Global Credit Conditions
Triple Trouble: Virus, Oil, Volatility

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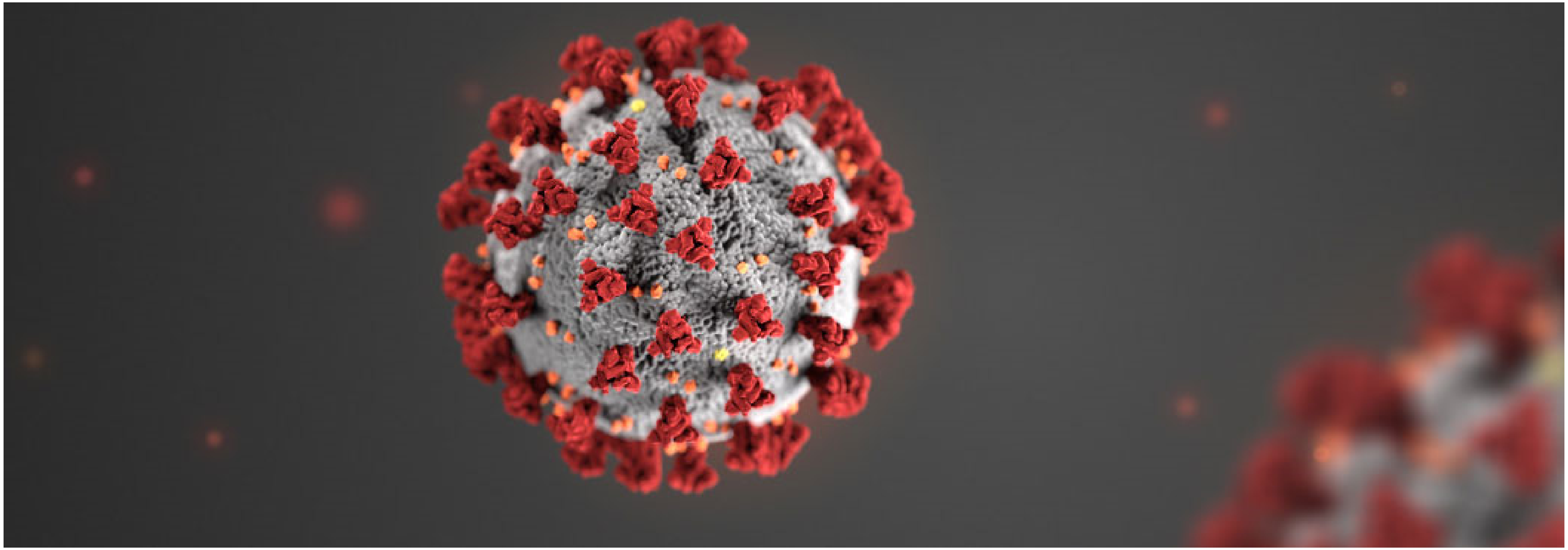
Apr. 1, 2020



S&P Global
Ratings

Triple Trouble | Contents

S&P Global Ratings acknowledges a high degree of uncertainty about the rate of spread and peak of the coronavirus outbreak. Some government authorities estimate the pandemic will peak about midyear, and we are using this assumption in assessing the economic and credit implications. We believe the measures adopted to contain COVID-19 have pushed the global economy into recession (see our macroeconomic and credit updates here: www.spglobal.com/ratings). As the situation evolves, we will update our assumptions and estimates accordingly.

Triple Trouble | Virus, Oil, and Volatility

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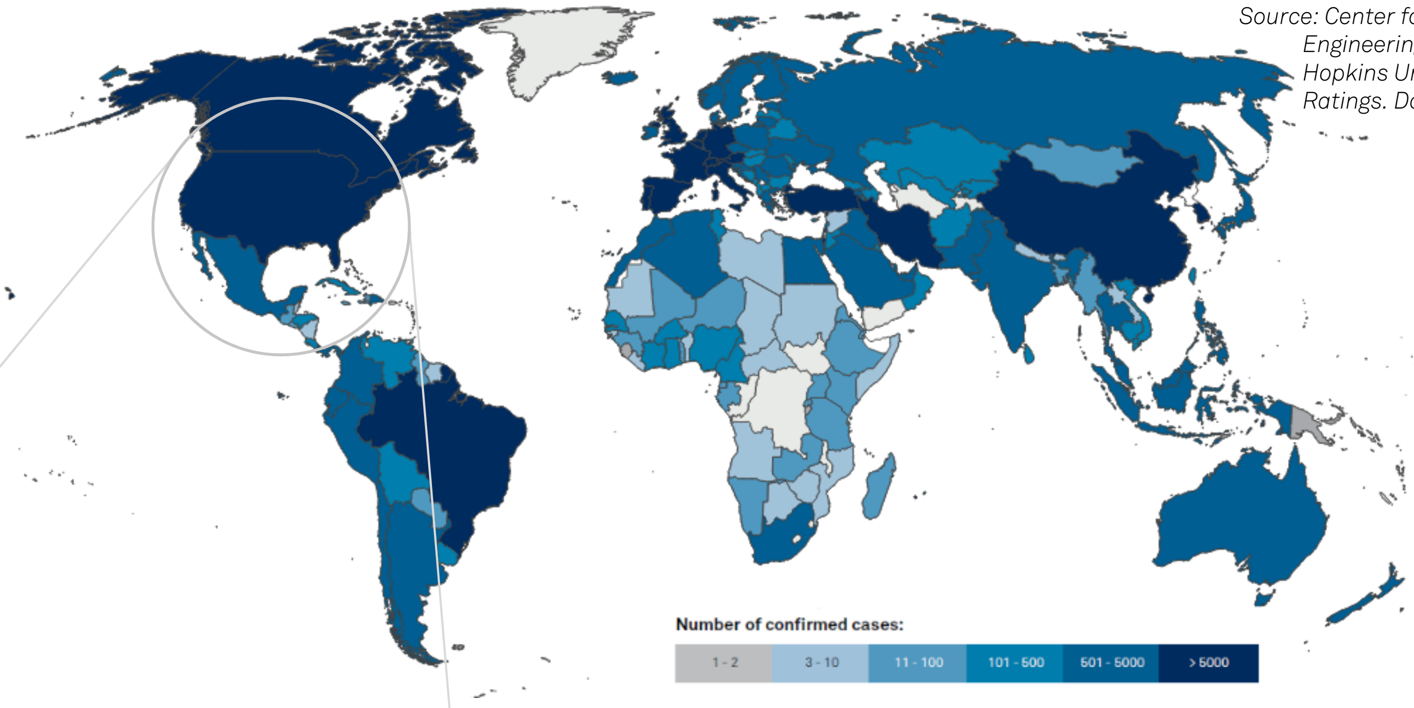
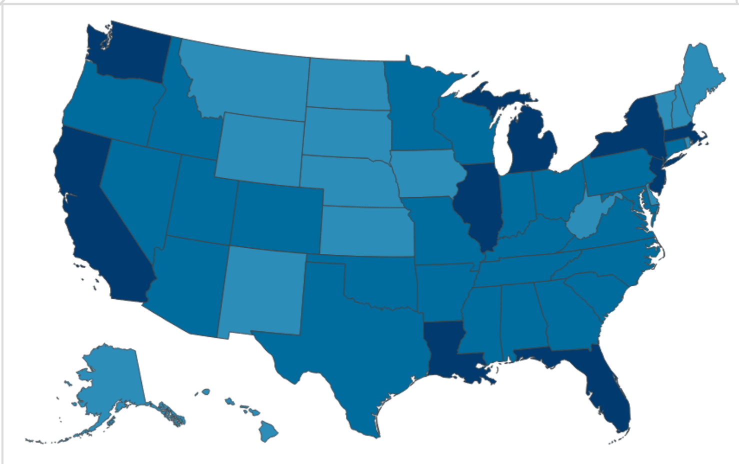
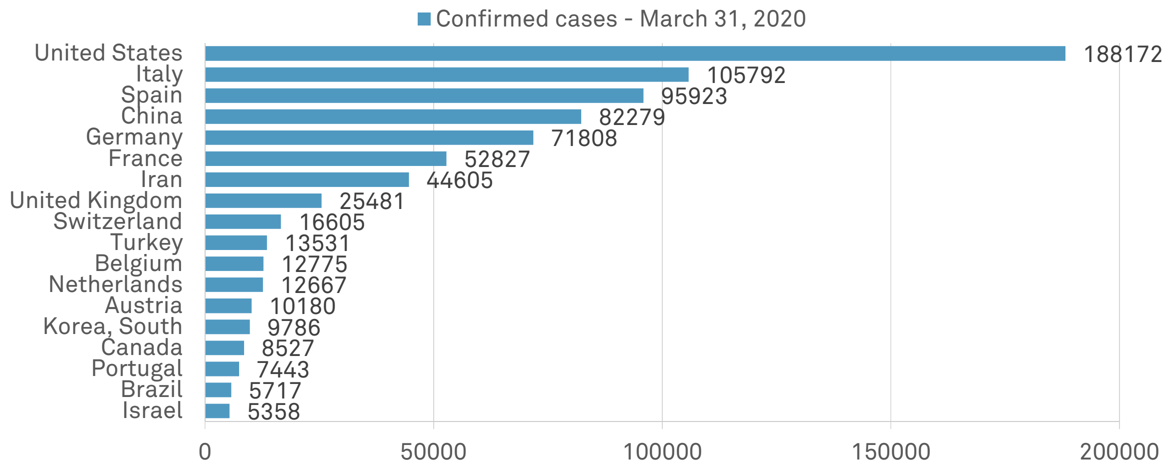
- **Containment measures** to stem the COVID-19 pandemic have **pushed the world's largest economies into near-hibernation**. While China shows early signs of re-emerging from this, Europe and the U.S. aren't yet past the viral peak. We have also yet to see the full impact on vulnerable emerging markets.
- Combined with historical **collapse in oil prices**, and **record volatility** in the markets, this put significant pressure on creditworthiness around the world.
- Industries most exposed to the dramatic drop in global demand and much tighter financing conditions have experienced the most **downgrades** so far.
- We expect companies rated 'B-' and below will likely suffer most from rapid rating transitions, while the investment-grade segment is showing some **resilience**.
- We estimate a **surge in the corporate speculative-grade default rate to above 10% in the U.S.** and into the high single digits in Europe.
- The **massive policy response** from central banks and governments around the world is likely to soften the blow, particularly with regard to financial market liquidity.
- **Credit pressure is building up on emerging markets** from U.S. dollar strength, massive capital outflows, commodity price falls, and the economic and health impact of COVID-19.
- **A severe but relatively short economic contraction** (our base case) will mostly affect weaker credits or those in the most directly exposed sectors. But a prolonged recession, beyond our base case, would have broader implications.

COVID-19's Global Spread | 874k Cases, 180 Countries and U.S. now the epicenter

Source: Center for Systems Science and Engineering (CSSE) at Johns Hopkins University, S&P Global Ratings. Data as of Mar. 31, 2020.







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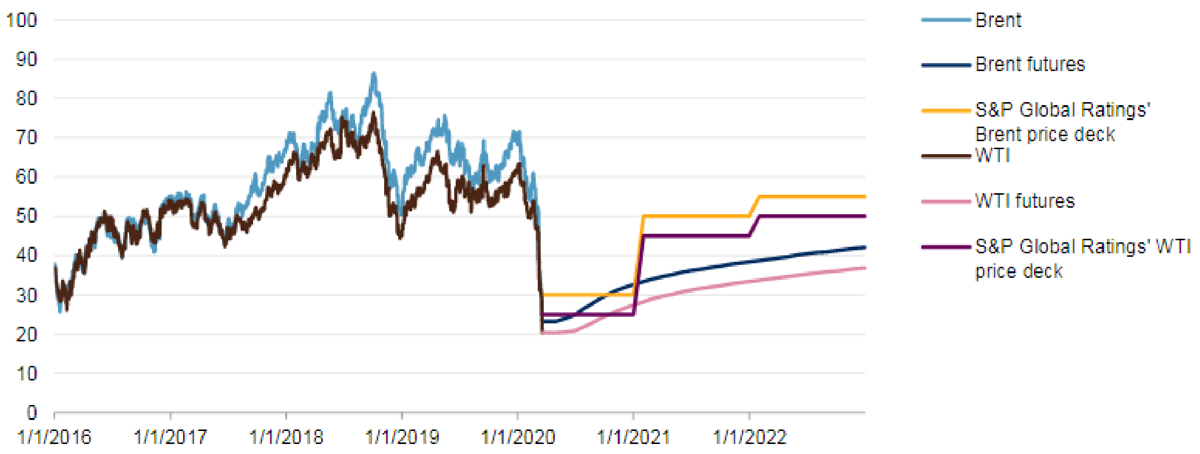
Oil & Gas | S&P Cuts WTI And Brent Crude Oil Price Assumptions Amid Continued Near-Term Pressure

S&P Global Ratings' Oil And Natural Gas Price Assumptions

	New prices				Old prices			
	Brent	WTI	Henry Hub	AECO Hub	Brent	WTI	Henry Hub	AECO Hub
	$/bbl	$/bbl	$/mmBtu	$/mmBtu	$/bbl	$/bbl	$/mmBtu	$/mmBtu
2020	30	25	2.00	1.25	40	35	2.00	1.25
2021	50	45	2.25	1.5	50	45	2.25	1.5
2022 and beyond	55	50	2.50	1.5	55	50	2.50	1.5

Prices are rounded to the nearest $5/bbl and $0.25/mmBtu.
bbl--Barrel. WTI--West Texas Intermediate. mmBtu--Million British thermal units. Source: S&P Global Ratings.

Crude Oil Prices 2016-2022



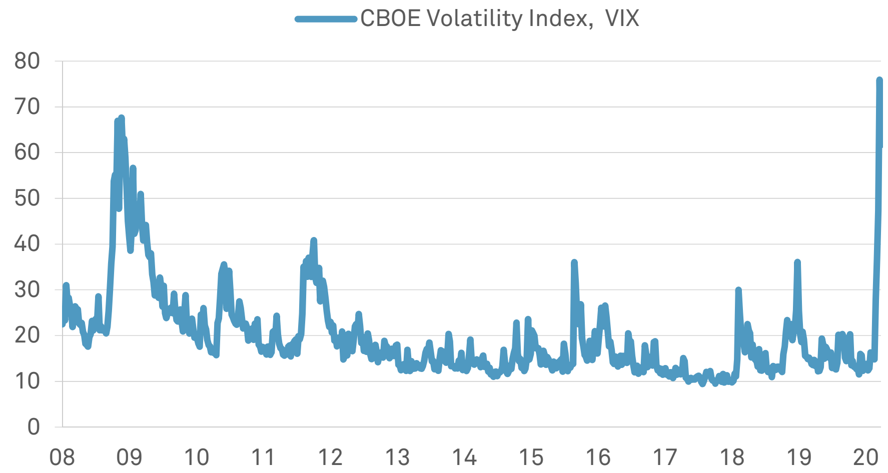
WTI--West Texas Intermediate. Source: S&P Global Ratings.

