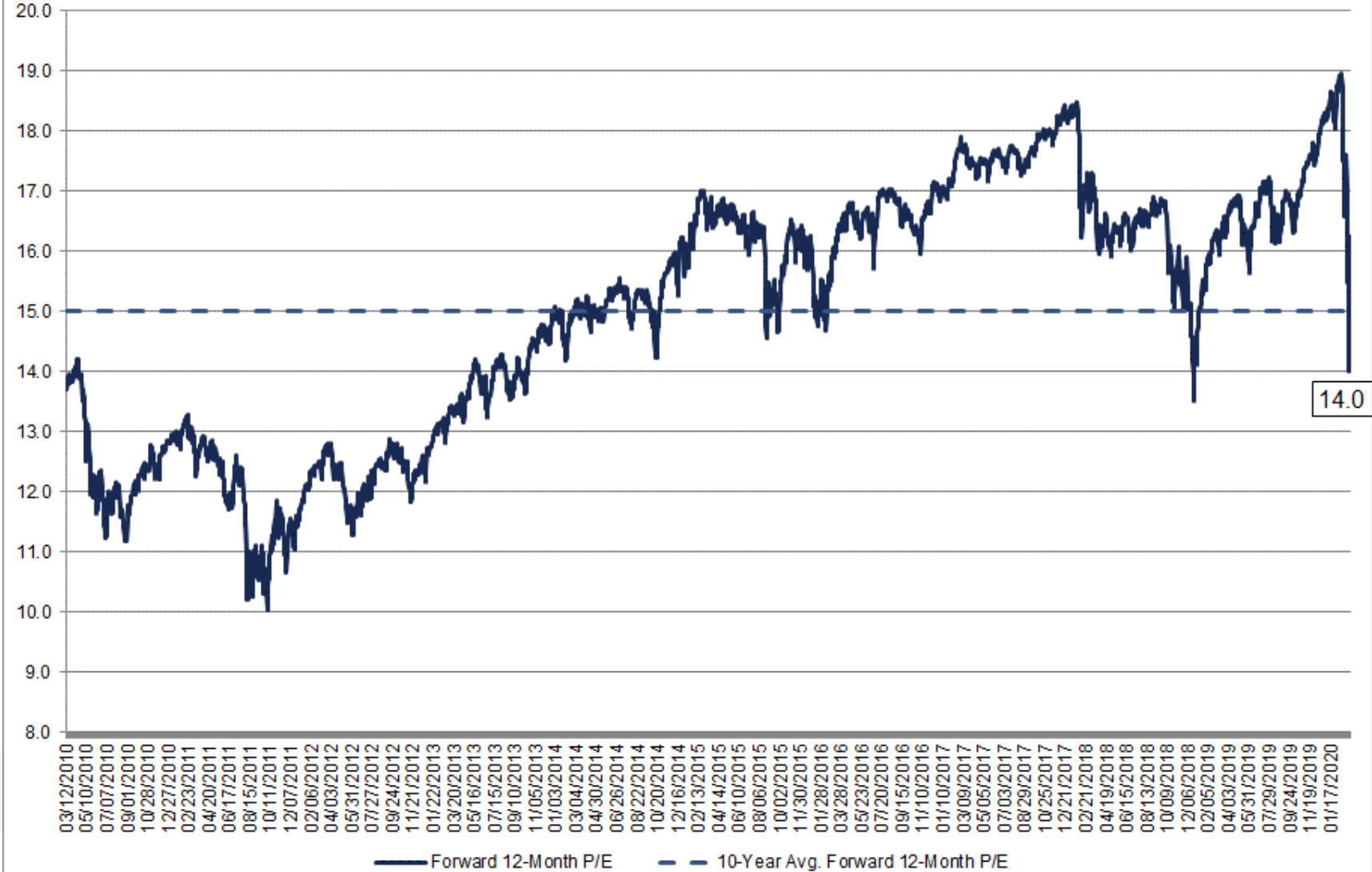


Dow Jones Total Stock Market Index (Relative to peak on Feb-19)

