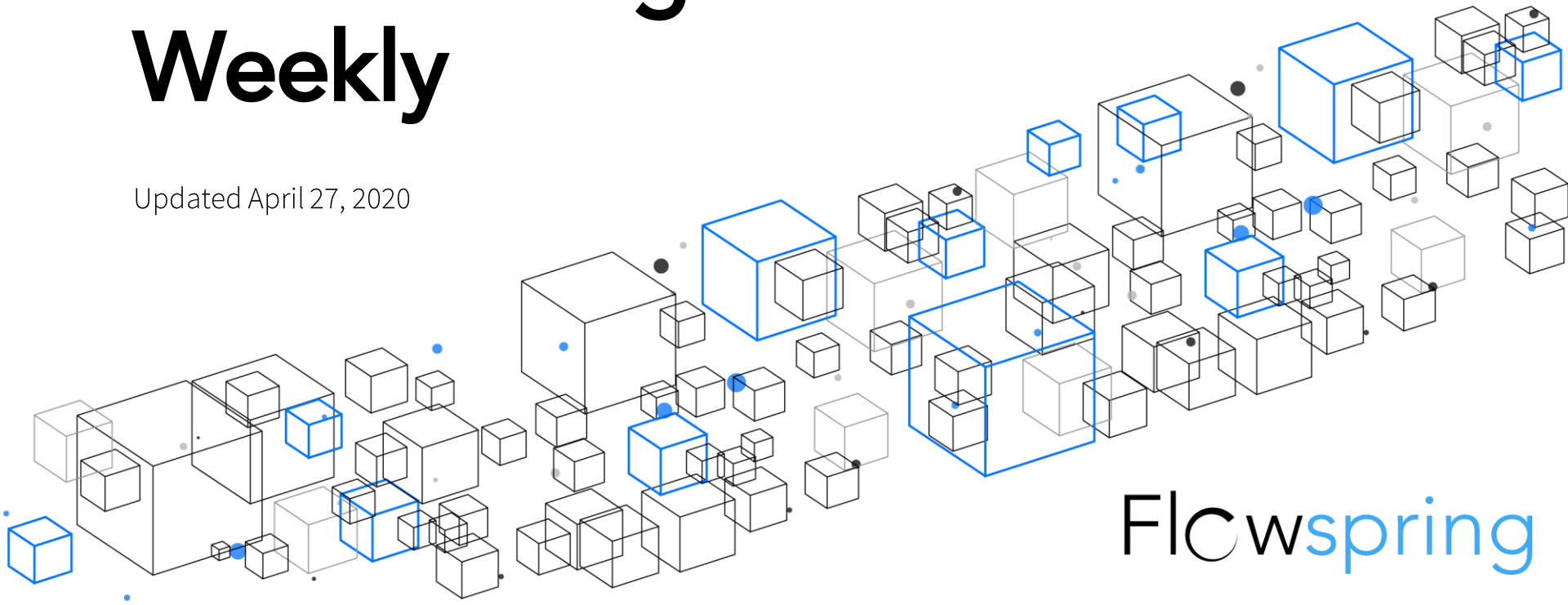


COVID-19 Asset Management Weekly

Updated April 27, 2020



Flcwspring

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Commentary

The new cases in the US rose 29% this week, down slightly from 30% the prior week. While this was a meager improvement, the rate of growth in deaths fell from 72% to 36%. Recoveries also picked up steam, growing 67% from the prior week. Still, in absolute terms, the number of new cases is nearly 5x the number of new recoveries meaning we have not yet reached the peak number of active cases in the US.

Most experts now agree that significant increases in testing capacity are needed before making educated decisions about re-opening the economy. Fortunately, the US performed 49% more tests this week at an average of 224k test per day.

Still, this will not be enough testing to accurately gauge viral levels in the population. Additional studies have confirmed from methods ranging from viral testing of sewage water to randomized antibody testing that most cases are asymptomatic, and that the percent of population that has been infected is higher than current testing reflects. This, counter-intuitively, would be great news as it means the coronavirus is less deadly and our herd immunity is already greater than expected.

Some states have decided to re-open their economies to various degrees led by Georgia. While each state is at a different place on the viral trajectory, none are far enough from a peak that the virus can't begin to grow uncontrollably again.

Measured by seasonally-adjusted initial unemployment claims, the United States has lost 26 million jobs in the last 5 weeks due to the coronavirus shut down. This represents more than 16% of the entire civilian labor force. The speed of this reduction is unprecedented in

modern times, and the natural question in the financial zeitgeist is the shape (V, W, L etc.) of the recovery.

Adding to the confusion is the latest actions of the Federal Reserve who announced a \$2.3 trillion monetary stimulus plan aimed at protecting asset prices and preserving liquidity for high yield borrowers who may otherwise have fallen short of commitments. This has led to an increasing disconnect between asset prices which are artificially propped up, and the deteriorating economy.

Still, as the viral growth rates have slowed, so have the measures of fear in the market subsided. However we are not back to "normal" levels yet, and the VIX, for example, remains elevated at 33.

Asset managers are experiencing some acceleration in long-running trends like the pursuit of low-cost investment products. While other trends, namely the emphasis on ESG investing, have faltered as investors put their social concerns in the back seat.

In normal times, investors spend an average of 1 hour per month thinking about their investment portfolio. Those numbers spike dramatically in crisis times as they reconsider everything from asset allocation to security selection. Asset managers should consider that an enormous amount of assets are now "up-for-grabs" as investors are trying to align their portfolios with their new expectations. Asset managers that can align their product, marketing and distribution teams to capture these assets (and hold on to their existing investors) will grow rapidly and have much better competitive positioning in the ensuing recovery.

Summary of the week of April 20th

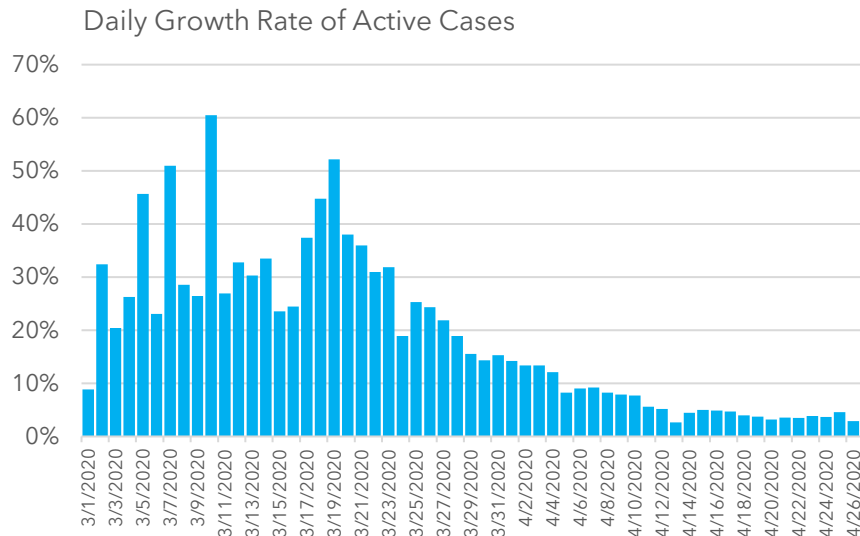
	US	Global
New Cases	221,709	585,560
New Recovered	47,528	251,639
New Deaths	14,795	41,769

New cases and deaths in the US and globally have slowed on a percentage basis. However, new deaths grew on an absolute basis.

Newly recovered cases grew in the US on both an absolute and percentage basis. However, new cases still outpaced new recoveries by 4.7x.

On a positive note, testing capacity increased for the first time in weeks, reaching an average of 224k per day in the past week. Significant increases are still needed to reach a level of testing that accurately reflects population-wide infection levels, but this is a step in the right direction.