Source: S&P Global Ratings Cuts WTI And Brent Crude Oil Price Assumptions Amid Continued Near-Term Pressure, Mar. 19, 2020

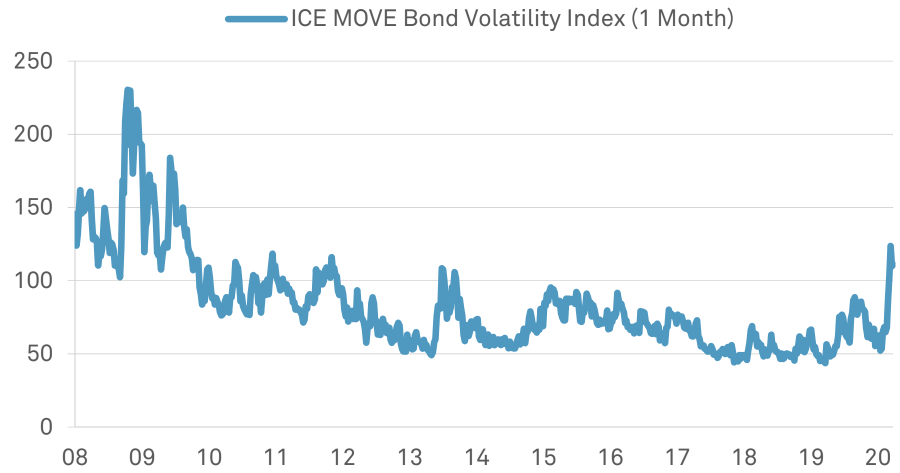
- **The oil price plummeted** in early March following failed OPEC+ negotiations and Saudi Arabia' s production increase.
- **Oil markets are heading into a period of severe supply-demand imbalance in Q2 2020.** Demand for oil and oil products is already weak and will decline materially in Q2 2020. The acute oversupply threatens to test the limits of crude and product storage as soon as May.
- **Producers are under great pressure** by investors to limit spending and maintain positive cash flow. Given negative investor sentiment, capital market access, and COVID-19 concerns, it is likely ratings actions in the IG space could be more severe.

Volatility | Rampant Uncertainty

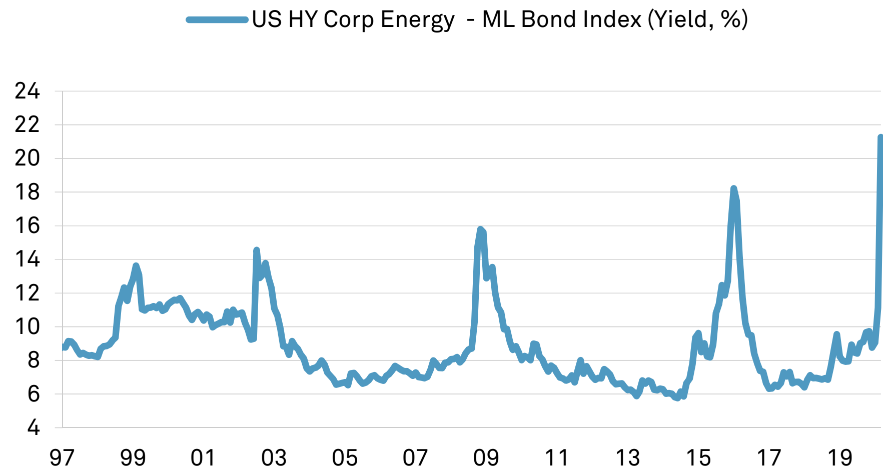
Equity Volatility Surges In Excess Of GFC



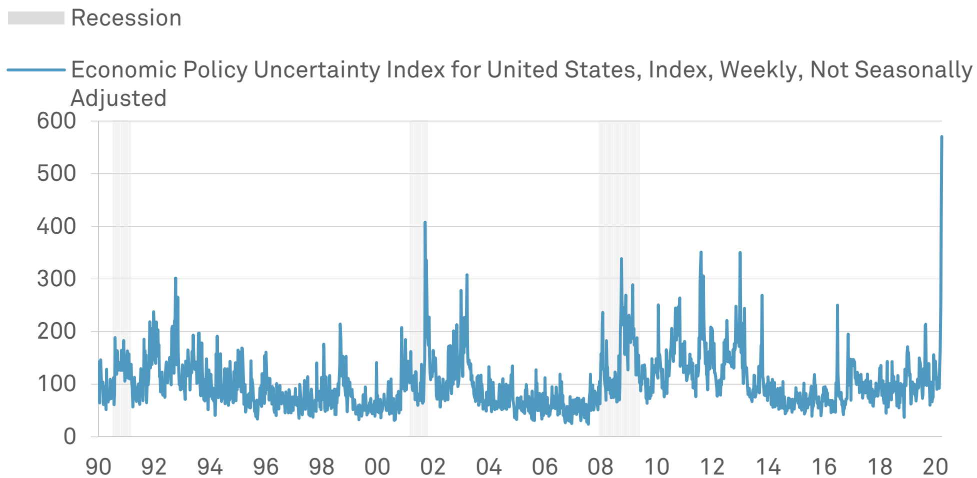
U.S. Treasury Yield Volatility Spikes



ICE U.S. High Yield Energy Yield at Record High



U.S. Economic Policy Uncertainty Highest On Record



Data as of Mar. 30, 2020. Source: Refinitiv, CBOE, ICE, Federal Reserve Bank of St. Louis (FRED), S&P Global Ratings.

Global Top Risks | Triggers For a Deeper Crisis

COVID-19 containment measures fail

- Confirmed cases (already in excess of 846,000—with more than 41,654 deaths) continue to grow at a rapid rate.
- This surge threatens capacity of countries' healthcare systems, particularly in emerging markets, as the number of confirmed cases keep increasing in regions such as Latin America and Africa.
- China could emerge from lockdown with a more gradual lifting of social distancing and shallower recovery than expected, on the back of worries about a potential second wave.
- Risks remain firmly on the downside including on the length it will take to contain the pandemic across multiple geographies and risks of secondary waves before a vaccination developed.

Demand drop-off persists and supply disruption escalate

- S&P Global Ratings believes the effects of the coronavirus pandemic have already sunk the world economy into recession; we now forecast global GDP growth of just 0.4% this year.
- While assumptions around the timing of the outbreak's peak about mid-year remain been broadly valid, the slow lifting of restrictions may further delay economic rebound.
- The economic disruption will be exacerbated by the severe dislocation in global supply-chains, the impact of the drop in demand on SMEs, on employment, and the time needed to re-establish consumer confidence and habits.
- China's PMIs above 50 for March are not a surprise and do not suggest a V-shaped recovery. Most firms are still reporting lower employment levels compared to February suggesting a slower lift-off for the services sector.

Financial and commodity markets volatility worsen

- Slumping cash flows, tighter financing conditions, combined with the simultaneous oil price shock, could lead to a surge in defaults, particularly distressed exchanges—with the U.S. non-financial corporate default rate potentially rising above 10%, and Europe into the high single digits – over the next 12 months.
- Aggressive fiscal and monetary support are likely to soften the negative shock on the economy and limit some liquidity risks, but it is unlikely to prevent some deterioration in credit fundamentals.
- We expect the magnitude of defaults will vary significantly by industry and asset class in a severe but short recession (our base case) but a prolonged slump would have broader sector level implications.

Credit Conditions

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Credit Outlook | Global Recession Will Amplify Defaults

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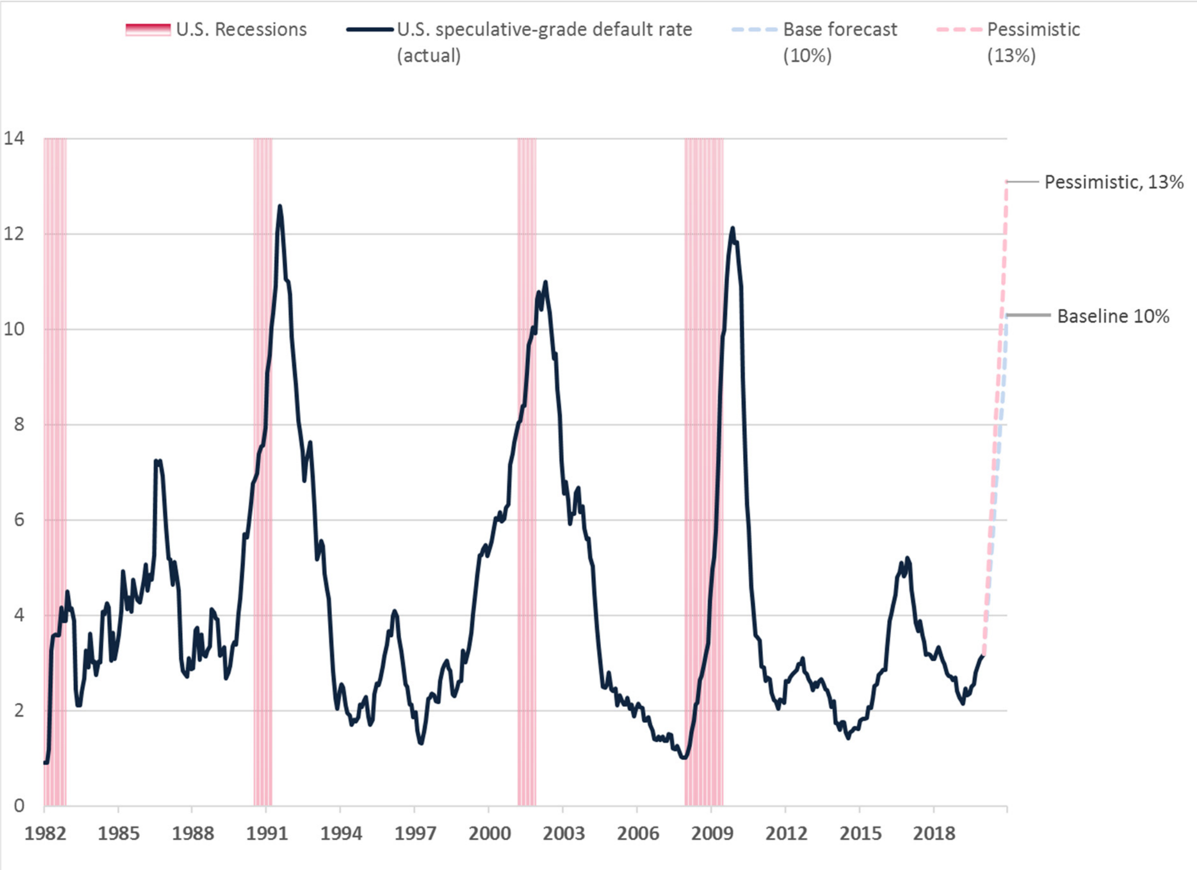
U.S. Default Rate Forecast Through Dec. 2020



Note: Shaded areas are periods of recession as defined by the National Bureau of Economic Research.
Sources: S&P Global Ratings Research and S&P Global Market Intelligence's CreditPro®.

- **Market Turmoil**. COVID-19 pandemic is pressuring the funding environment at a time when earnings for some sectors are expected to plummet under the strain of supply side disruptions and tanking demand.
- **Distressed Credits**. Rapid deterioration of credit risk pricing and oil pushes distressed credits to record highs at record speed; oil and gas hits distressed ratio of 94%.
- **Low-Rated Issuers**. A third of speculative-grade issuers are rated 'B-', highlighting default vulnerability.

Global Credit Markets | Rising Downgrades

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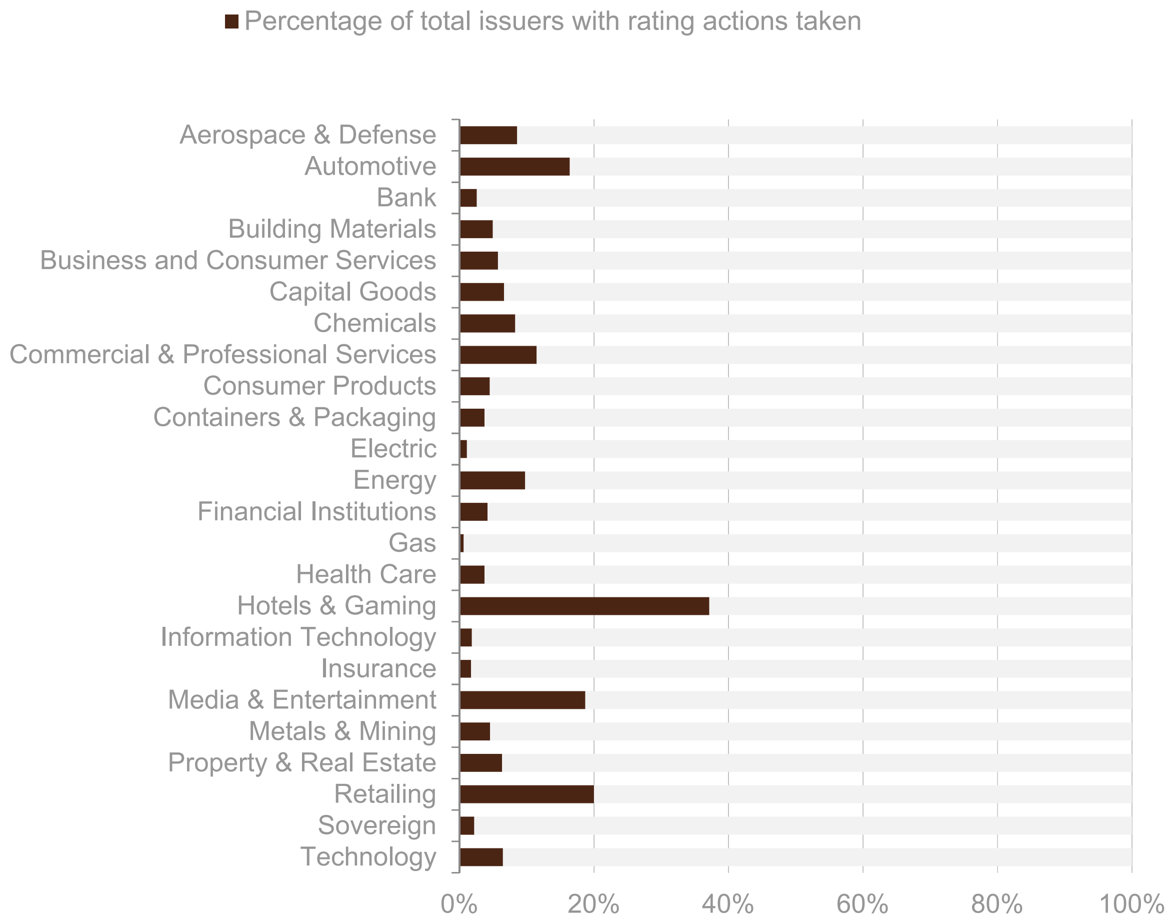
COVID19 and Oil Price War Resulted In About 400 Negative Rating Actions (Downgrades, Outlook changes, CreditWatch Negative)



Data as of Mar. 25, 2020. Source: S&P Global Ratings.

- **COVID19 and Oil-Related Downgrades**. Over 170+ downgrades since Feb. 3, 2020.
- **Corporate downgrades and defaults**. Over 80% of downgrades were seen among speculative-grade companies; global recession likely to push U.S. default rate to 10%. Global default tally now at 28 issuers for 2020.
- **Fallen angels**. 69 Potential Fallen Angels (as of Mar. 25) account for ~2% of investment-grade issuers; Recent fallen angels include Ford, Delta Airlines, and Occidental Petroleum; potential fallen angels include British Airways and Hilton.