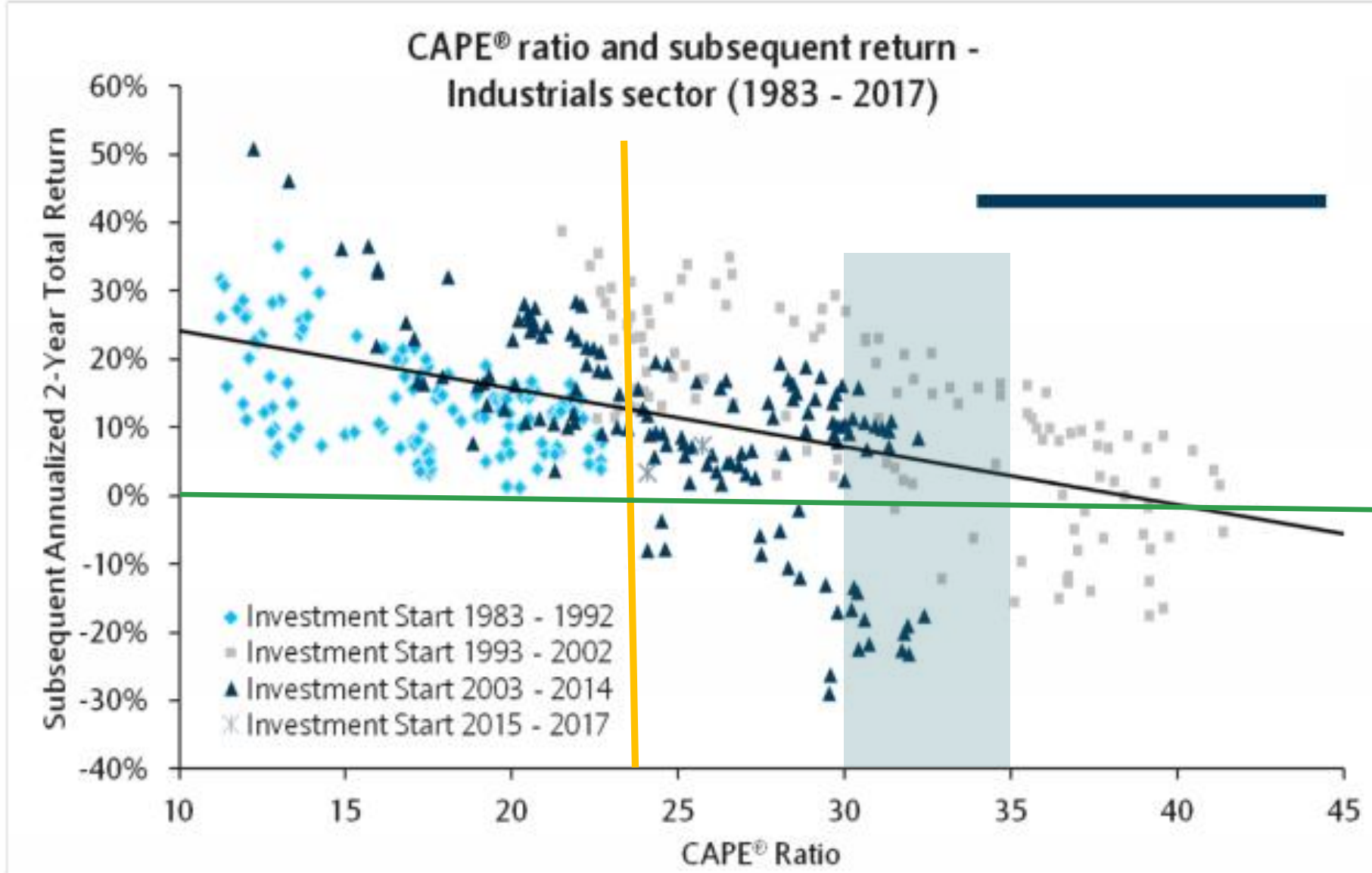


Sources: FRB CCAR 2020 scenario disclosures (<https://www.federalreserve.gov/supervisionreg/ccar-2020.htm>); Thomson Reuters Datastream

S&P 500 Forward 12-Month P/E Ratio: 10 Years (Source: FactSet)



The **Cyclically Adjusted Price to Earnings Ratio**, also known as **CAPE** or the **Shiller PE Ratio**,





CONCLUSION

- The markets were due for a shock, and Coronavirus was just the catalyst
- If contained appropriately, it can be a modest reset of valuations, and a short economic impact
- The risks include that the disease lingers (or gets worse) and it has a longer term impact on the economy
- The Ag market not connected to the general economy, but note the tangential relationships
- The markets' risk/reward trade-off has shifted in favor of reward
- Crisis breeds opportunity in business, and this is likely no different