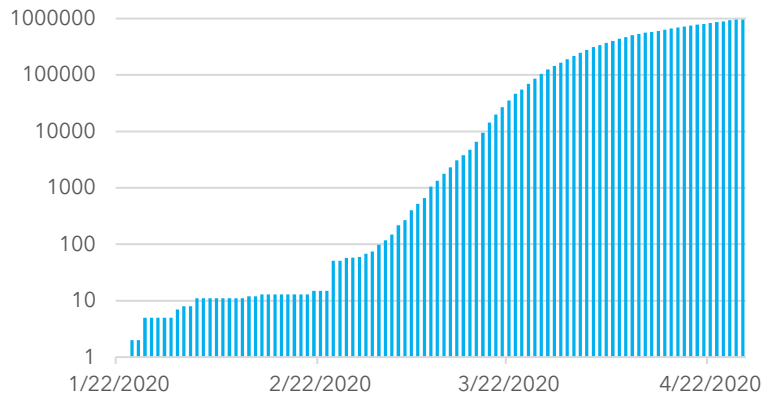
Deaths in the US, which are a better reflection of true cases, have declined in percentage terms from 72% to 36%, and for the very first time in absolute terms as well from 17k to 14.8k.



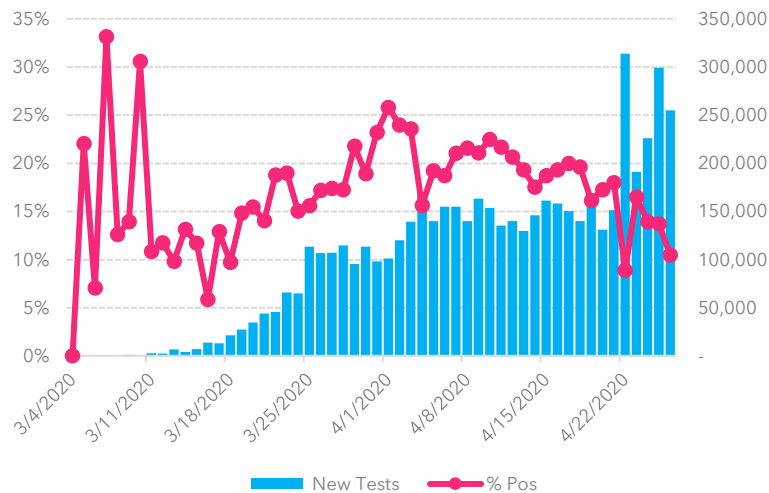
Sources: <http://worldometers.info/coronavirus/coronavirus-cases>

COVID-19 crisis to date

US Case Count



Number of Tests per Day and Percent Positive for SARS-CoV-2



November 17: First COVID-19 case originated in a 55-year old man in China's Hubei province

December 31: China confirms they are treating dozens of cases of a new virus

January 11: China reports first death from SARS-COV-2, a 61-year-old man

January 20: First confirmed cases outside mainland China appear in Japan, South Korea, and Thailand

January 21: First case confirmed in United States

January 23: Wuhan, China cut off by Chinese authorities

January 30: WHO declares global health emergency

February 2: First death reported outside of China

February 5: The Diamond Princess cruise ship is quarantined in Japan

February 6: First death in United States

February 14: First death in Europe

March 3: Federal Reserve cuts interest rates by 50 basis points

March 13: President Trump declares a national emergency

March 16: Federal Reserve cuts interest rates to 0%

March 18: President Trump signs coronavirus relief package into law

March 25: Congress passes \$2 trillion fiscal stimulus bill

March 26: US reports a record 3.3 million new unemployment claims

March 31: US deaths surpass China

April 3: CDC Urges Americans to wear masks when outside their homes

April 6: New York cases and deaths appear to be slowing

April 6: Prime Minister Boris Johnson moved into intensive care

April 9: Federal Reserve announces \$2.3 trillion lending plan to bolster economy

April 12: Boris Johnson leaves hospital

April 14: President Trump announces the US will halt funding for WHO

April 15: Large-scale protests of stay-at-home orders begin in Michigan

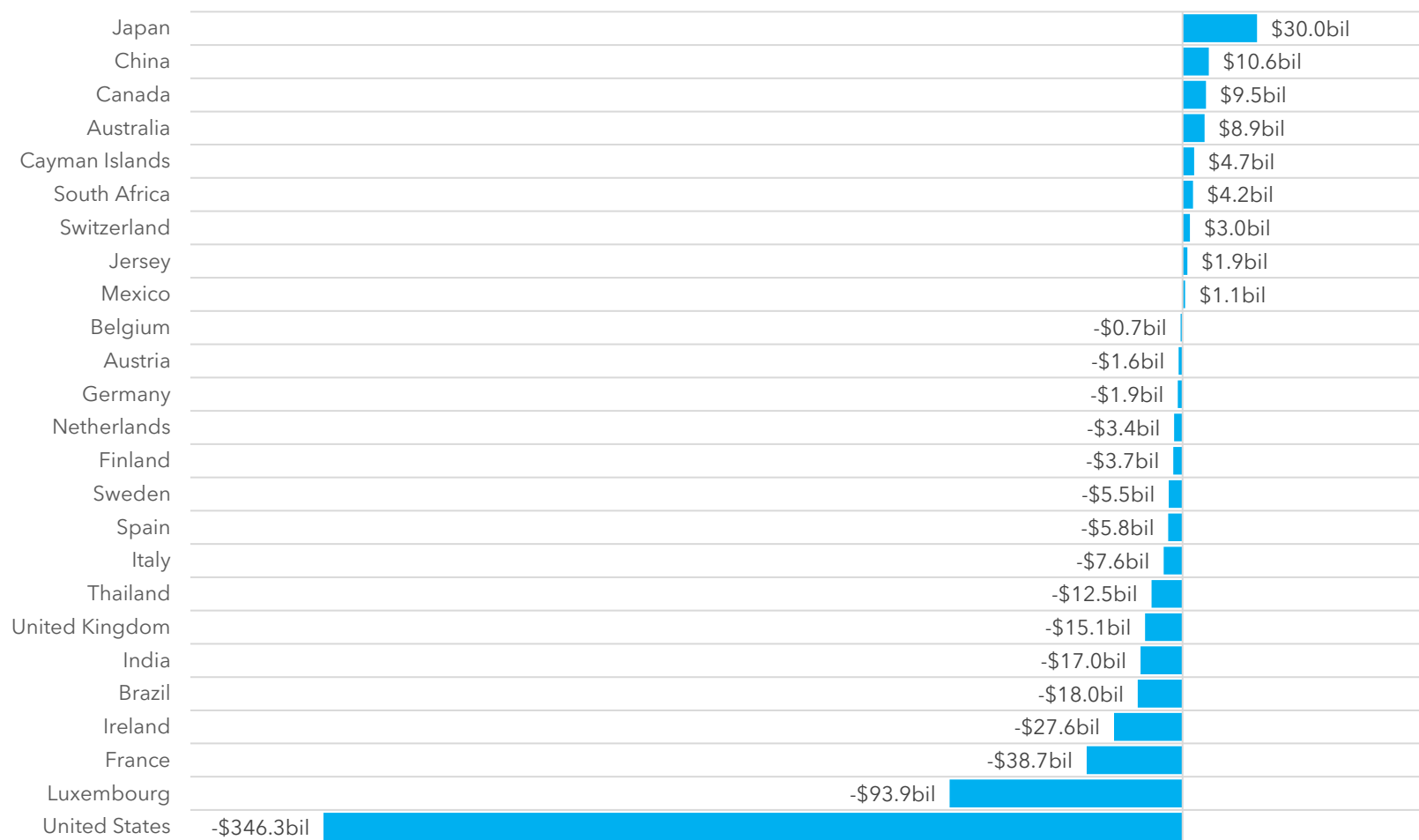
April 16: Trump administration releases guidelines for re-opening the economy

April 20: Trump administration announces suspension of immigration to the US for 60 days

April 21: Autopsy reveals first coronavirus death in US 3 weeks earlier than previously thought

Sources: New York Times, CNN, <http://worldometers.info/coronavirus/coronavirus-cases>