North America | COVID-19 Related Rating Actions

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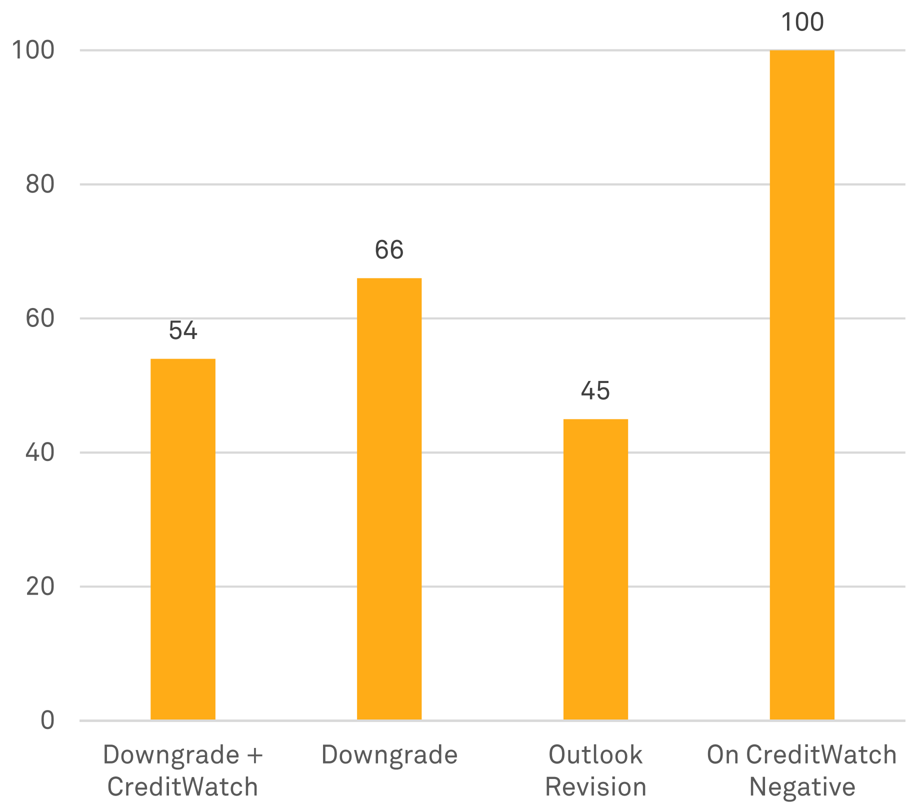
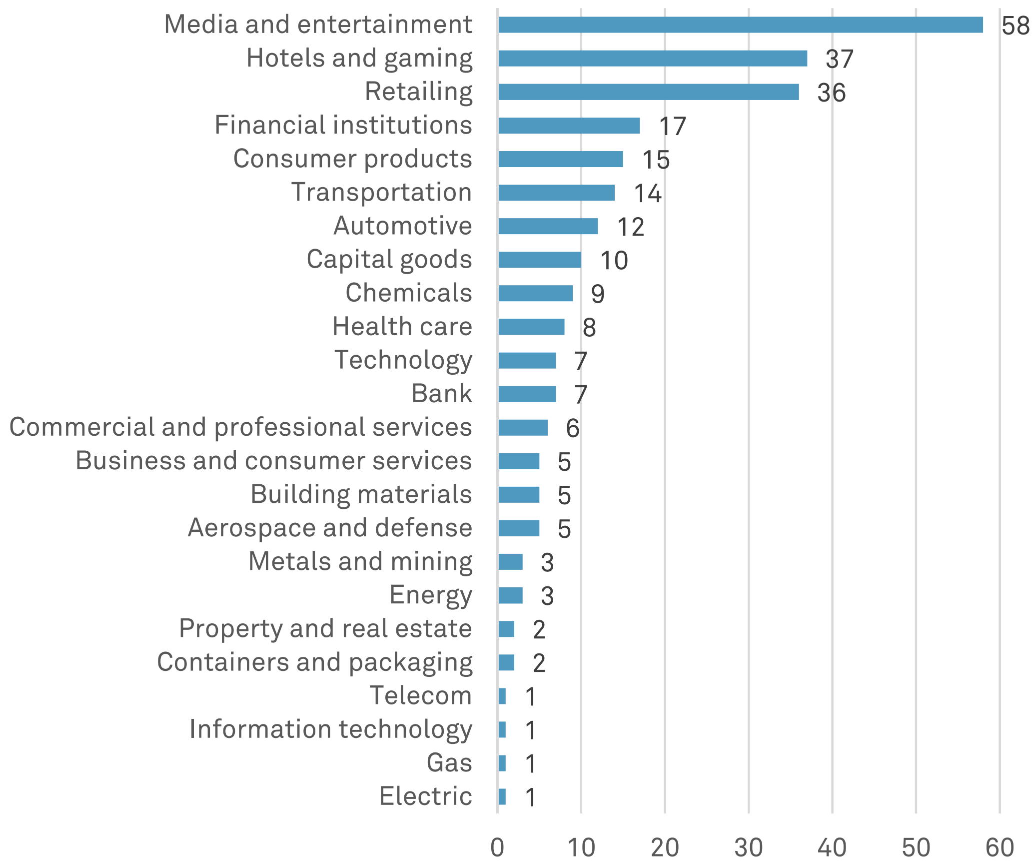
Total Negative Rating Actions



Note: Total of 265 Corporate ratings actions as of Mar. 25, 2020
Source: S&P Global Ratings. COVID-19: Coronavirus-Related Public Rating Actions On Corporations And Sovereigns To Date, Mar. 25, 2020.

Negative Rating Actions by Sector



Note: Negative rating actions include Downgrade+ CreditWatch, Downgrades, Outlook Revision, on CreditWatch negative.

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EMEA| COVID-19 Related Rating Actions

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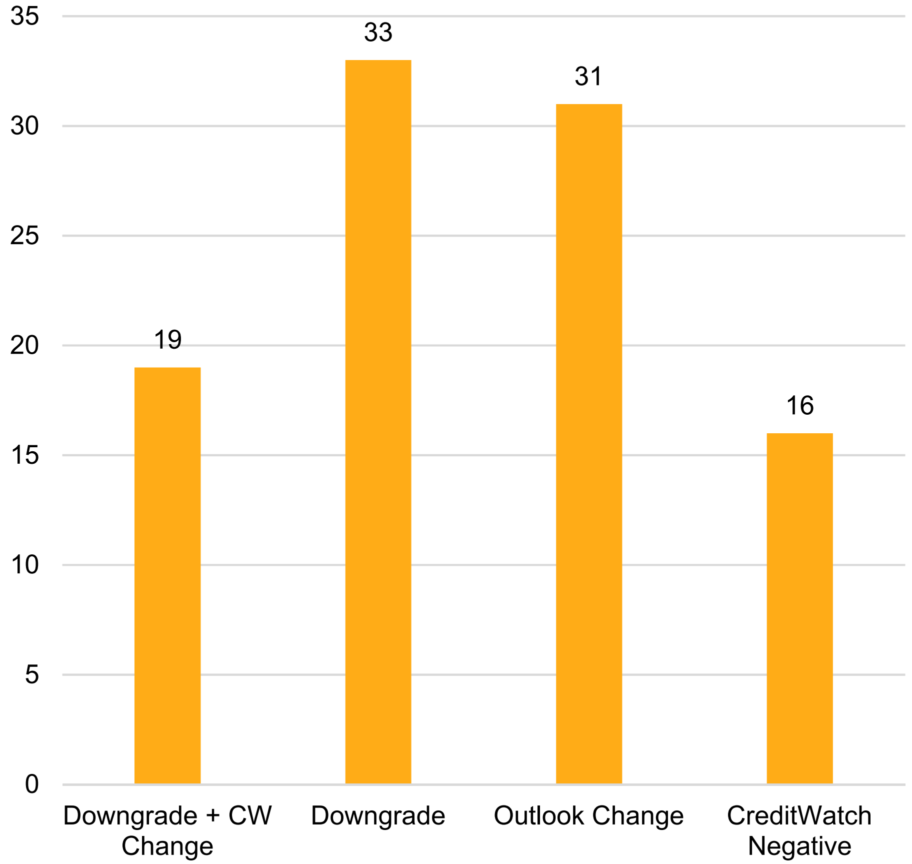
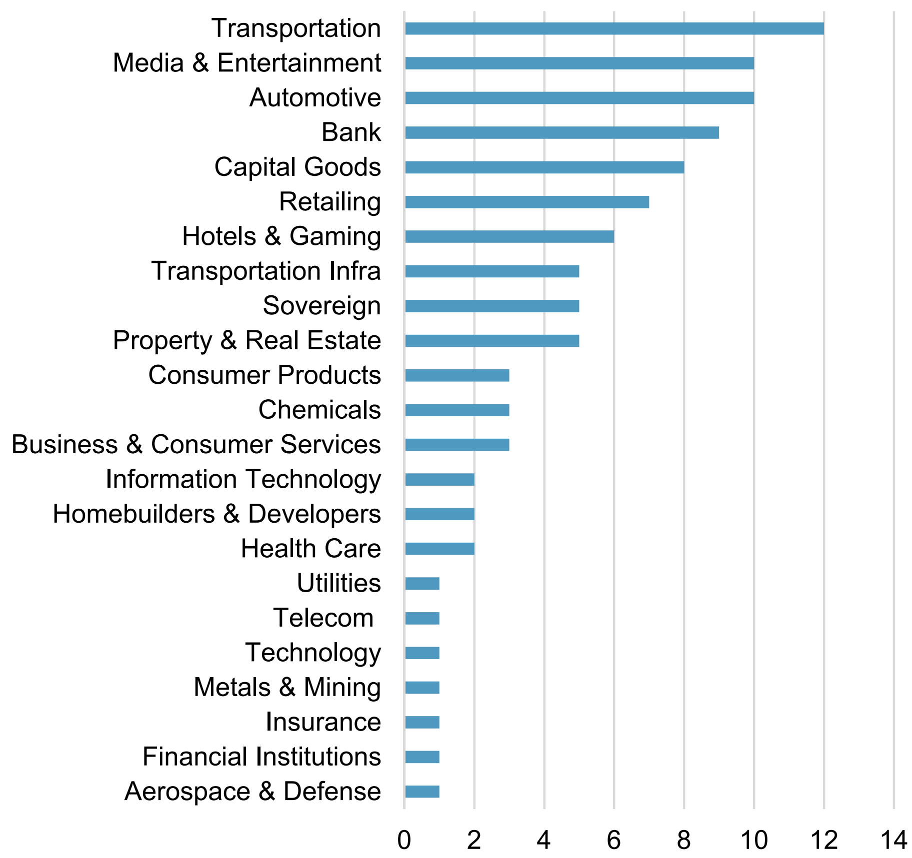
Total Negative Rating Actions



Note: Total of 99 Corporate ratings actions as of Mar. 26, 2020. Source: S&P Global Ratings

Negative Rating Actions by Sector



Note: Negative rating actions include Downgrade+ CreditWatch, Downgrades, Outlook Revision, on CreditWatch negative

S&P Global Ratings

Asia-Pacific Credit | Three Waves Of COVID-19

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Asia-Pacific: COVID-19 spread, GDP and Sector Impact

COVID-19 confirmed cases growth trend	Reduction in real GDP growth 2020 forecast (vs forecast in Dec. 2019)	Relative risk (based on our analytical teams' qualitative opinions)
Accelerating Most of the rest Asia-Pacific	**Down by more than 2.5 ppt** • Asia-Pacific (2.6) • China (2.8) • India (3.0) • Singapore (4.0) • South Korea (2.7) • Thailand (5.3)	**High** Aviation; Auto; Consumer products; Gaming, leisure and lodging; Building materials; Metals and mining; Oil and gas; Retail; Transportation Cyclical; Transportation Infrastructure
Steadying Korea, Japan	**Down by 1.5 to 2.5 ppt** • Australia (1.8) • Hong Kong (1.9) • Malaysia (2.1) • Philippines (2.0) • Taiwan (1.6) • Vietnam (1.7)	**Medium** Financial Institutions; Capital goods; Chemicals; Healthcare; Insurance; Telecoms; Public finance; Real estate; REITs; Structured finance; Technology; Utilities.
Somewhat flat China	**Down by less than 1.5 ppt** • Indonesia (1.3) • Japan (1.3) • New Zealand (1.4)	**Low** Sovereign.

ppt – percentage point. Source: S&P Global Ratings.

- **Overall.** The Asia-Pacific faces a challenging environment as bad as 1997. China is returning to normalcy but slowly. But the sharp rise in COVID-19 cases in Asia will collapse demand.
- **Risks.** Top risks include COVID-19 containment failing, risk-aversion affecting financing, commodity price volatility, and U.S.-China dispute reigniting.
- **Credit:** Highly-impacted sectors include aviation; auto; consumer products; Gaming; retail; building materials; mining; oil; and transport. For others, secondary effects.

Europe Credit | Lockdown – For How Long?

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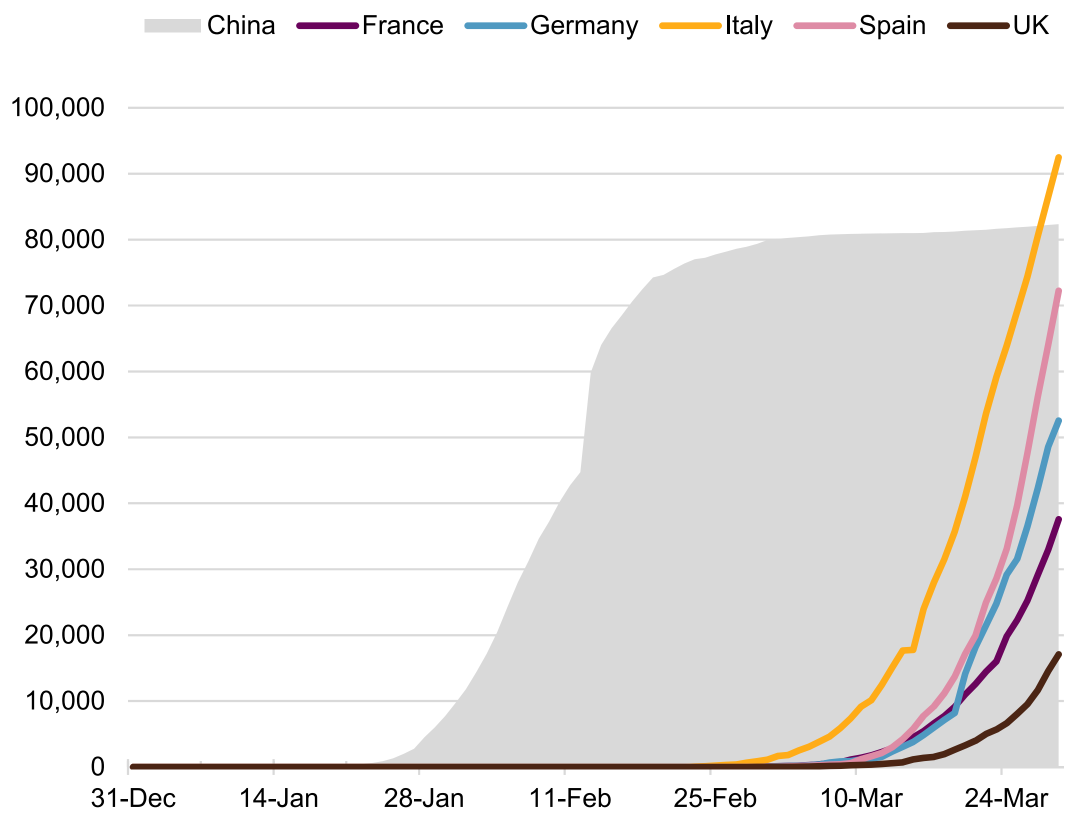
Cumulative confirmed COVID-19 cases in chosen countries



Source: ECDC. Data as of March 29, 2020

- **Overall.** While we assume containment measures hitting the economy will ease in the second quarter, the depth and severity of the recession remains highly uncertain.
- **Risks.** Top risks include COVID-19 emergency extending into summer; further tightening in financing conditions; re-emergence of trade tensions with the U.S.
- **Credit.** Demand shock will pressure credit quality particularly for corporates in consumer discretionary facing sectors and those with already stretched balance sheets.