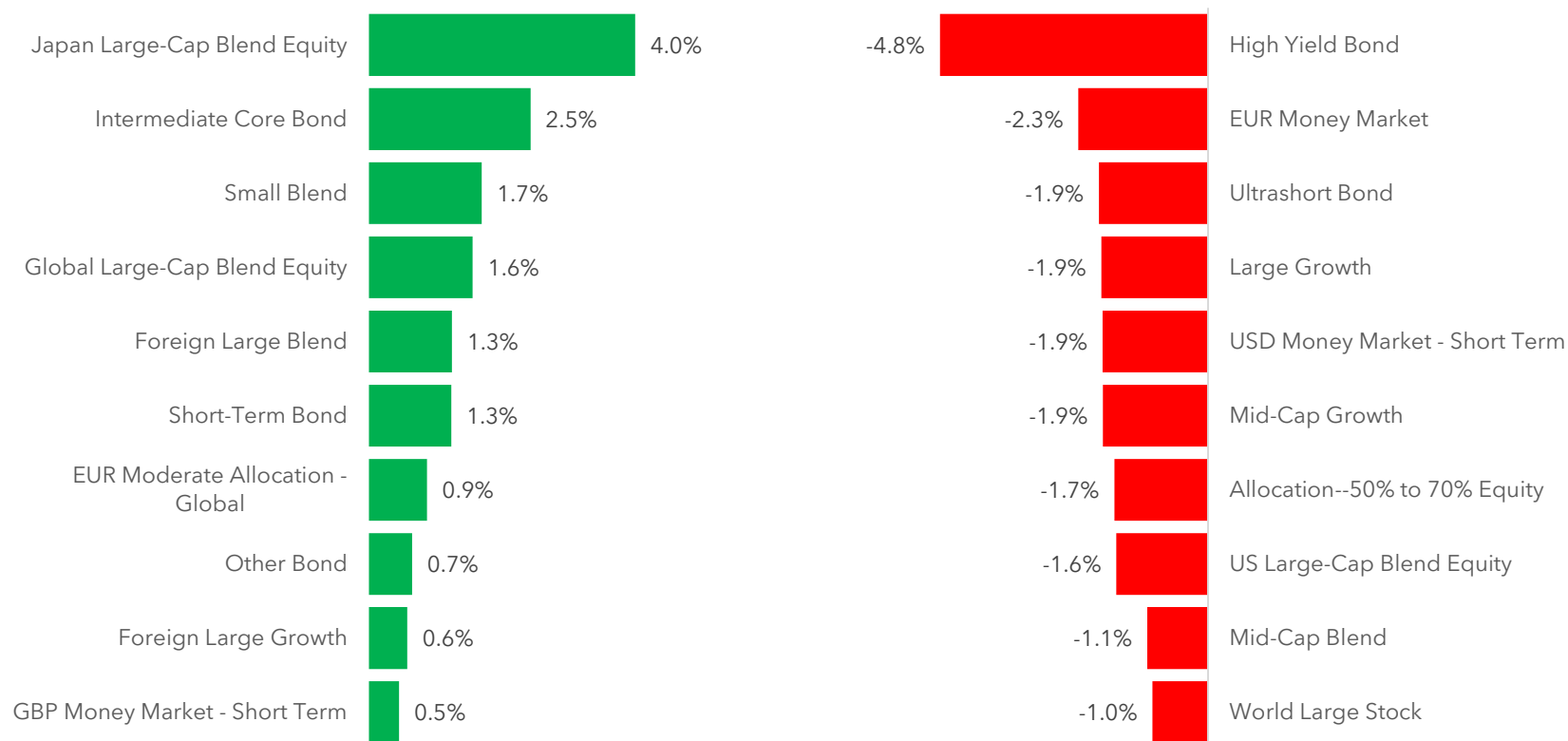
Asset flows by country 2020 YTD



Source: Flowspring Data

Most extreme investor preferences among top 25 categories since first US case confirmed

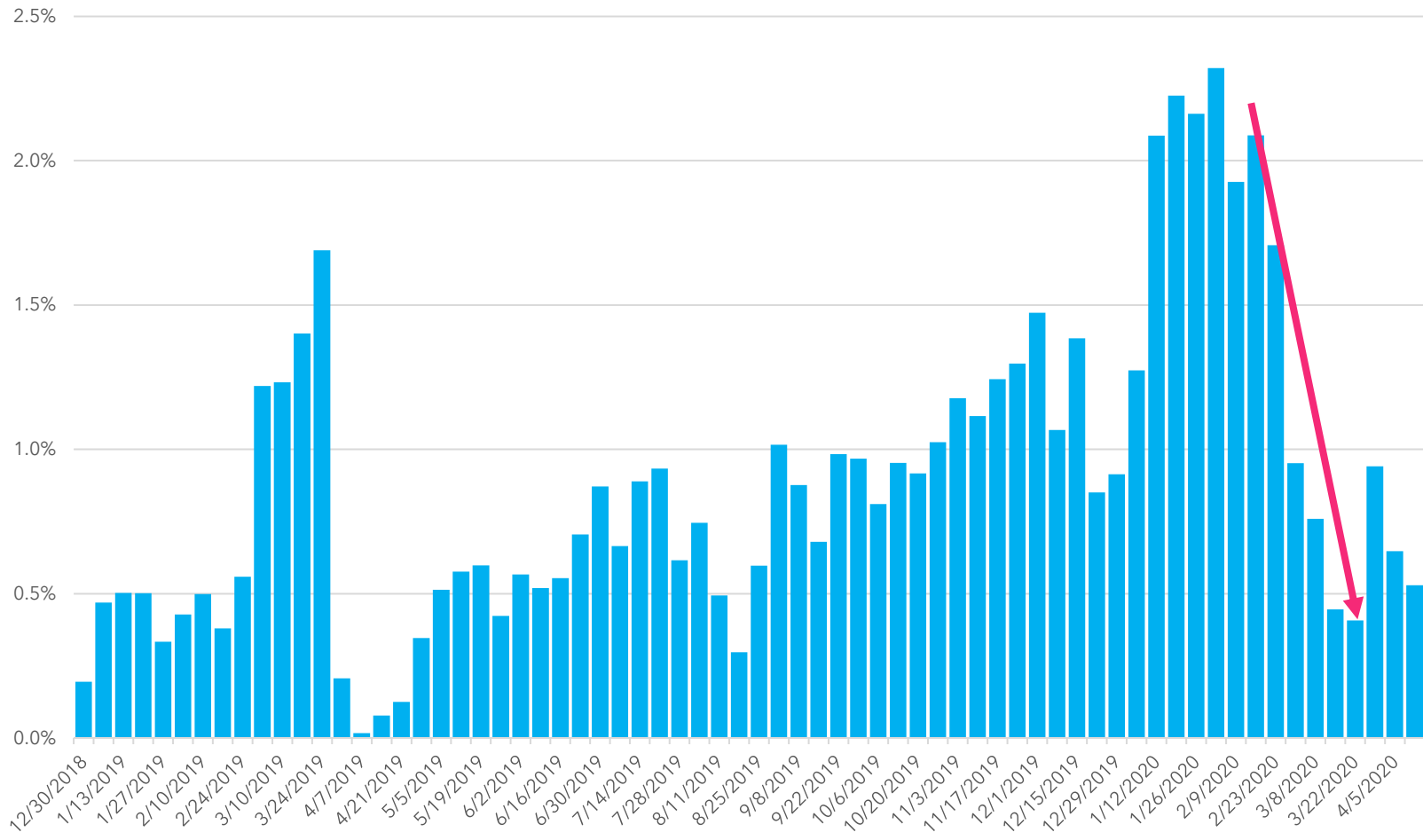
These numbers represent the expected organic growth rate of each category attributable to investors' aggregate preference for that category. With an overarching theme of flight to safety, we are finding investors are also expressing geographic, asset class, and duration preferences while reallocating their assets across various fund categories.



Source: Flowspring Estimates

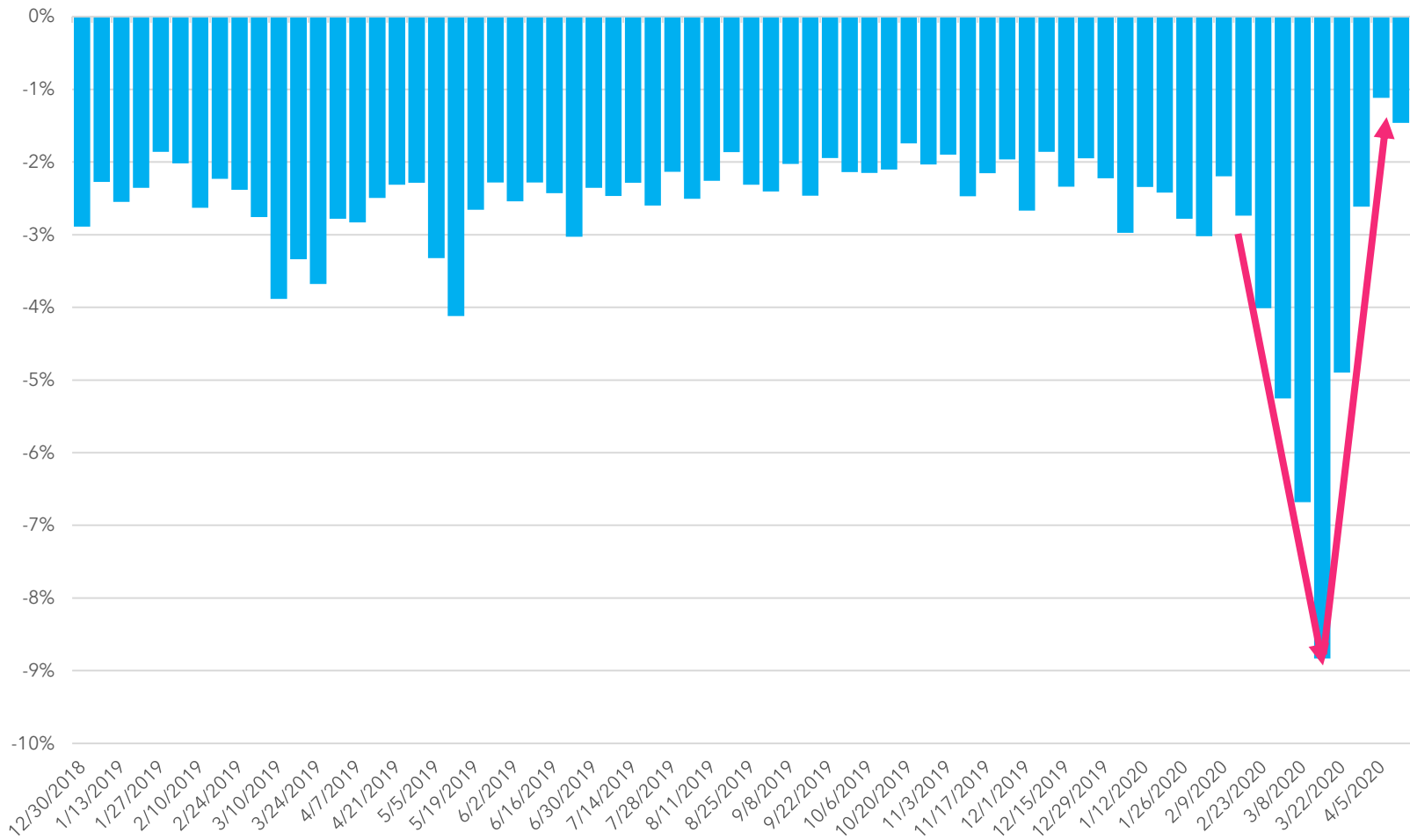
Investor preference for ESG rebounds from unusually low levels

These numbers represent the expected organic growth rate of funds attributable to their investors' preferences for ESG mandates. It seems that investors, while still preferring ESG, place much less emphasis on it when capital markets are declining.



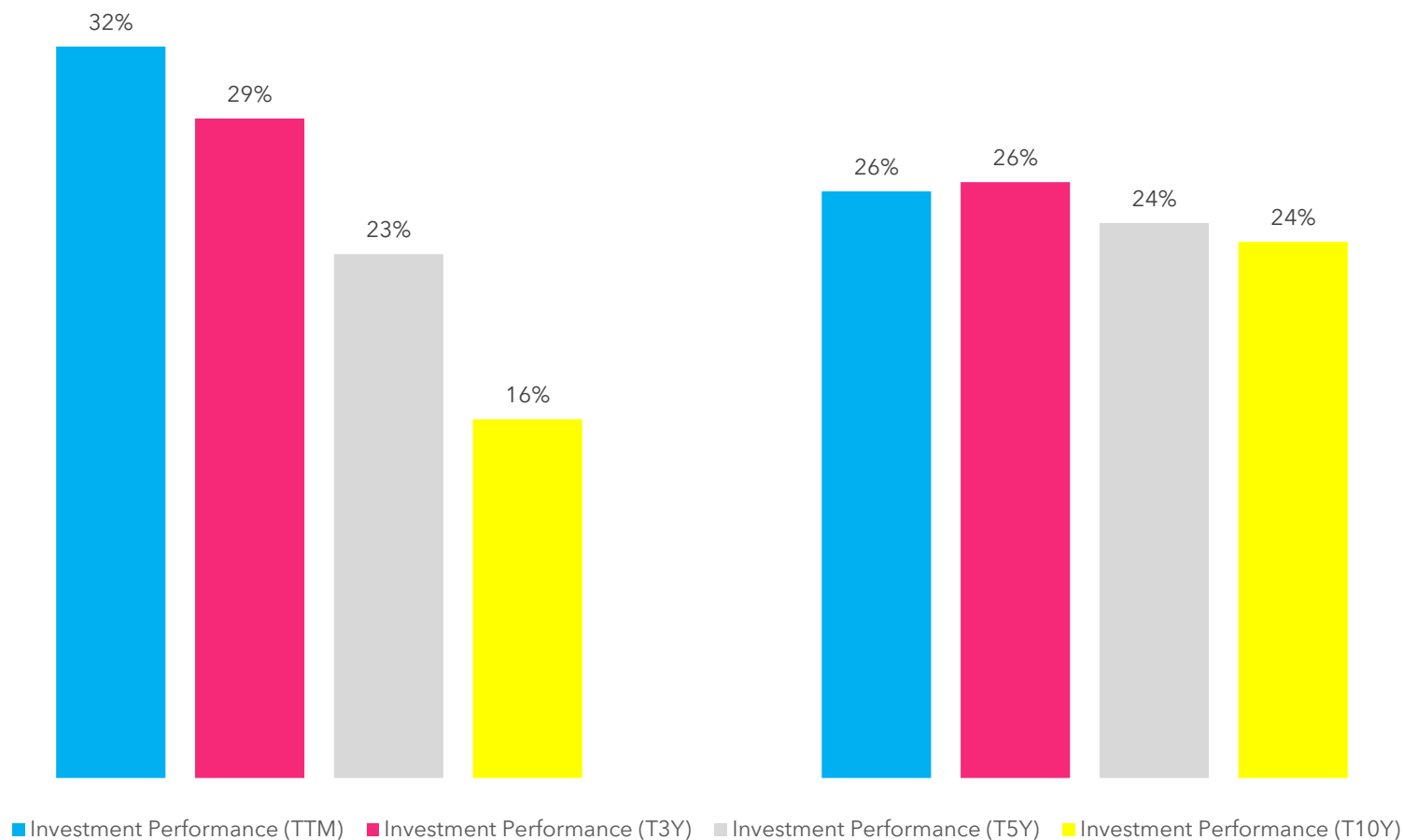
Investor preference for low fees diminishes to normal levels

These numbers represent the expected organic growth rate of funds attributable to their investors' preferences for low expense ratios. Contrary to what many may think, investors are not seeking the expertise of high-cost active managers, but rather accelerating their preference for low-cost passive funds.



Good news: Investors not as short-sighted in pandemic

Typically, investors are driven by recent performance, allowing as much as 32% of their performance-driven flows to be determined by the trailing 1-year results, while only 16% are informed by 10-year results. However, since the pandemic began, investors have placed much greater weight on longer-term returns and less on recent numbers. There's still a long way to go, but this is a move in the right direction.