North America Credit | Uncertainty Slams Credit

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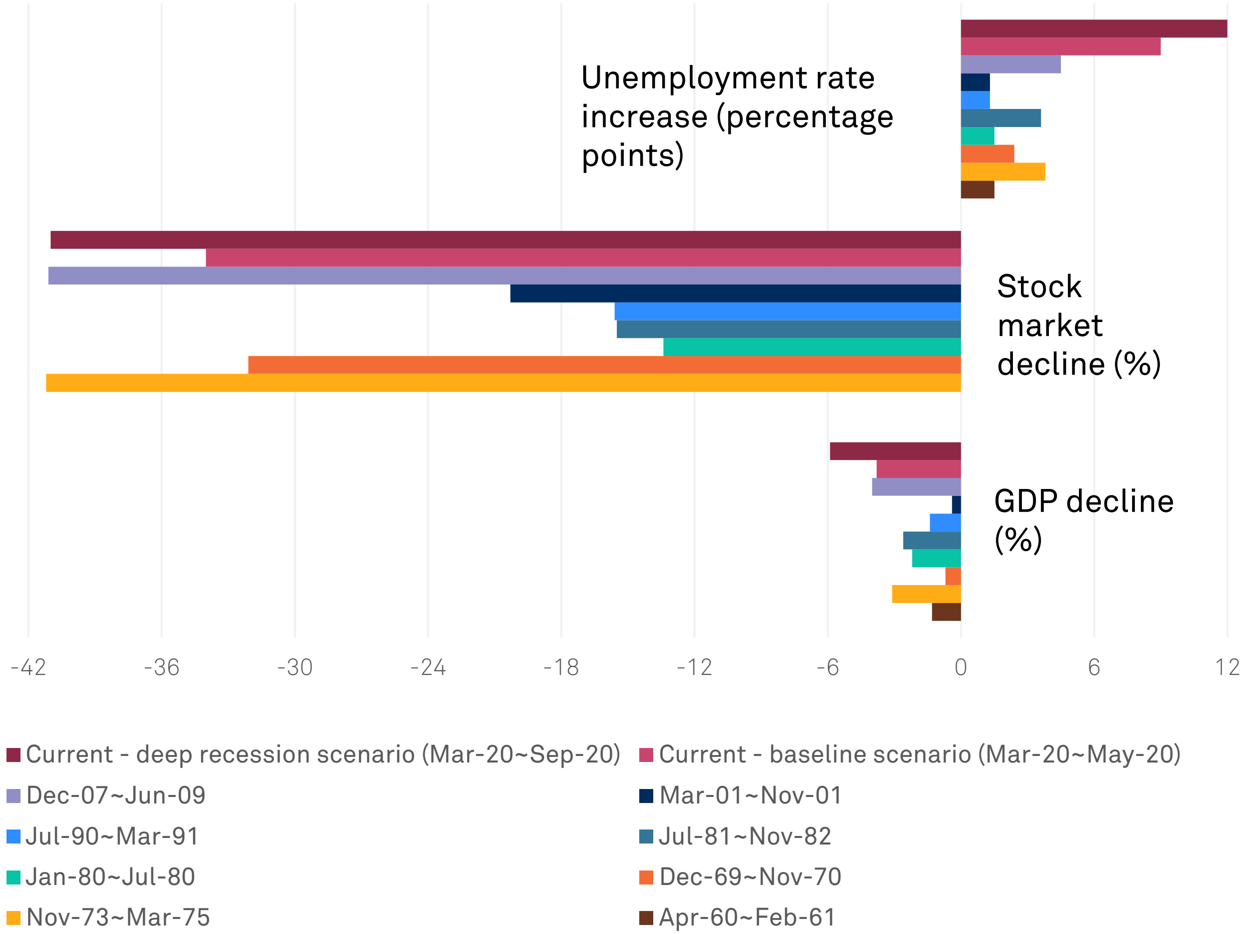
If This Recession Worsens, The Economic Damage Would Far Exceed That Of The Great Recession



Source: It's Game Over For The Record U.S. Run; The Timing Of A Restart Remains Uncertain, March 27, 2020. S&P Global Ratings.

- **Overall.** The U.S. and Canadian economies have plunged into severe recessions. With COVID-19 continuing to spread, predicting an end to this period of unprecedented uncertainty is fraught with variables.
- **Risks.** As coronavirus-containment measures hammering the U.S. labor market, the concomitant demand shock threatens to prolong the economic slump and stifle an expected second-half recovery.
- **Credit.** Historically low interest rates and massive government stimulus help to bolster financial markets, but slumping cash flows and tight financing conditions are pressuring the credit quality of issuers across our rating practices.

Emerging Markets | Three Simultaneous Shocks

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COVID-19 / Commodities / Financial Conditions

Supply Chains, Trade & People Flows Travelling, manufacturing and trade, GDP growth are down	**Commodity Prices** Shock in demand has pushed prices down	**Capital Outflows** Emerging Markets spread have rapidly widened
Social Distancing Containment measures will further undermine growth	**Oil Supply Dispute** Lack of agreement in OPEC+ further pressuring oil prices	**Depreciating Currencies** Risk aversion is pressuring EM currencies.

- **Outlook**. Emerging Market economies are undergoing significant stress. We expect a severe shock in economic growth compounded by stringent financing conditions.
- **Risks**. Measures to contain the epidemic will further stress growth. Sustained capital outflows and tightening financing conditions, will bring additional stress to issuers across emerging markets. Refinancing risks could arise.
- **Credit**. Current conditions will pressure high yield ratings and defaults could be expected in the most vulnerable issuers.

Emerging Markets | Economic Impact To Worsen

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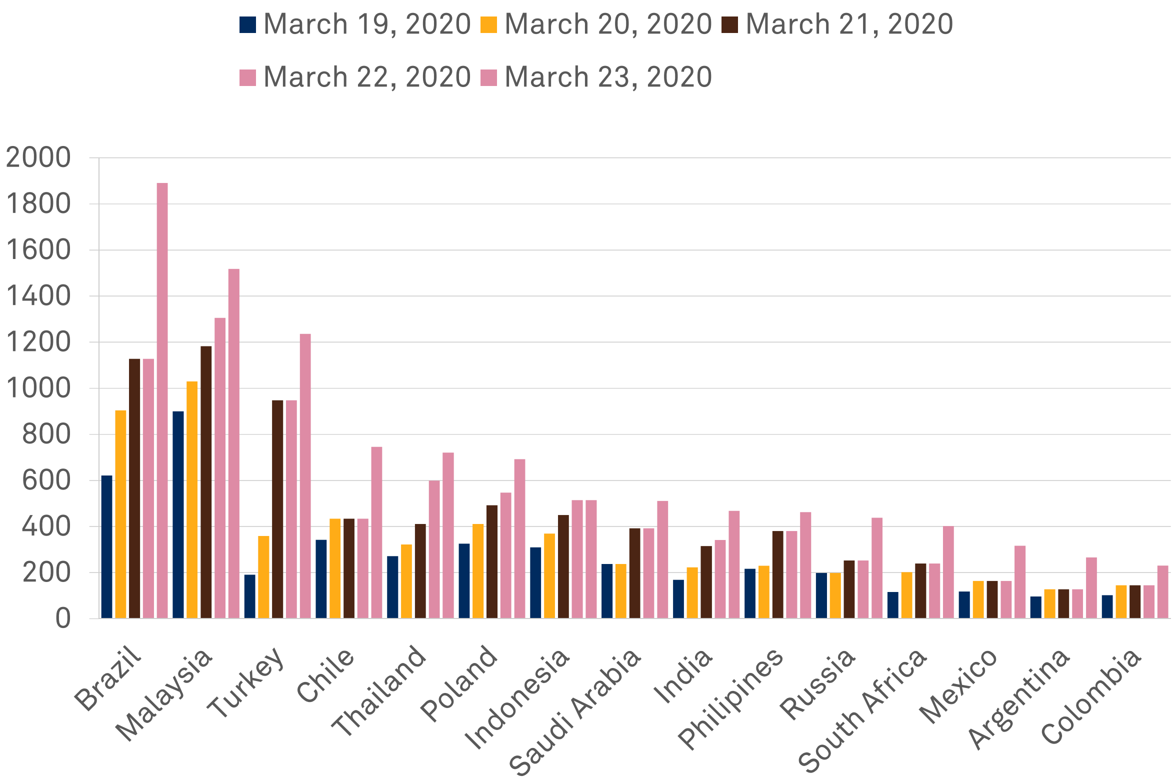
COVID-19 Cases Advance, Containment Measures will Further Pressure EM Economies



Source: Johns Hopkins Center for Systems Science and Engineering

- **Outlook**. Emerging Markets are already showing slower growth resulting from indirect effects of COVID-19 in developed economies and China. Direct impact of the virus is just starting to show up in most Emerging Market Economies.
- **Risks.** Failure to adopt timely viral spread containment policies will steepen the infection curve, strain already weak public health systems, and amplify the impact of the crisis on future economic activity.
- **Credit.** Containment measures along with the negative effects of identified transmission channels will pressure ratings.

Economic Conditions

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Global Economics | Global Recession Here and Now

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GDP Growth Forecasts

(%)	2019	2020	2021
U.S.	2.3	-1.3	3.2
Eurozone	1.2	-2.0	3.0
China	6.1	2.9	8.4
India*	5.0	3.5	7.3
Japan	0.8	-1.2	1.8
Russia	1.3	-0.8	3.8
Brazil	1.1	-0.7	2.9
World¶	**2.9**	**0.4**	**4.9**

**Fiscal year ending in March. ¶Weighted by purchasing power parity.*
Sources: S&P Global Economics, Oxford Economics.

- **Recession**. We now forecast a global recession this year, with 2020 GDP rising just 0.4%. The risks remain firmly on the downside.
- **Precedent**. Initial China data suggests its economy was hit far harder than projected, though tentative stabilization has begun. Europe and the U.S. are following a similar path.
- **Policy response**. Central banks have sharply reduced policy rates and resumed assets purchase and liquidity injections. Fiscal responses are lagging but gathering pace.

APAC Economics | Hit In-Line With Past Crises

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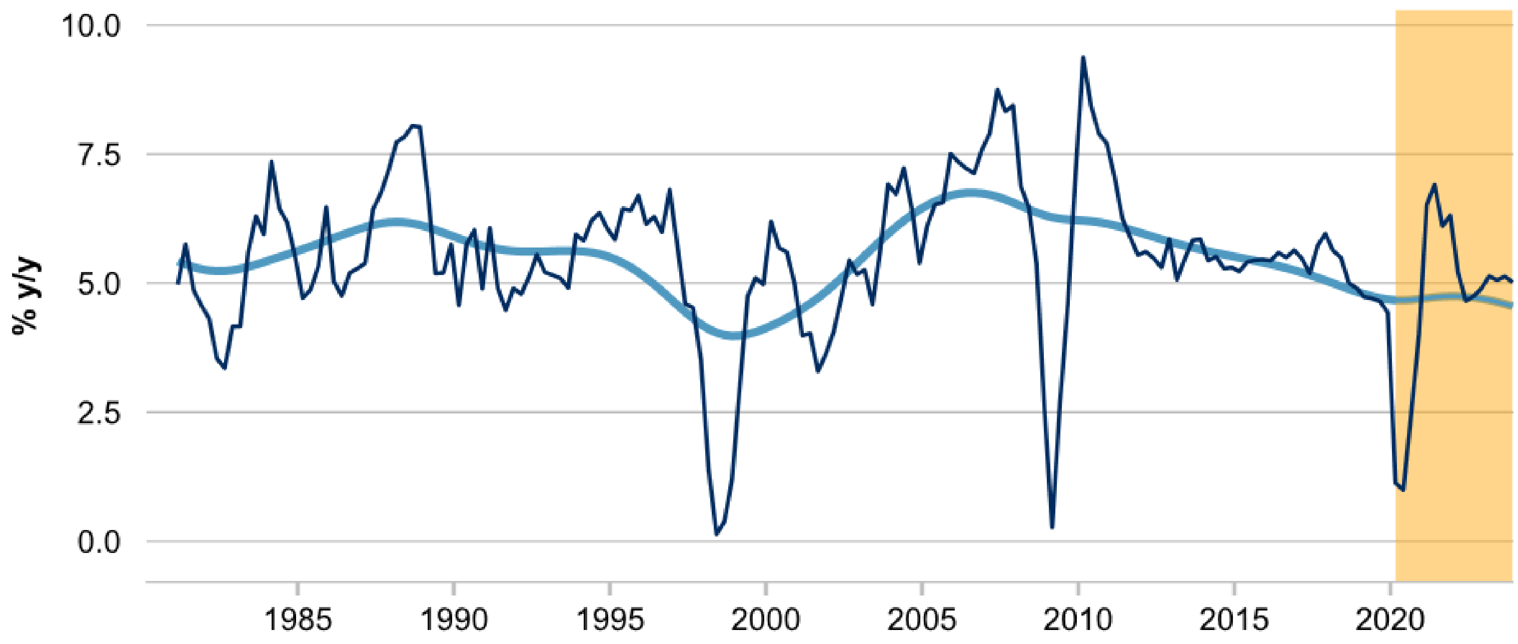
- Our baseline forecasts a **shock comparable to the AFC (1997-98) and GFC (2008-09)**. Output about 4% below potential. Permanent income losses well over US$0.5 trillion.
- Our U-shaped recovery similar to AFC but downside risks. Aside from virus, will depend on whether the policy response can limit **balance sheet and labor market scars**.

Asia-Pacific's COVID-19 Recession Comparable To AFC And GFC

Real actual and trend quarterly GDP growth (PPP-GDP weighted)



Source: National authorities and S&P Global Ratings. Forecast period shaded.

EMEA Economics | Swift Policy Response But Downside Risks Remain

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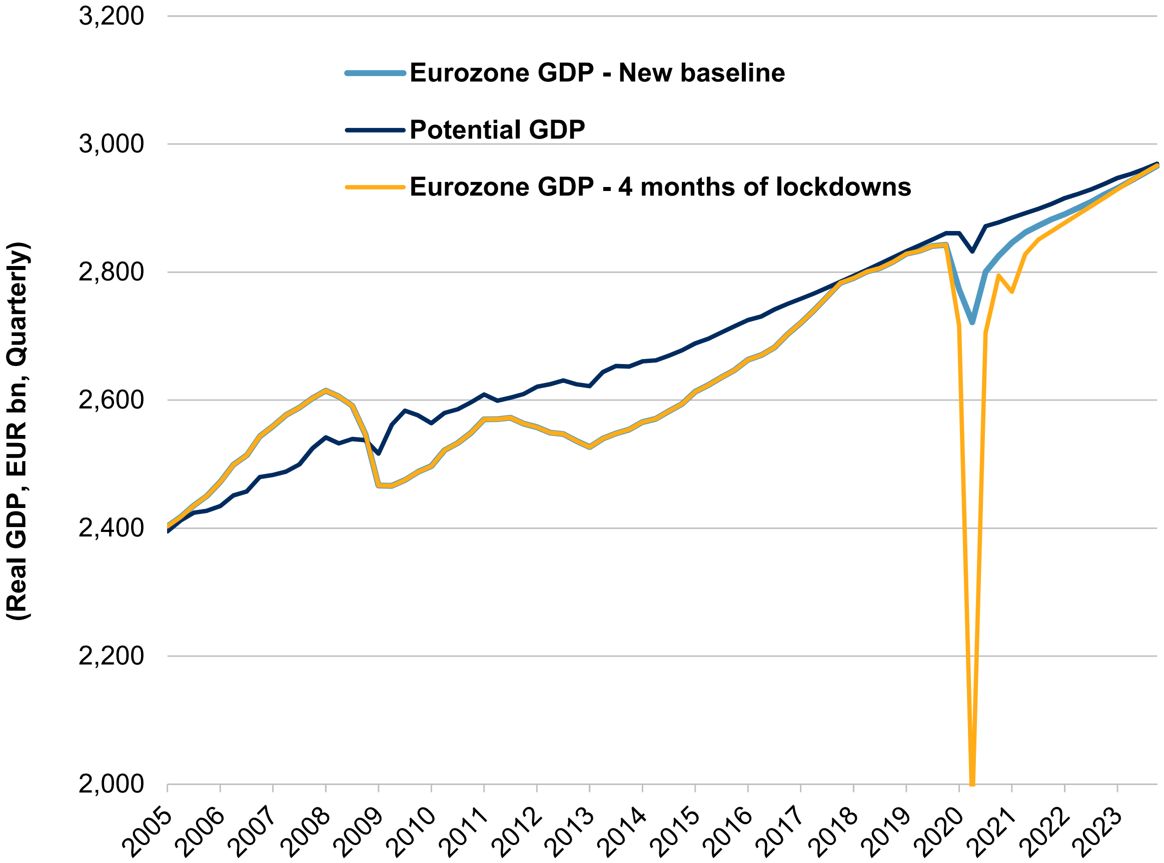
Downside risks to growth persist: 4 months lockdown would shave 10% of GDP this year



Source: S&P Global Ratings

- **Growth.** We now expect GDP to fall around 2% this year in the EMU and the UK due to economic fallout from the pandemic, which represents a €420 billion loss in 2020, compared with our previous baseline. We expect a gradual rebound of 3% in 2021.
- **Policy.** A flurry of large fiscal and monetary policy packages have been deployed to help workers and companies bridge the gap to recovery. Swift and bold policy responses taken now are key to avoiding permanent losses to GDP later.
- **Risks.** Further spread of the virus is the chief risk. For example, we estimate a lockdown of four months could lower eurozone GDP by up to 10% this year.