Flowspring is forecasting the lowest organic growth rates in our history

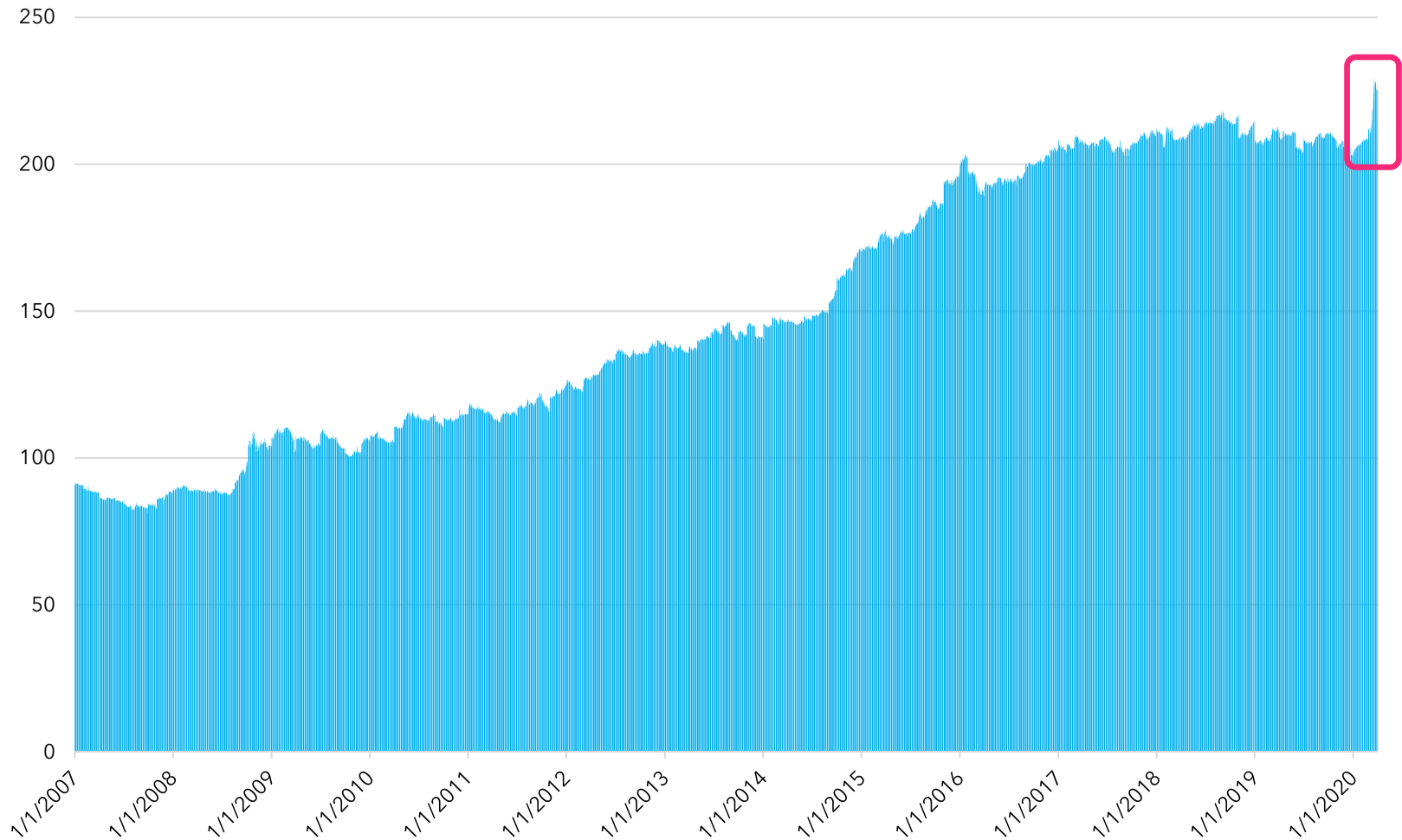
We now expect the industry as a whole to shrink by 4% organically over the next 12-months, with more than 40% of asset managers shrinking by more than 10% on an asset-weighted basis. This is slightly more optimistic than we were last week.



Asset weighted average organic growth forecast for all global investment products for the next 12-month period using Flowspring's proprietary flow forecasting factor model.

Concentration of assets in the asset management industry spikes

As investors pursue low cost passive products, the large asset managers continue to get larger. This is a continuation of a trend that's been in place since the global financial crisis but had plateaued in 2019. The largest 1% of asset managers now manages 226x the amount of assets that the smallest 50% of asset managers manages.



Largest flows among major fund families since first US Case

Flow (Since 2020-02-01)	From	To
22,374,973,912	iShares	Vanguard
12,950,346,698	State Street	iShares
11,654,980,853	T. Rowe Price	Vanguard
11,608,401,373	Invesco	Vanguard
9,638,025,552	Invesco	iShares
9,154,964,563	Fidelity	iShares
8,634,528,232	Dimensional	Vanguard
8,418,021,617	T. Rowe Price	iShares
7,158,153,483	iShares	Charles Schwab
6,617,220,820	JPMorgan	Vanguard
6,312,131,192	Fidelity	Invesco
6,184,329,690	State Street	Vanguard
6,050,144,380	Natixis	Vanguard
4,913,075,592	American Funds	Fidelity
4,533,243,073	Invesco	JPMorgan
4,447,117,889	BlackRock	Vanguard
4,416,455,357	JPMorgan	American Funds
4,238,231,381	John Hancock	Fidelity
4,009,199,519	Invesco	American Funds
3,894,495,403	TIAA	Vanguard
3,850,654,362	Bradesco	Itaú
3,697,227,342	PIMCO	Vanguard
3,611,111,318	T. Rowe Price	TIAA
3,351,244,675	PIMCO	Fidelity
3,252,198,339	T. Rowe Price	State Street
3,176,917,993	American Century	Vanguard
3,087,354,045	SEI	Vanguard
3,021,342,985	JPMorgan	TIAA
2,997,002,403	Jackson National	Fidelity
2,969,438,170	Invesco	MFS
2,963,309,170	Franklin Templeton	American Funds
2,835,396,146	T. Rowe Price	Invesco
2,804,517,248	Itaú	Caixa
2,737,358,867	Natixis	Fidelity
2,703,484,898	Principal	Vanguard
2,654,992,874	Invesco	BlackRock
2,625,052,784	GMO	Fidelity
2,624,753,925	Franklin Templeton	JPMorgan
2,617,236,416	Franklin Templeton	Vanguard
2,604,553,359	American Funds	State Street
2,586,712,638	Matthews	Vanguard
2,402,825,369	Natixis	PIMCO
2,364,539,496	Harbor	Vanguard
2,289,166,848	Fidelity	State Street
2,257,446,918	Invesco	State Street
2,211,929,673	American Funds	iShares
2,096,970,293	Eurizon	Pramerica
2,044,493,081	State Street	Charles Schwab
2,031,925,006	John Hancock	American Funds
2,010,759,326	T. Rowe Price	American Funds

Vanguard is the big winner of competitive flows thus far in 2020, winning huge amounts of capital from iShares, State Street, Invesco, and JPMorgan.

However, iShares isn't asleep – they've done well against Invesco, State Street, T. Rowe Price, and Xtrackers over this time period. We expect asset flows to be even more impactful as the volatility in capital markets dies down and investors contemplate their asset class allocation and fund selections in the wake of this crisis.

Source: Flowspring Estimates

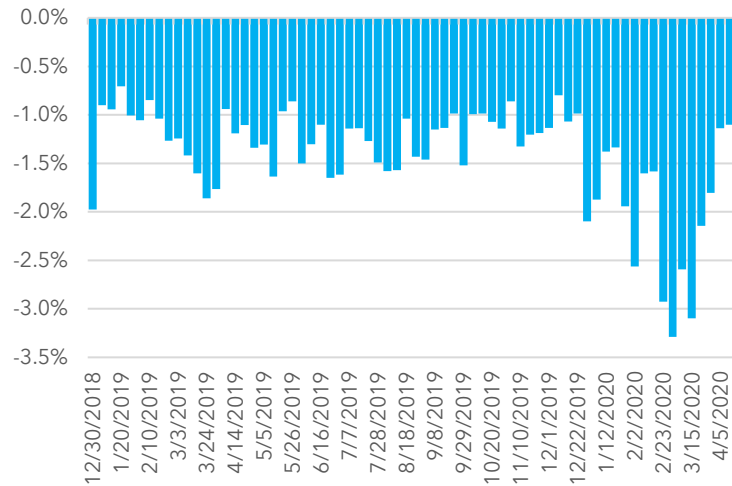
Fund family asset changes 2020 YTD

Fund Family	Asset Change	Asset Growth	Organic Growth	Capital Appreciation
T. Rowe Price	-231,607,770,592	-26.4%	-13.6%	-12.8%
Natixis	-70,237,466,809	-24.4%	-9.5%	-14.9%
Dimensional	-107,991,443,015	-21.8%	-2.1%	-19.7%
Bradesco	-38,979,696,749	-19.5%	-6.7%	-12.8%
Itaú	-60,616,270,292	-19.3%	-2.5%	-16.8%
Amundi	-83,426,660,264	-16.7%	-7.9%	-8.8%
Jackson National	-38,009,262,069	-16.3%	-1.8%	-14.5%
Invesco	-120,372,941,702	-16.3%	-4.8%	-11.5%
John Hancock	-30,876,390,223	-16.1%	-2.0%	-14.1%
Goldman Sachs	-40,749,381,881	-15.7%	6.4%	-22.1%
AllianceBernstein	-31,412,760,957	-15.6%	-3.1%	-12.5%
BNP Paribas	-32,906,020,328	-15.4%	-4.2%	-11.2%
BB	-49,803,330,298	-15.3%	3.3%	-18.7%
Charles Schwab	-41,109,352,409	-14.7%	1.3%	-16.0%
iShares	-320,052,338,464	-14.0%	0.2%	-14.3%
MFS	-50,130,064,237	-13.9%	0.0%	-13.9%
AXA	-35,188,288,925	-13.4%	-2.3%	-11.2%
UBS	-53,618,301,460	-12.8%	-2.2%	-10.6%
State Street	-111,469,594,950	-12.5%	0.3%	-12.7%
American Funds	-248,378,083,110	-12.4%	-0.8%	-11.7%
DWS	-32,623,029,365	-12.3%	-2.3%	-10.0%
BlackRock	-99,750,157,161	-10.8%	-1.7%	-9.1%
JPMorgan	-80,784,724,438	-9.7%	0.1%	-9.8%
Fidelity	-142,085,916,353	-5.8%	-1.6%	-4.3%
Vanguard	-294,880,837,476	-4.7%	-0.2%	-4.6%

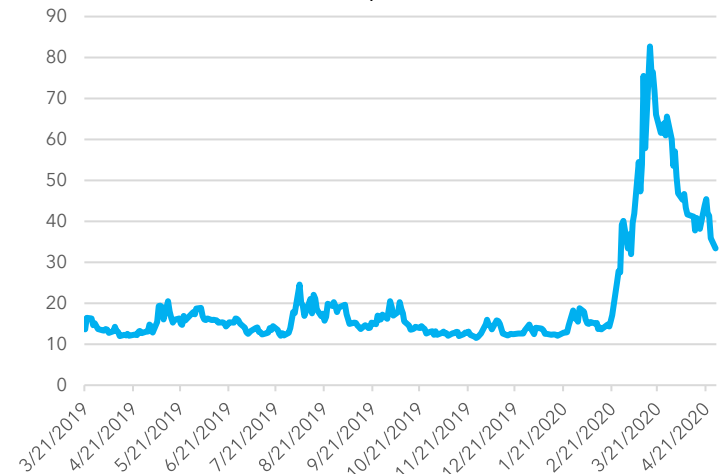
Source: Flowspring Data

Investor fear has moderated, but not fully receded

Annualized weekly investor preference for high volatility funds vs low volatility funds