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LatAm Economics | Symptoms Of A Recession

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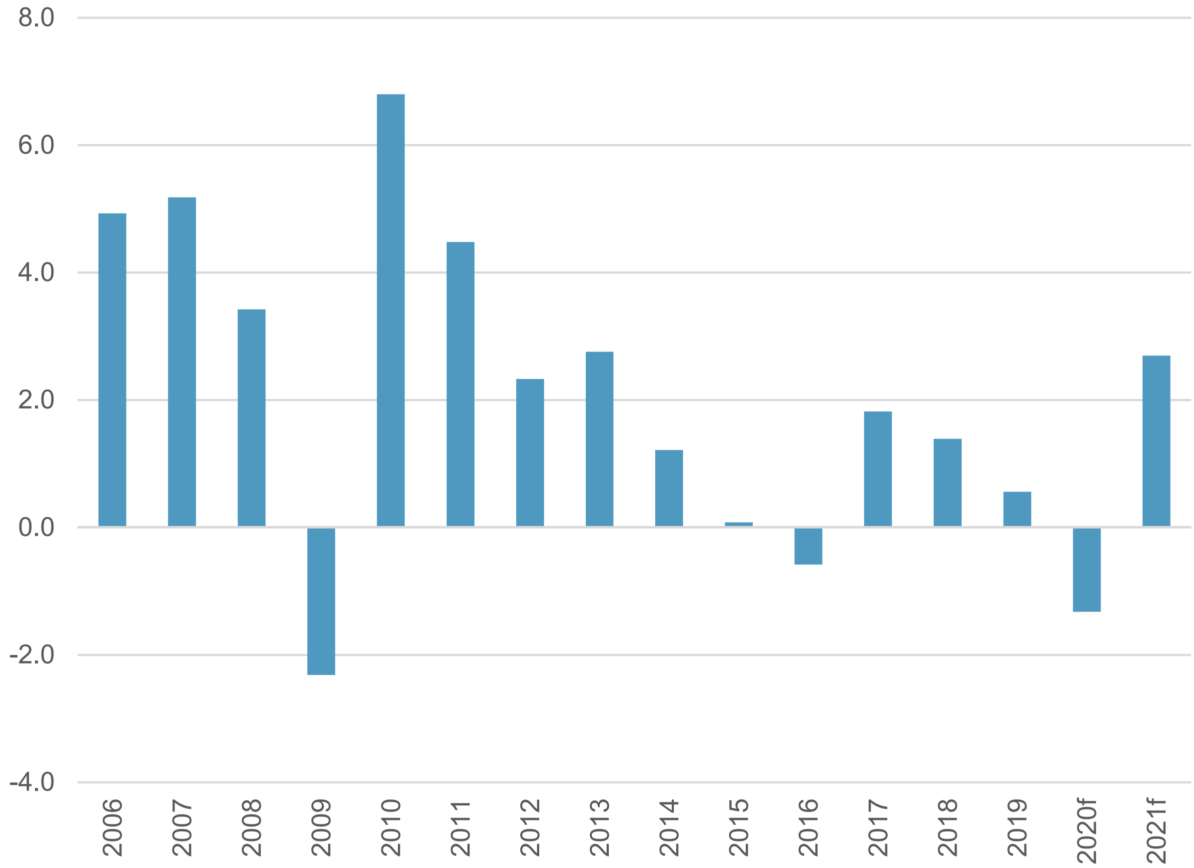
LatAm, Real GDP Growth (%)



Source: S&P Global Ratings.

- **Virus no longer just an indirect impact**. The sharp increase in confirmed cases across the region is prompting travel bans, social distancing measures, and factory closures.
- **Bad timing**. Several economies in the region were already experiencing some of their weakest growth rates since the GFC, and this health crisis will push most LatAm countries into a recession this year.
- **Risks to speedy recovery**. We expect economic activity will start to recover towards the end of 2020 and into 2021. However, policy mistakes and failure to mitigate the spread of the virus could slow or delay the expected recovery.

U.S. Economics | Recession Takes Hold

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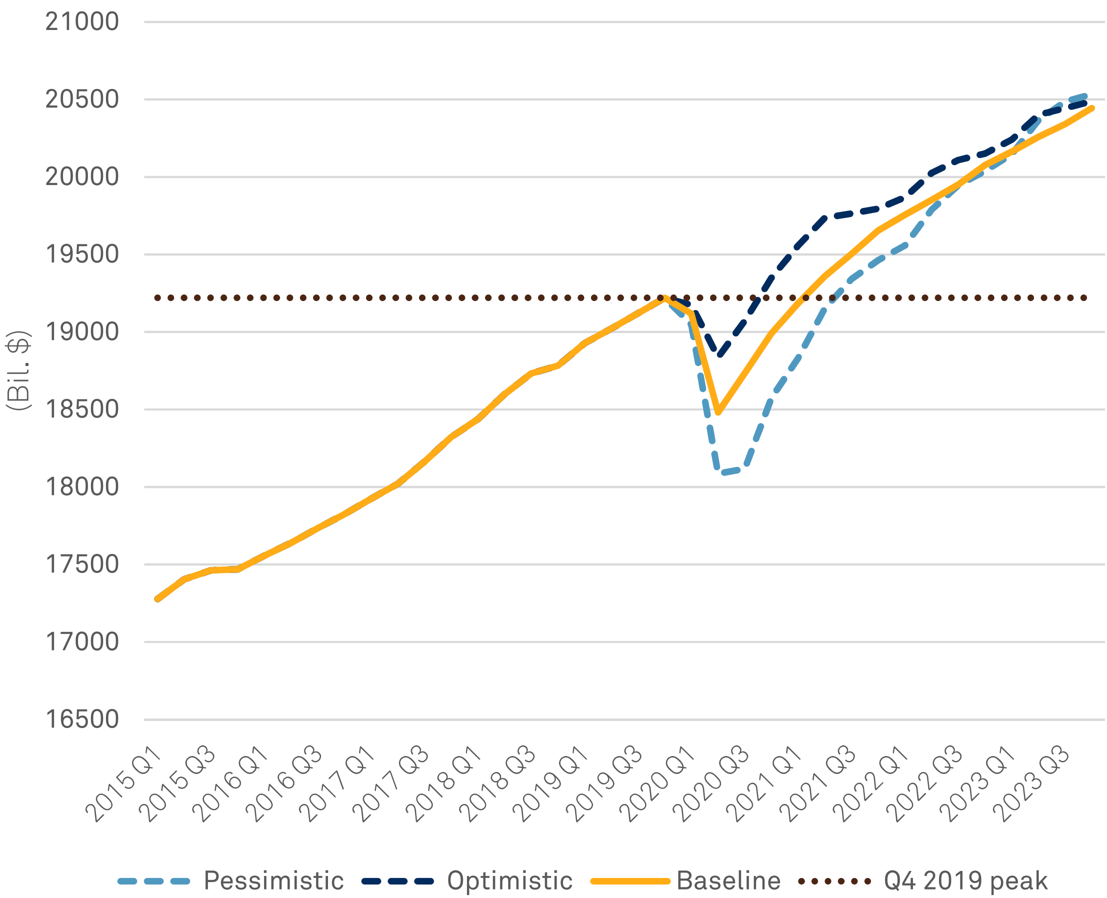
Alternative Paths Of Real GDP Contraction And Recovery



Source: BEA and S&P Global Economics forecasts. It's Game Over For The Record U.S. Run; The Timing Of A Restart Remains Uncertain, March 27, 2020.

- **End of the cycle.** The COVID-19 pandemic has brought the longest economic expansion in U.S. history to an abrupt end. In our baseline, we forecast GDP will drop by 1.3% in 2020, down from our pre-virus December forecast of a 1.9% gain.
- **Short and sharp.** Our baseline recession will likely be on par with the economic losses seen during the Great Recession, but over a much shorter time frame. In our deep recession scenario, the possible economic damage would far exceed that of the Great Recession.
- **Policy response.** The government's tentative economic relief package and the Fed's own stimulus measures will likely help conditions, but not enough to fully offset the drag on second-quarter economic activity.

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APAC EM Economics | Severe Economic Impact

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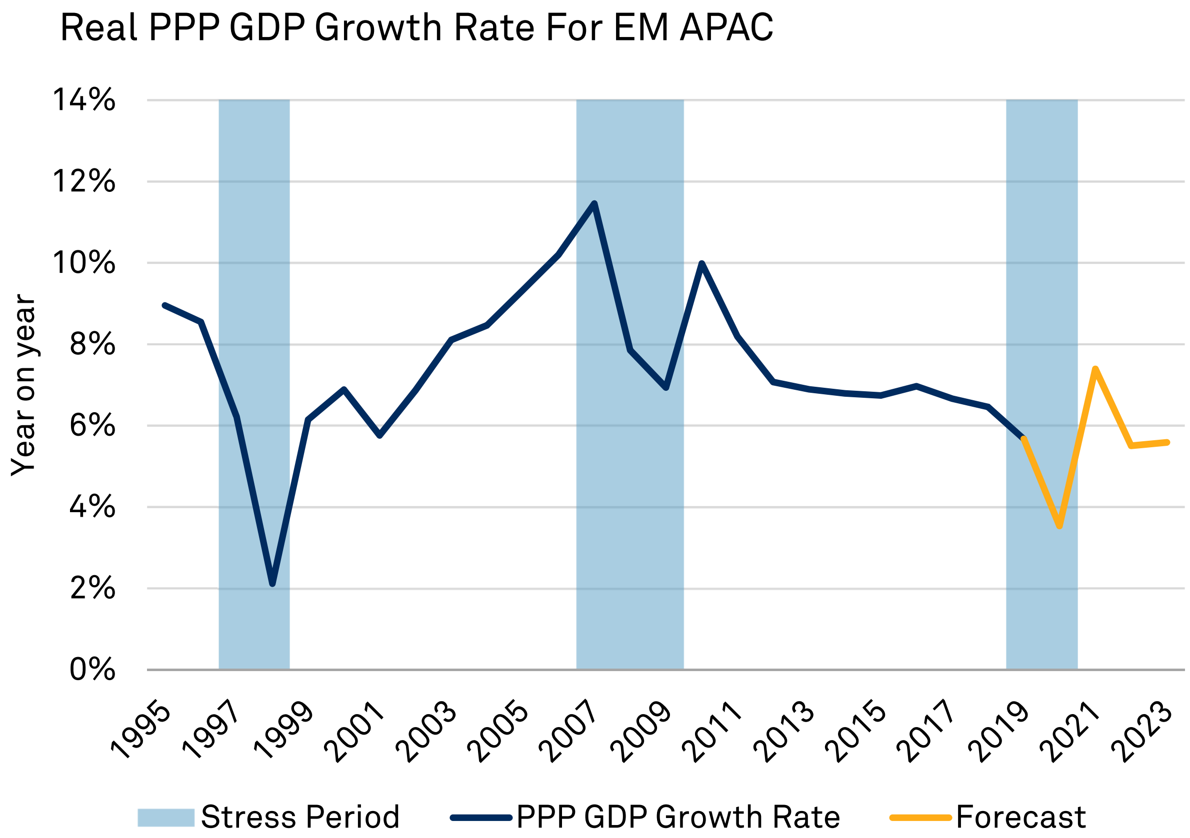
APAC EMs Heading For Lowest Growth Since The Asian Financial Crisis



Source: S&P Global Ratings

- **Growth.** Discretionary consumption will be battered due to virus prevention efforts. Lockdowns across the world mean that tourism and related spending will collapse. We forecast growth of 3.5% for EM APAC in 2020, the lowest since 1998.
- **Policy.** There has been targeted fiscal stimulus that will cushion the blow to growth. We expect further monetary easing; however, tighter external financial conditions constrain room for policy measures.
- **Risks.** Further spread of the virus is the chief risk that could lead to sharp welfare and economic losses. Healthcare infrastructure in parts of the region remains patchy.

EMEA EM Economics | Severe External Shock, Domestic Demand At Risk

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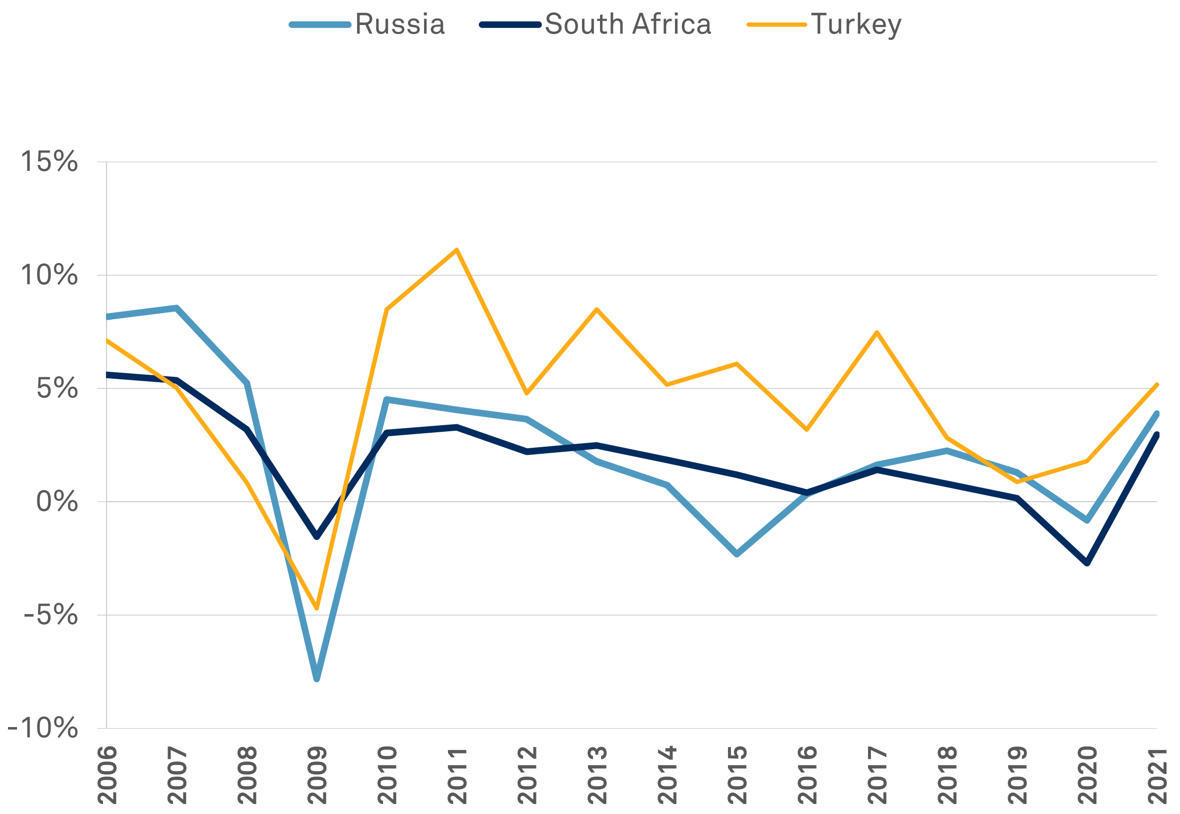
Most Economies In EM EMEA Will Suffer (Real GDP Growth %)



Source: S&P Global Ratings

- **Growth:** While external exposure varies across EMEA EMs, from commodity exports to tourism, most economies will be hit hard. Domestically, containment measures are ratcheting up, which will depress activity.
- **Policy**. Room for further monetary easing might be constrained in the risk-off environment. Limited clarity on fiscal support measures at this point.
- **Risks.** Prolonged outbreak will result in higher costs. Policy mistakes may impede the recovery.