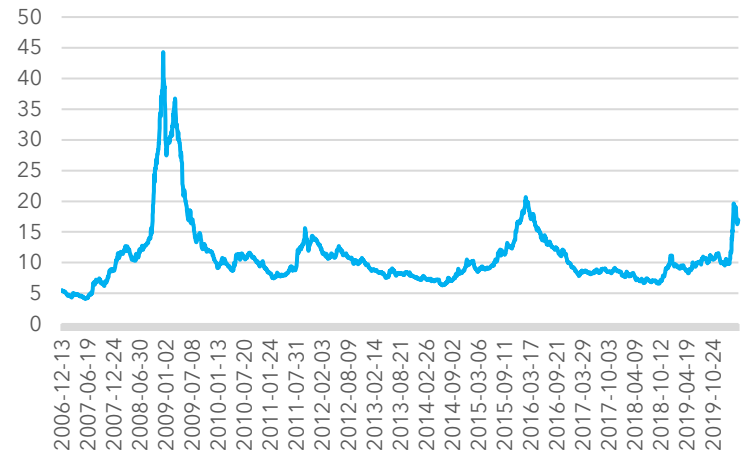
VIX Volatility index



St. Louis Fed Financial Stress Index

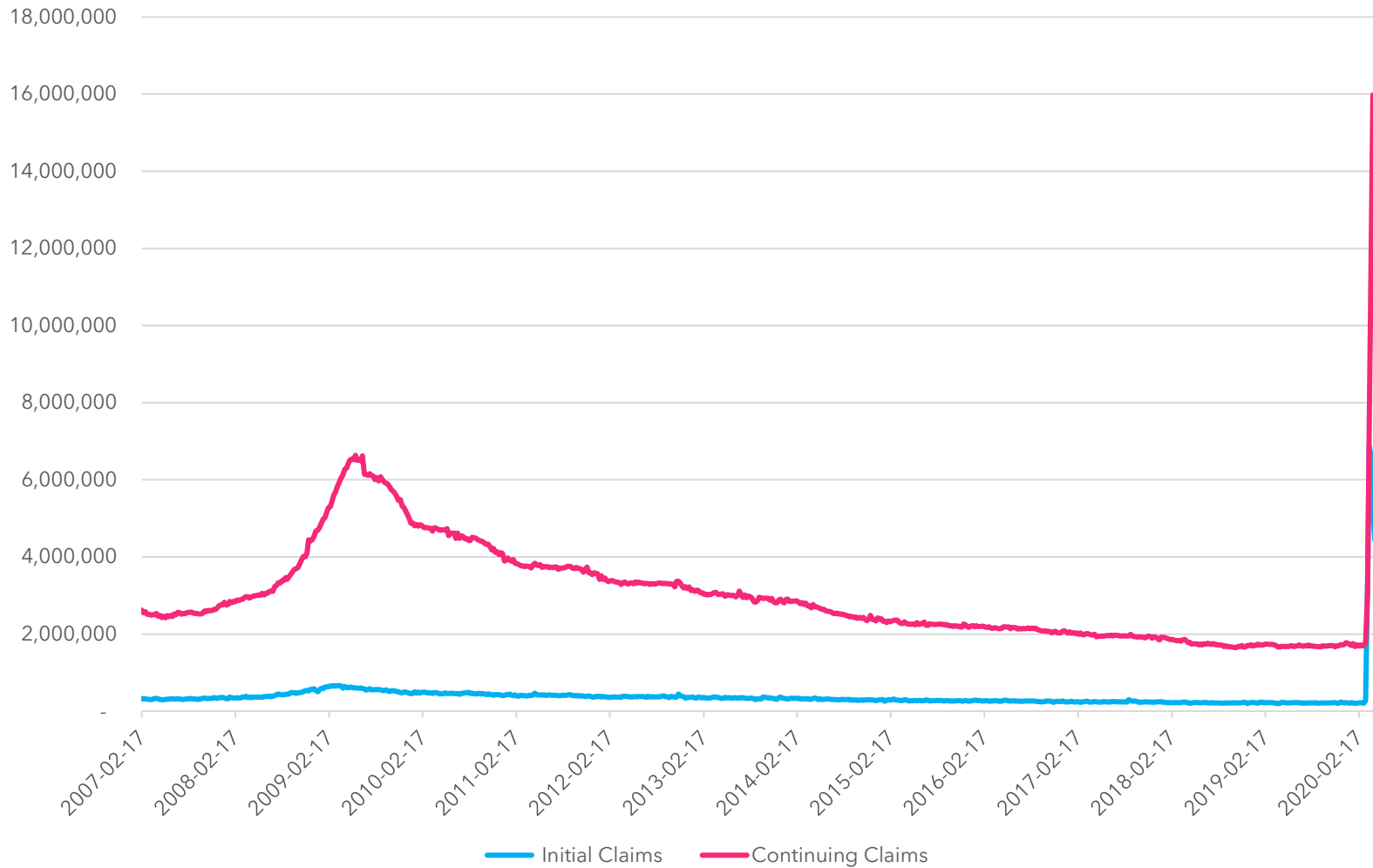


BAML Option Adjusted High Yield Spread



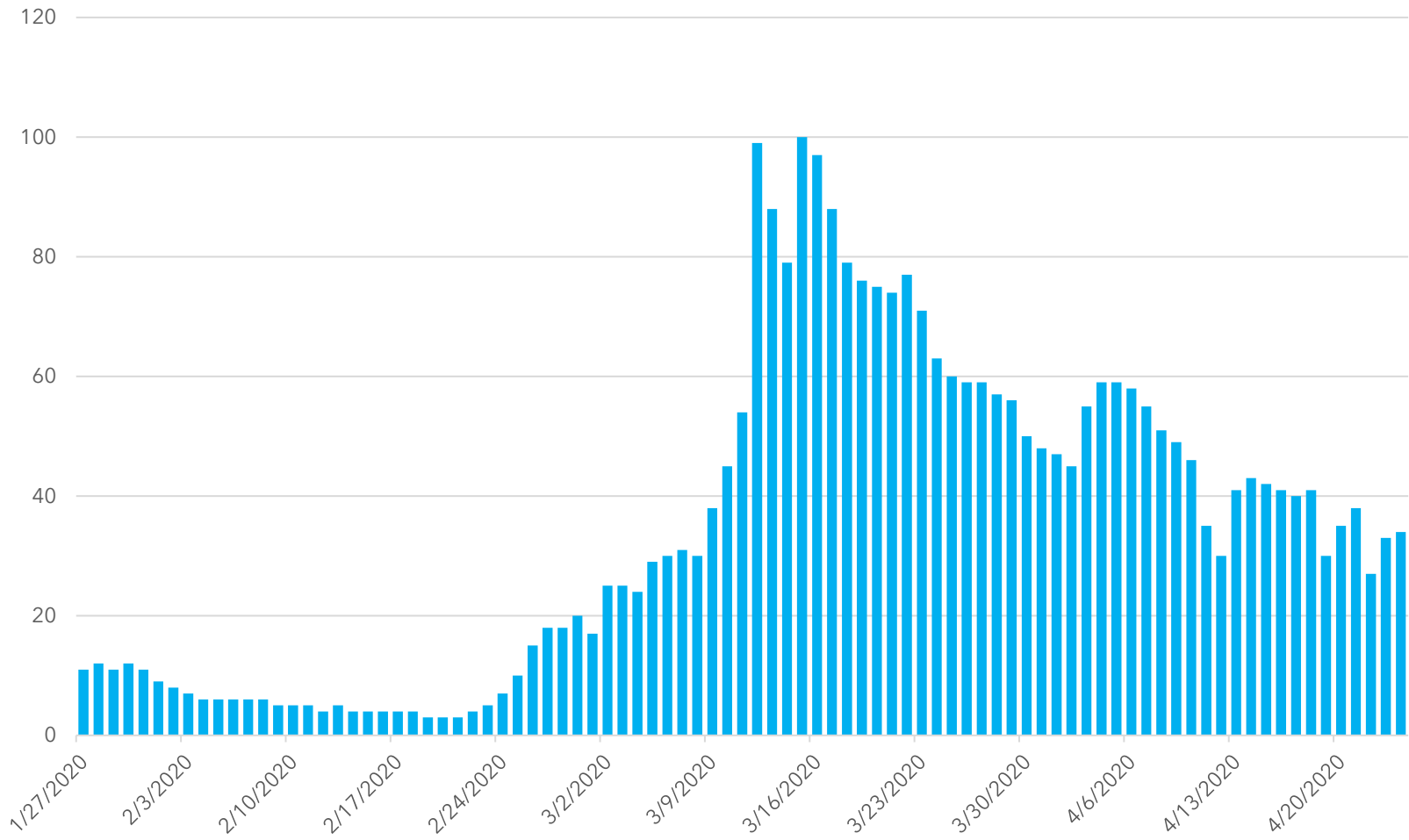
Source: St. Louis Federal Reserve

Weekly unemployment claims have skyrocketed to record levels



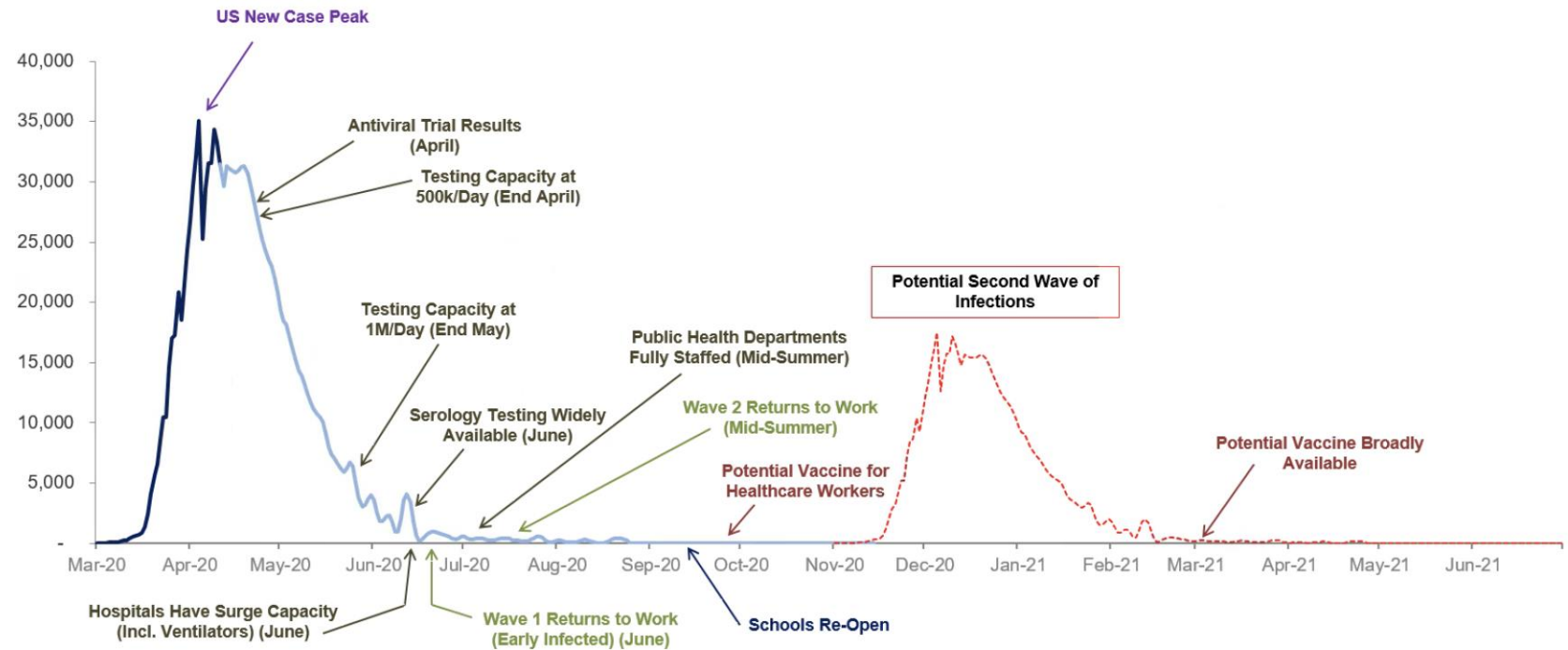
Coronavirus saturation?

Google searches for the term "coronavirus" peaked on March 15 and have been experiencing a moderate decline ever since indicating that the populous may have developed a base-level of knowledge necessary to understand the disease, but no longer actively pursue new developments related to the novel coronavirus.



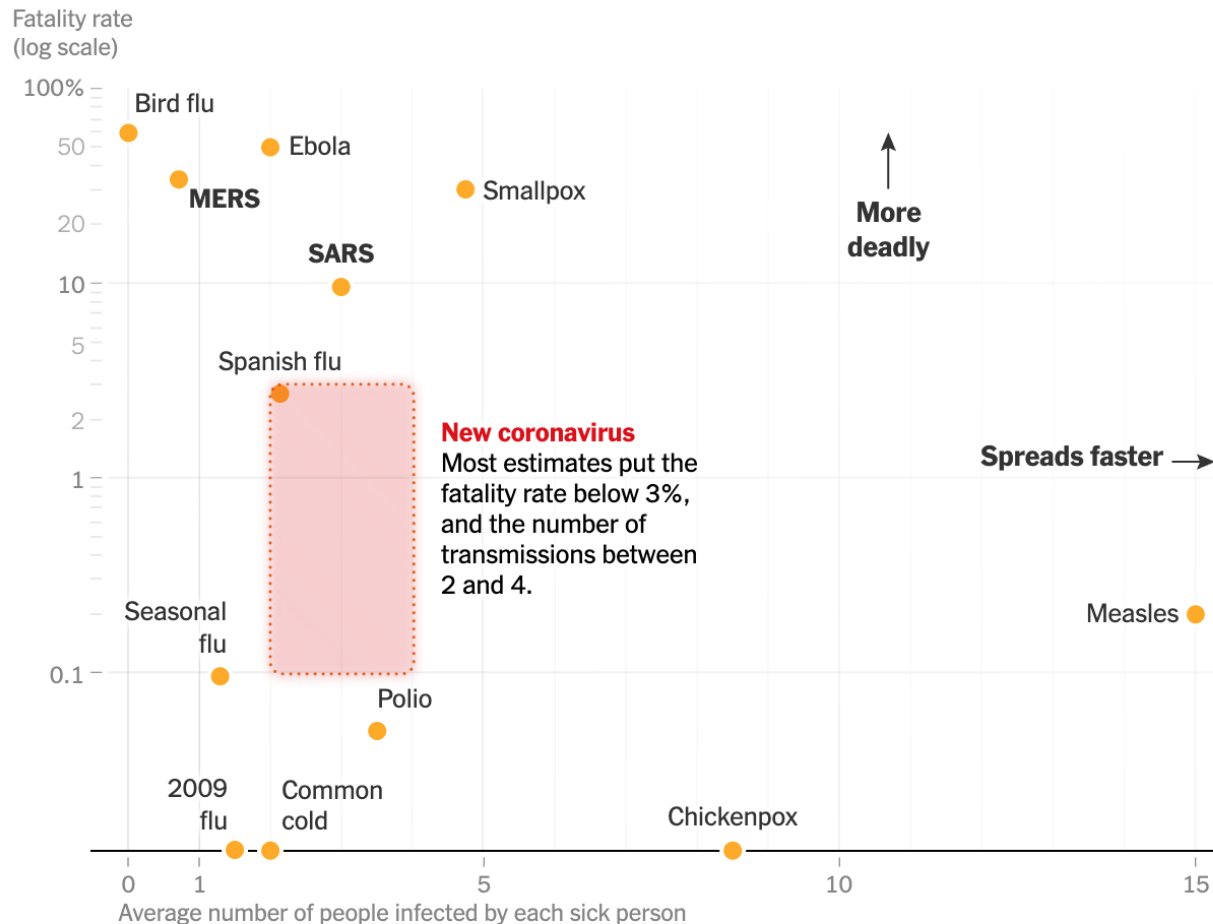
A possible timeline for future developments

“To analyze management of the coronavirus in the U.S., we recently completed a state-level model that suggests a multiphasic peak. In particular, we expect the coastal regions, led by New York, to peak in mid- to late-April. However, we expect the rest of the country to follow slowly, trailing the coasts by around three weeks.” – Matthe Harrison – Morgan Stanley Research



Source: Matthew Harrison – Morgan Stanley Research

SARS-CoV-2 transmission and deadliness



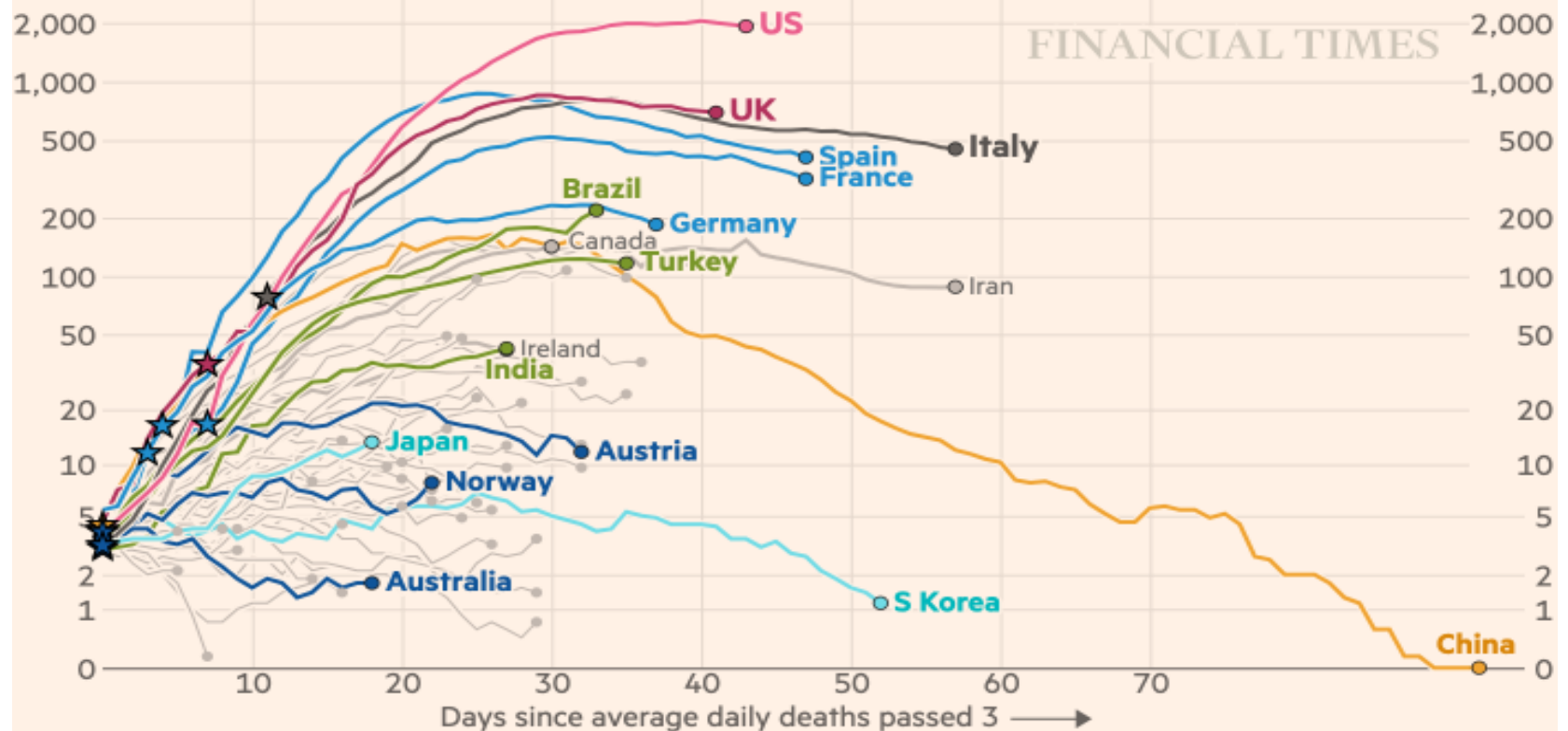
Note: Average case-fatality rates and transmission numbers are shown. Estimates of case-fatality rates can vary, and numbers for the new coronavirus are preliminary estimates.

Source: New York Times

Country trajectories

Daily death tolls are now at their peak or falling in many western countries

Daily coronavirus deaths (7-day rolling avg.), by number of days since 3 daily deaths first recorded



FT graphic: John Burn-Murdoch / @jburnmurdoch

Source: FT analysis of European Centre for Disease Prevention and Control; FT research. Data updated April 25, 20:16 BST

© FT

Source: Financial Times

Glossary

COVID-19 (Coronavirus Disease 2019) is the infections disease caused by the virus SARS-CoV-2 (Severe Acute Respiratory Syndrome Coronavirus 2). Originating in Wuhan, China, the spread of SARS-CoV-2 has led to a pandemic which has affected nations on 6 of the 7 continents.

R_0 is the basic reproduction number of a virus. It represents the number of people an infected person can expect to pass the infection to.

CFR is the case fatality rate. It represents the expectation for the percentage of infected cases that will end in death.

Helpful links regarding coronavirus information

Best Dashboards for Monitoring Global Cases

<https://coronavirus.1point3acres.com/>

<https://gisanddata.maps.arcgis.com/apps/opsdashboard/index.html#/bda7594740fd40299423467b48e9ecf6>

<https://www.worldometers.info/coronavirus/coronavirus-cases/>

World Health Organization (WHO) page on COVID-19

<https://www.who.int/emergencies/diseases/novel-coronavirus-2019>

US CDC COVID-19 page

<https://www.cdc.gov/coronavirus/2019-nCoV/index.html>

Epidemic Calculator – Enter your Assumptions, see how the epidemic unfolds

<https://gabgoh.github.io/COVID/index.html>

General Information

https://en.wikipedia.org/wiki/Coronavirus_disease_2019

https://en.wikipedia.org/wiki/Severe_acute_respiratory_syndrome_coronavirus_2

<https://www.soa.org/globalassets/assets/files/resources/research-report/2020/2020-covid-19-research-brief.pdf>