Financial Conditions

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Global Financing | Risk Aversion

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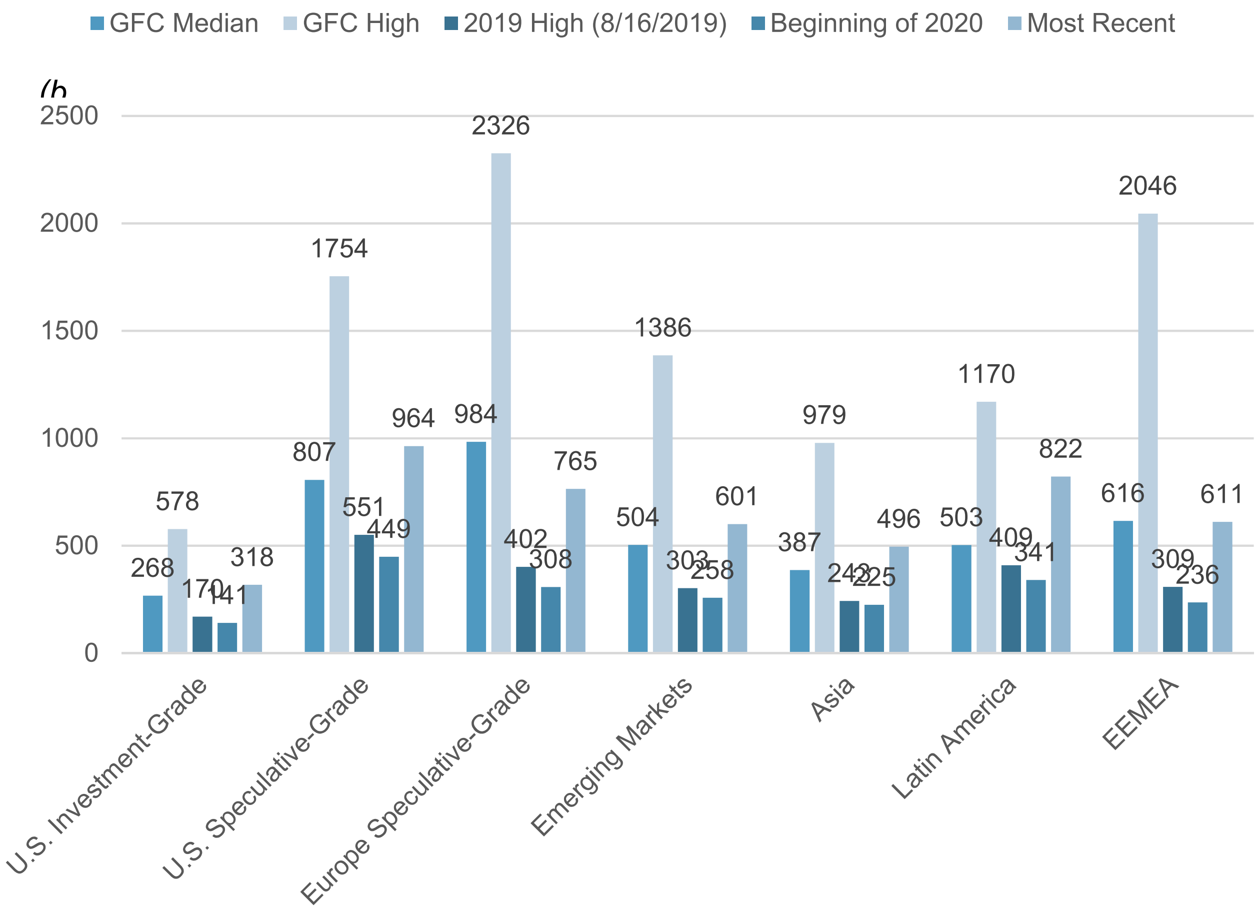
Secondary Market Credit Spreads, Global



- **Elevated Risk Aversion**. Bond spreads quickly widened past median Global Financing Crisis levels, at the fastest pace observed, owing to a flight to quality as COVID-19 wreaks havoc on capital markets.
- **Risks.** Weak investor confidence felt globally, though Asia sees the least comparative risk globally, owing to early action on fiscal and monetary measures, structural dynamics (particular the integration of China's interbank system), and other public health management measures.

ICE Benchmark Administration Limited (IBA), 'ICE BofAML High Grade Emerging Markets Corporate Plus Sub-Index Option-Adjusted Spread', 'ICE BofAML Emerging Markets Corporate Plus Index Option-Adjusted Spread', 'ICE BofAML Asia Emerging Markets Corporate Plus Sub-Index Option-Adjusted Spread', 'ICE BofAML Latin America Emerging Markets Corporate Plus Sub-Index Option-Adjusted Spread', 'ICE BofAML Europe, the Middle East, and Africa (EMEA) Emerging Markets Corporate Plus Sub-Index Option-Adjusted Spread', retrieved from FRED, Federal Reserve Bank of St. Louis; https://fred.stlouisfed.org/series/BAMLEMRECRPIEMEAOAS, U.S. Investment-Grade and Speculative-Grade Spreads from S&P Global Ratings. March 27, 2020.

Global Financing | Across The Spectrum

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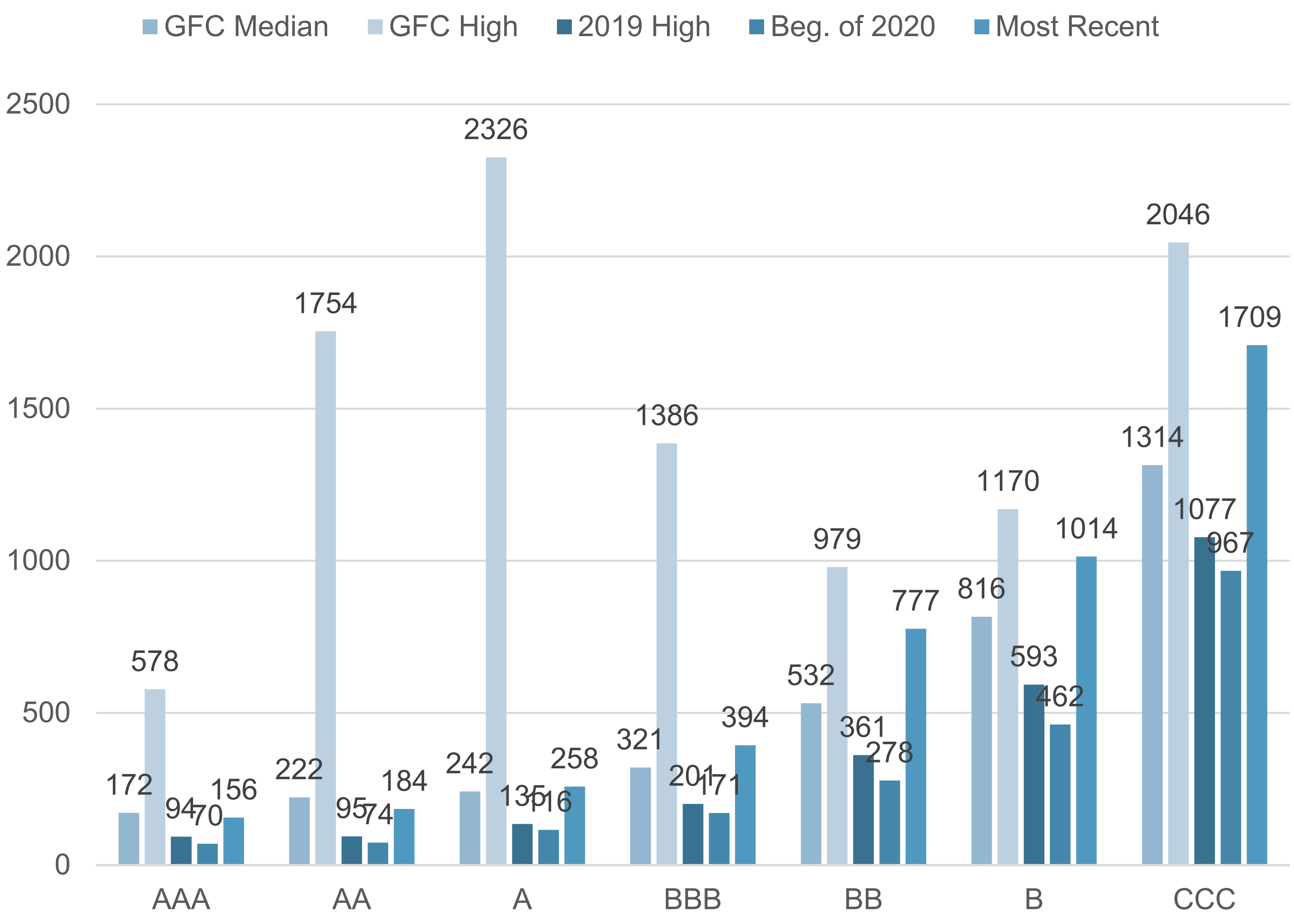
S&P Global U.S. Composite Spreads By Rating, Secondary Market



- **Across the spectrum**. Speculative-grade ratings hold disproportionate risk but risk aversion felt across the credit spectrum.
- **Distressed credit.** Both 'B' and 'CCC' benchmarks at distressed levels of 1000 bps over treasuries

Data as of Mar. 27, 2020. Source: S&P Global Ratings.

Global Financing | Sharp Rise In Spreads

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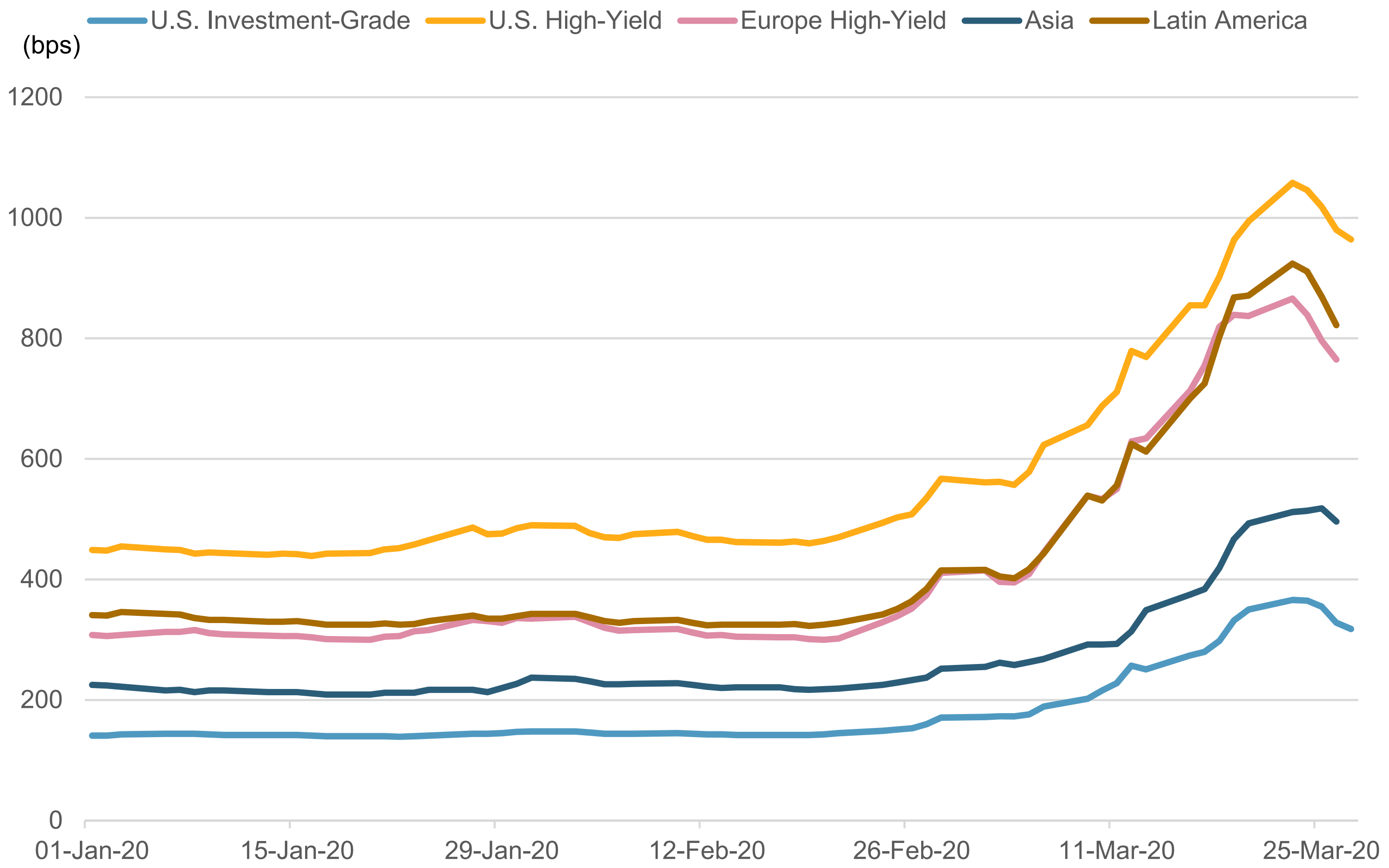
Secondary Market Spreads



- **Sharp rise**. Spreads widened considerably since the end of February at unprecedented speed and relentless levels amidst dislocations in public health, economic prospects, and supply chains.
- **U.S. speculative-grade market effectively shut down.** Spreads for speculative-grade issuers expanded (and continue to expand) above distressed credit thresholds.

ICE Benchmark Administration Limited (IBA), 'ICE BofAML Euro High Yield Index Option-Adjusted Spread' 'ICE BofAML Asia Emerging Markets Corporate Plus Sub-Index Option-Adjusted Spread', 'ICE BofAML Latin America Emerging Markets Corporate Plus Sub-Index Option-Adjusted Spread', retrieved from FRED, Federal Reserve Bank of St. Louis; https://fred.stlouisfed.org/series/BAMLEMRECRPIEMEAOAS, U.S. Investment-Grade and Speculative-Grade Spreads from S&P Global Ratings. March 27, 2020.

Global Financing | Spreads By Rating Notch

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U.S. Spreads By Rating Notch

	Current		Historical Context		Recent Context		
	27/03/2020	Beginning of the Year	GFC Median	GFC High	10-Day Average	10-Day High	10-Day Low
AAA	156	70	172	668	178	208	156
AA+	160	67	293	508	177	216	152
AA	193	79	188	357	210	241	186
AA-	187	74	237	497	199	231	168
A+	227	99	229	489	237	266	206
A	257	114	231	490	260	285	228
A-	277	126	266	567	284	311	248
BBB+	334	143	288	608	324	357	274
BBB	386	170	321	678	393	442	331
BBB-	529	222	373	887	521	584	432
BB+	813	248	508	1078	698	813	570
BB	696	282	512	1248	713	794	624
BB-	822	298	575	1361	864	971	758
B+	940	371	695	1636	970	1071	871
B	958	466	830	1881	1008	1101	926
B-	1189	604	936	2200	1219	1321	1096
CCC+	1543	659	1198	3005	1457	1620	1180
CCC	1573	1065	1418	3956	1577	1748	1405
CCC-	3439	2177	1885	5588	3414	3634	3076

Data as of Mar. 27, 2020. Source: S&P Global Ratings.

Global Financing | Spreads By Industry

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U.S. Spreads By Industry

	Current		Historical Context		Recent Context		
	27/03/2020	Beginning of the Year	GFC Median	GFC High	10-Day Average	10-Day High	10-Day Low
Aerospace and Defense	339	121	451	754	349	406	275
Automotive	667	267	399	839	620	687	500
Banks	355	129	373	745	366	427	284
Capital Goods	335	142	n/a	n/a	328	370	274
Chemicals / Packaging	396	174	272	614	394	439	335
Consumer Products	333	153	891	2,773	343	385	290
Financial Institutions	379	140	371	926	364	418	288
Forest Products / Building Materials	470	192	431	866	427	492	342
Health Care	286	140	326	682	291	322	252
High Technology	279	125	268	522	304	354	255
Homebuilders / Real Estate	397	139	737	1,561	357	404	276
Insurance	299	143	512	4,073	290	326	253
Media and Entertainment	560	195	594	1,362	567	643	466
Metals and Mining	652	273	347	717	664	739	572
Oil and Gas	1130	298	414	1,079	1093	1166	920
Retail and Restaurants	417	195	520	1,204	418	465	349
Telecommunications	354	221	741	1,777	390	446	338
Transportation	344	141	235	565	355	406	291
Utility	364	152	456	1,159	364	393	322

Data as of Mar. 27, 2020. Source: S&P Global Ratings.

Asia-Pacific Financing | Risk Aversion

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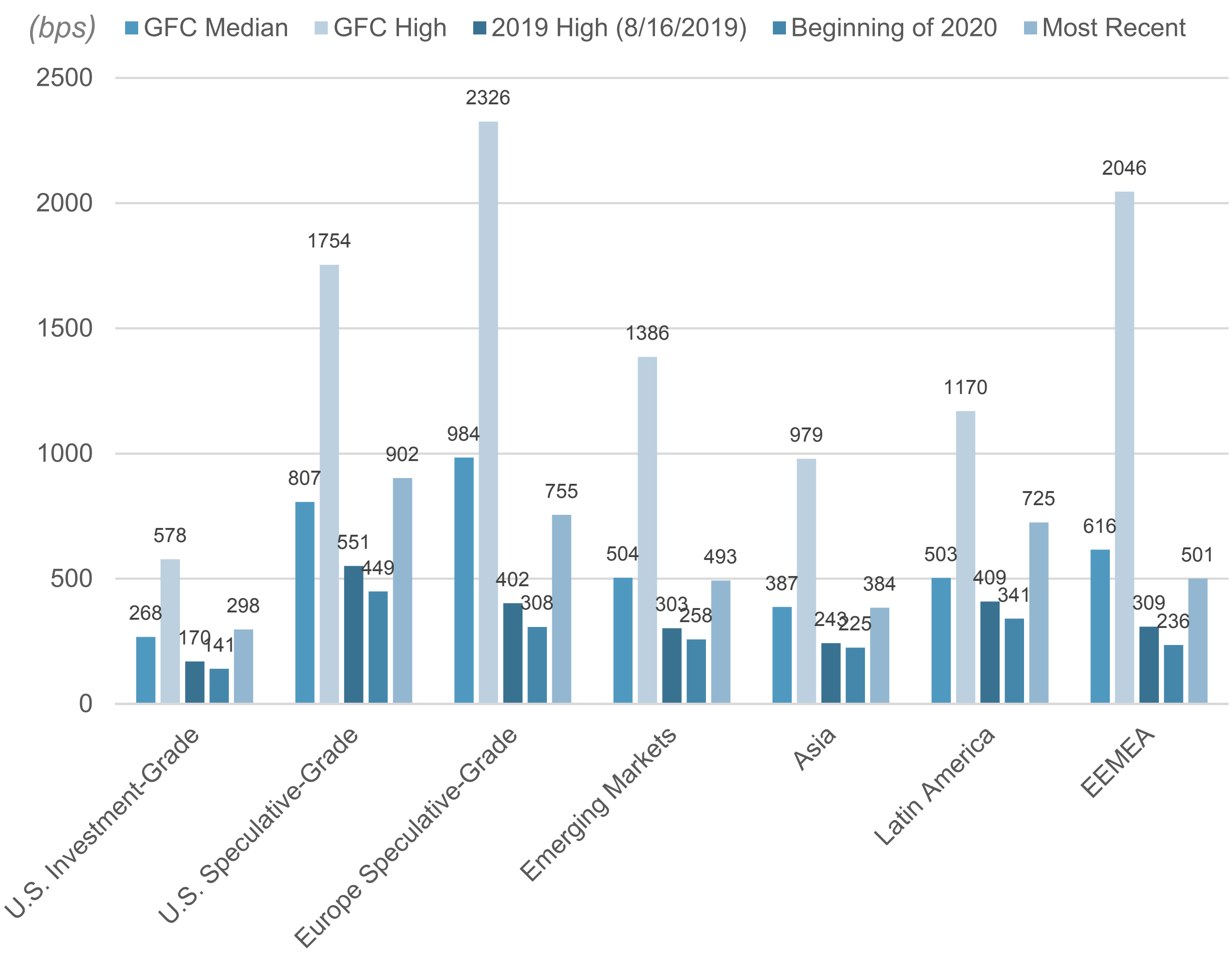
Secondary Market Credit Spreads, U.S. and Emerging Markets



- **Extreme Acceleration**. Spreads widened at nearly 10x the speed of of Dec. 2018's trade-related freeze in the speculative-grade market
- **Rapidly Rising Risk Aversion.** The combination of COVID-19's ferocious impact on global public health, supply chains, economic prospects, and capital markets caused a flight to quality all markets
- **Global Financial Crisis**. Spreads are now wider than the median during the Global Financial Crisis across most markets; Asia so far carries the lowest risk premium, in part due to the efficacy of capital and liquidity injections as well as slightly higher investor confidence that the COVID19 is showing signs of slowing in China, despite wreaking havoc on the rest of the world at this point.

ICE Benchmark Administration Limited (IBA), 'ICE BofAML High Grade Emerging Markets Corporate Plus Sub-Index Option-Adjusted Spread', 'ICE BofAML Emerging Markets Corporate Plus Index Option-Adjusted Spread', 'ICE BofAML Asia Emerging Markets Corporate Plus Sub-Index Option-Adjusted Spread', 'ICE BofAML Latin America Emerging Markets Corporate Plus Sub-Index Option-Adjusted Spread', 'ICE BofAML Europe, the Middle East, and Africa (EMEA) Emerging Markets Corporate Plus Sub-Index Option-Adjusted Spread', retrieved from FRED, Federal Reserve Bank of St. Louis; https://fred.stlouisfed.org/series/BAMLEMRECRPIEMEAOAS, U.S. Investment-Grade and Speculative-Grade Spreads from S&P Global Ratings. March 18, 2020.

Asia-Pacific Financing | Lower Rates, Tighter Conditions

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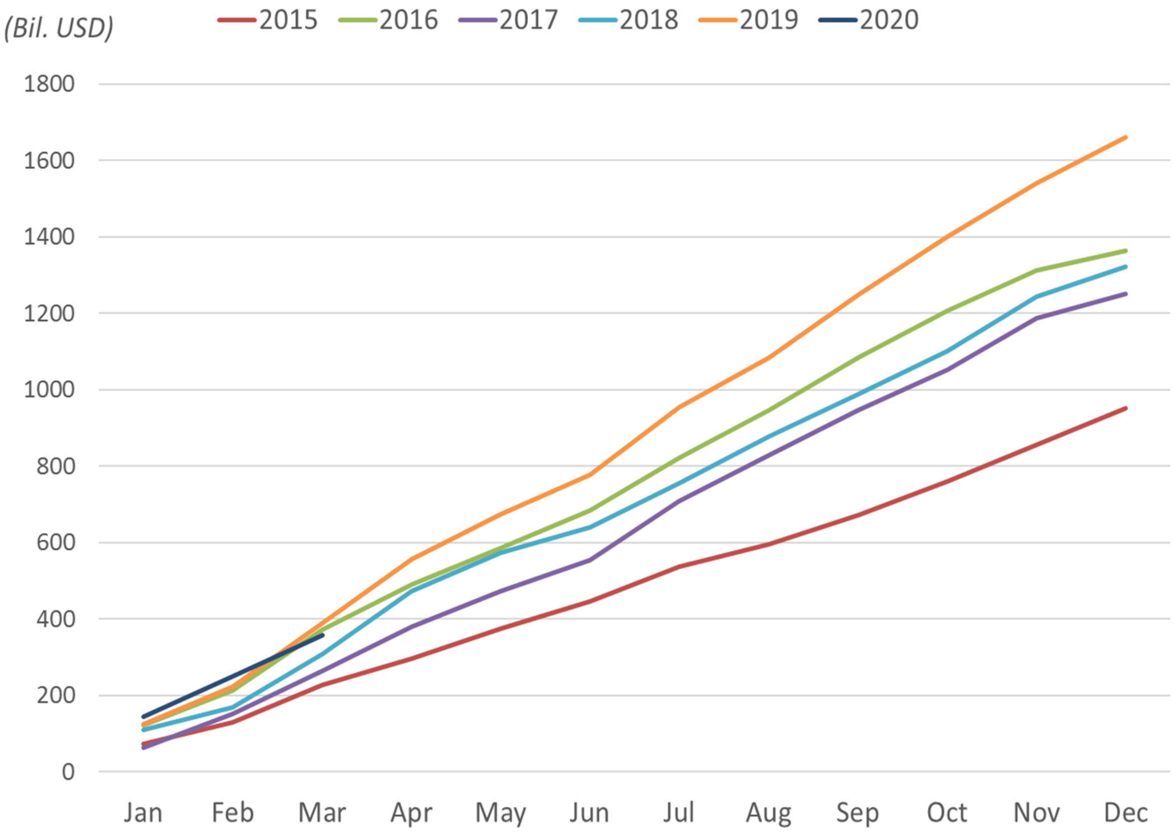
Asia-Pacific Cumulative New Corporate (Financial and NonFinancial) Bond Issuance



Data as of March 16, 2020. Source: S&P Global Ratings Research; Thomson Reuters.

- **Financing Conditions Tightening**. Asia-Pacific financing conditions continue to be tightening as disrupted business operations extend globally.
- **Risks.** With coronavirus (COVID-19) continues to heavily impact Asia-Pacific economies as well as other regions, how long it persists will be one of the top risks for financing conditions. While lower official interest rates and liquidity support provide some relief, financial markets have panicked and risk aversion will persist.
- **Issuance**. Asia-Pacific cumulative corporate bond issuance (as of March 16, 2020) was US$358 billion, slightly under last year's Asia-Pacific volume. At present, we expect the Asia-Pacific corporate refinancing maturity wall arrives by the end of this year.

Eurozone Financing | Low Demand and Uncertainty

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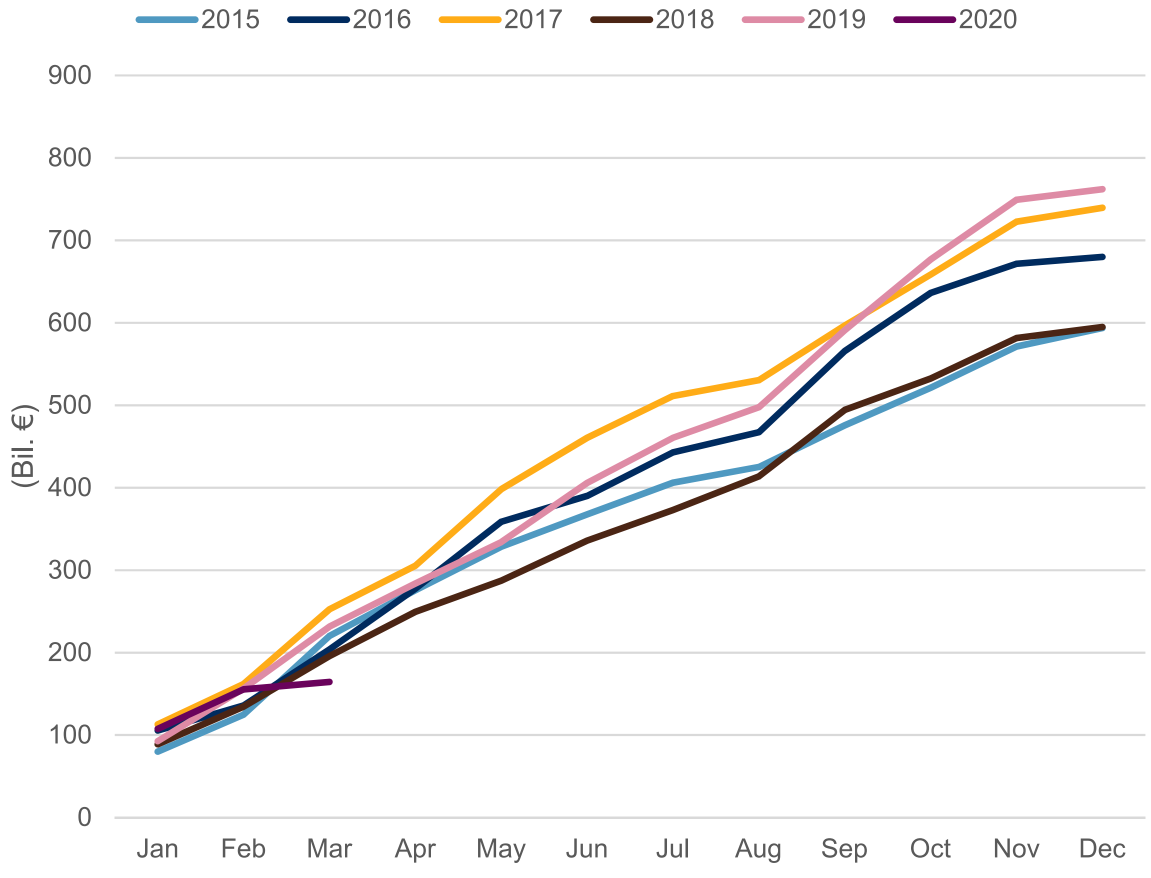
Eurozone Cumulative New Corporate (Financial and NonFinancial) Bond Issuance



Data as of March. 16, 2020. Source: S&P Global Ratings Research; Thomson Reuters.

- **Financing Conditions Tightening**. Weak demand due to COVID-19 outbreak and various business and government closures reflect worsening financing conditions despite a favorable structural environment set by the ECB's accommodative monetary policy.
- **Risks.** Risks remain on the downside as uncertainties persist about when the public health situation, macro economy, and markets will stabilize. Sub-investment grade issuers should suffer most from investors' growing risk aversion.
- **Issuance**. Cumulative corporate bond issuance in the eurozone was of €164 billion as of mid-March, owing to a strong January. Since the COVID-19 outbreak reached Europe, issuance nearly muted due to weak capital demand.

European Leverage Finance | Speed of Market Sell-Off Unprecedented

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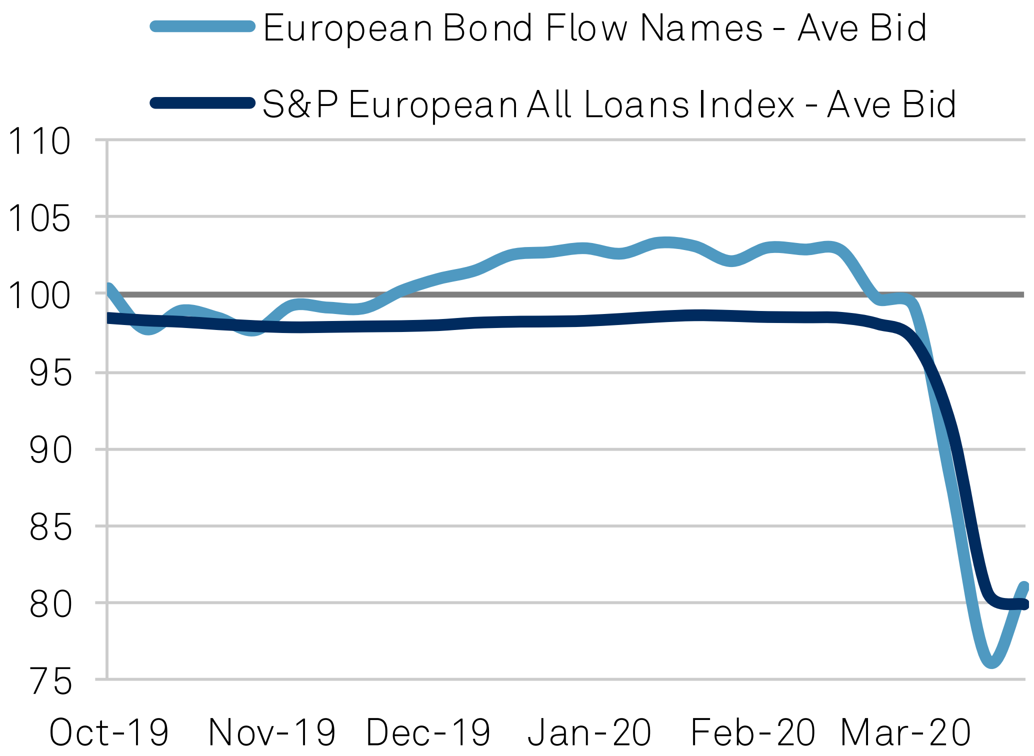
European Leveraged Loans Performed as Poorly as High Yield



S&P European Leveraged Loan Index

- **Average bid.** 79.9 March 26 from 97 on March 5.
- In 2008 it took 14 months to fall this far.
- **Distressed.** ~30% of the index trading below 80 v only 1.3% at the end of February
- **Dec 2008.** For comparison, at worst in Dec 2008 84.2% of the index was trading below 80

Sources: LCD, an offering of S&P Global Market Intelligence; Markit

EM Financing | Risk Aversion

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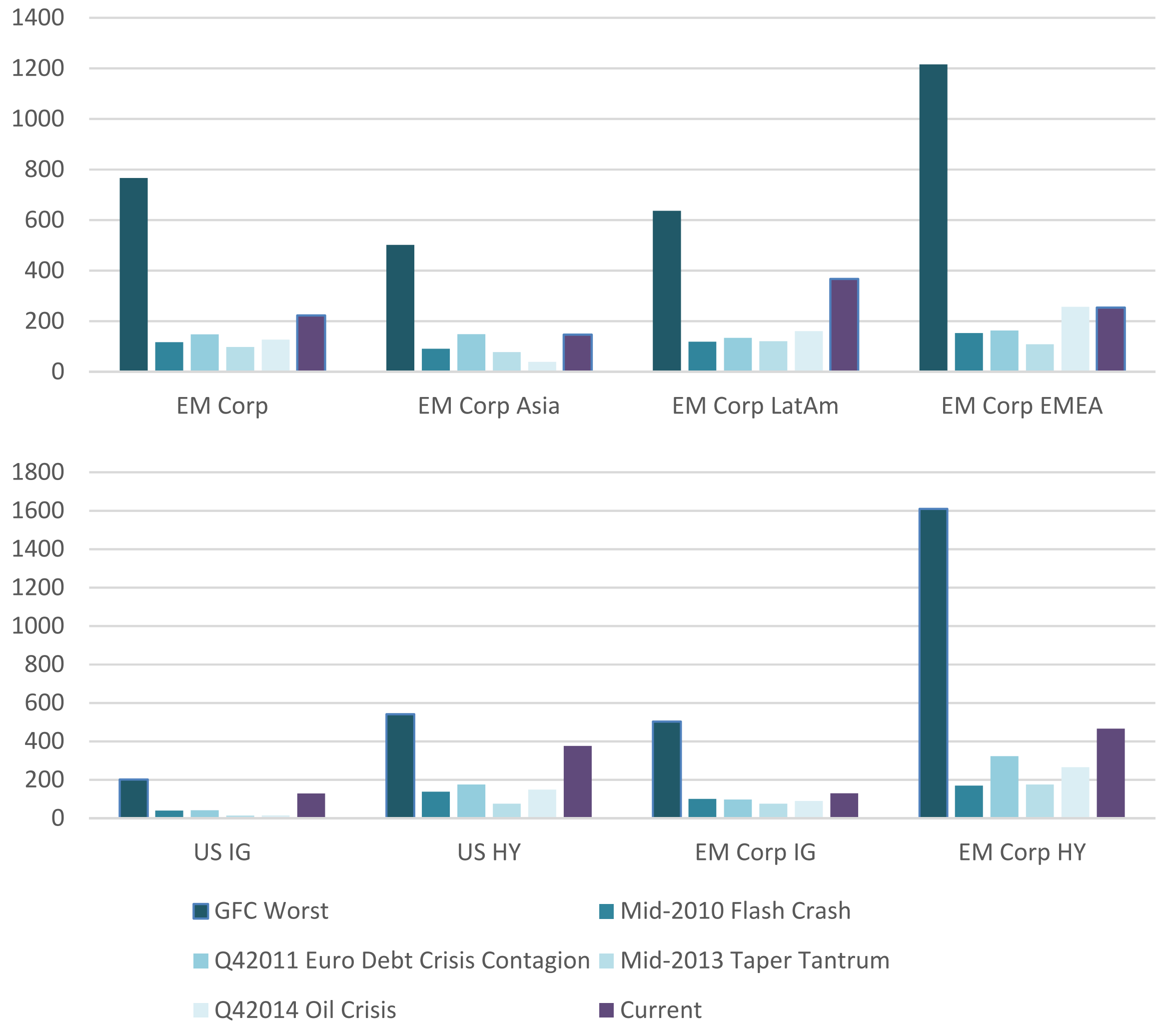
Sudeep Kesh, New York, +1-212-438-7982, sudeep.kesh@spglobal.com

Sharpest Increase In Spreads Over 26 Days (in bps)



- **Elevated risk aversion**. EMs' bond spreads quickly escalated to the highest levels and at the fastest pace in a decade, owing to a flight to quality as COVID-19 wreaks havoc on capital markets.
- **Risks.** Weak investor confidence will likely constrain debt issuances, despite accommodative monetary policy across most emerging economies due to reduced capital needs and weakening demand for goods and services across most economies.
- **Issuances**. Cumulative corporate bond issuances across EMs total $247 billion through March 10, 2020, after new debt capital stalls due to COVID-19 choke on demand.

Data as of March 16, 2020. Source: S&P Global Ratings Research, Thomson Reuters, ICE Data Indices, Federal Reserve Bank of St. Louis.

EM Sovereign CDS | Widening Spreads

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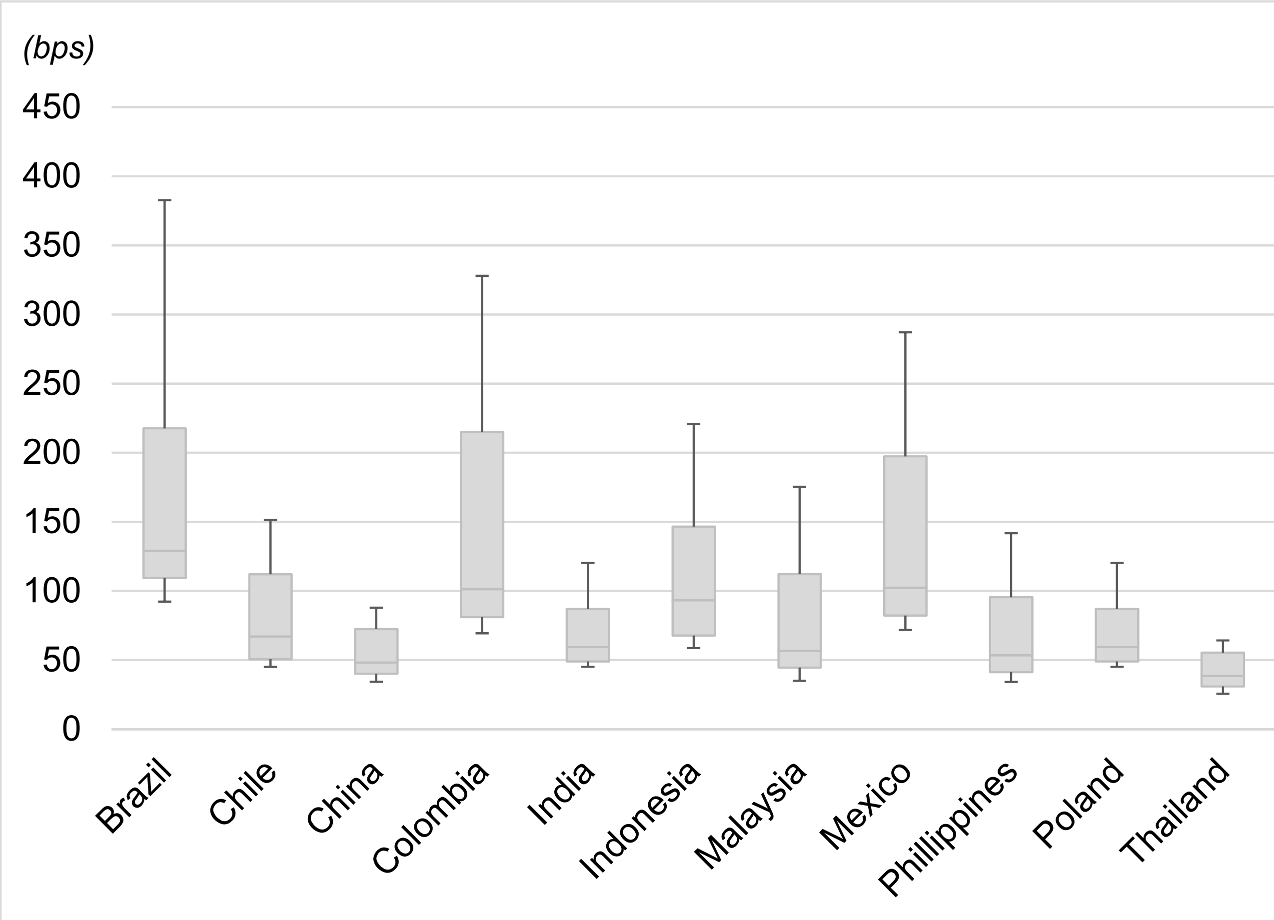
30-Day EM CDS, 5Y/USD



Data as of March 18, 2020. Source: S&P Global Ratings, Bloomberg.

- **Widening spreads**. EMs' credit default swaps (CDS) have rapidly expanded, signaling sizable investor concern about sovereign financial health.
- **Flashing signals.** Spreads widened an average of 130 bps across EMs in the past 30 days.
- **Increasing leverage**. Stimulus measures by various governments used to provide liquidity, calm market sentiment, and fund public health efforts against COVID-19 are invariably adding additional leverage to an already highly levered market.

Sector Trends

S&P Global Ratings

Corporates | COVID-19 Sector Sensitivity

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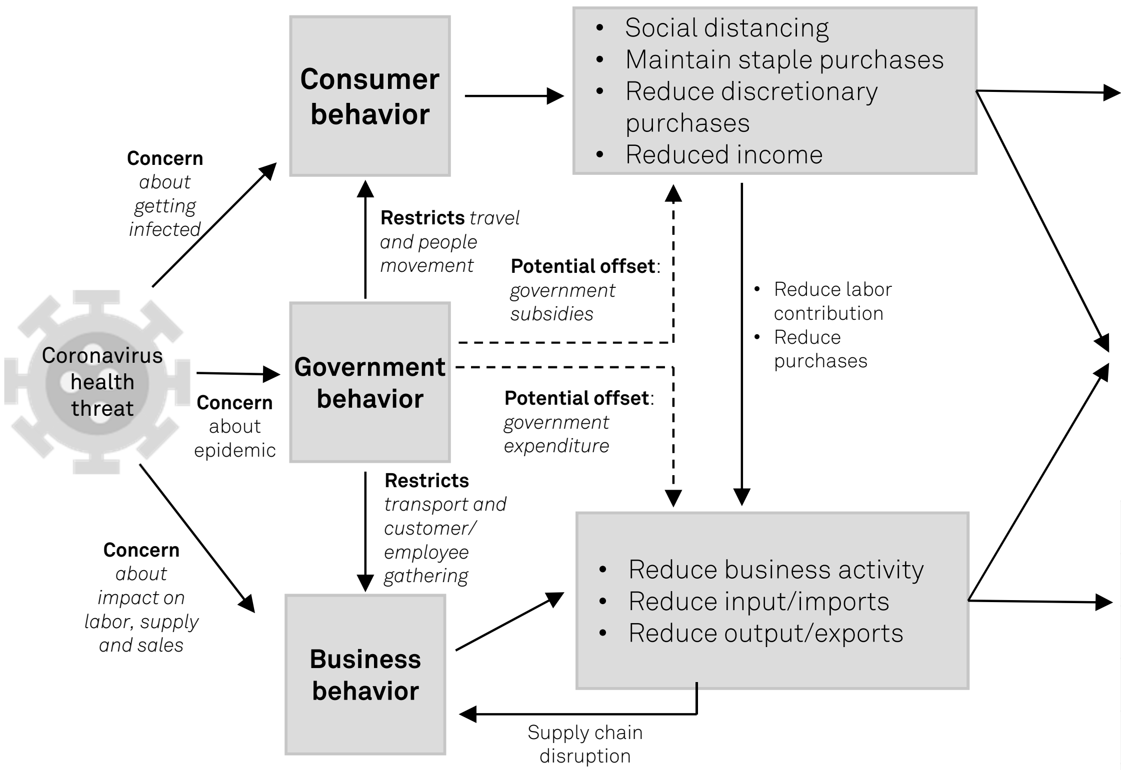

Aviation	H
Auto	H
Consumer products	M
Gaming, leisure & lodging	H
Retail & restaurants	H

Healthcare & pharma	L
Infrastructure	M
Media & telecoms	L
Real estate	M
Transport - cyclical	H

Business services	M
Capital goods	M
Chemicals	M
Materials, bldg. & constr.	M
Metals & mining	M
Oil & gas	M
Packaging	L
Technology	M
Utilities	L

Sector revenue-EBITDA relative sensitivity

Low	Medium	High

Note: This measures sensitivity to both revenues and EBITDA. These relative risk classifications are based on our analytical teams' qualitative opinions and do not indicate any potential rating trend or actions.
Source: S&P Global Ratings.

Corporates | Oil Price Collapse Fuels Higher Default Risk

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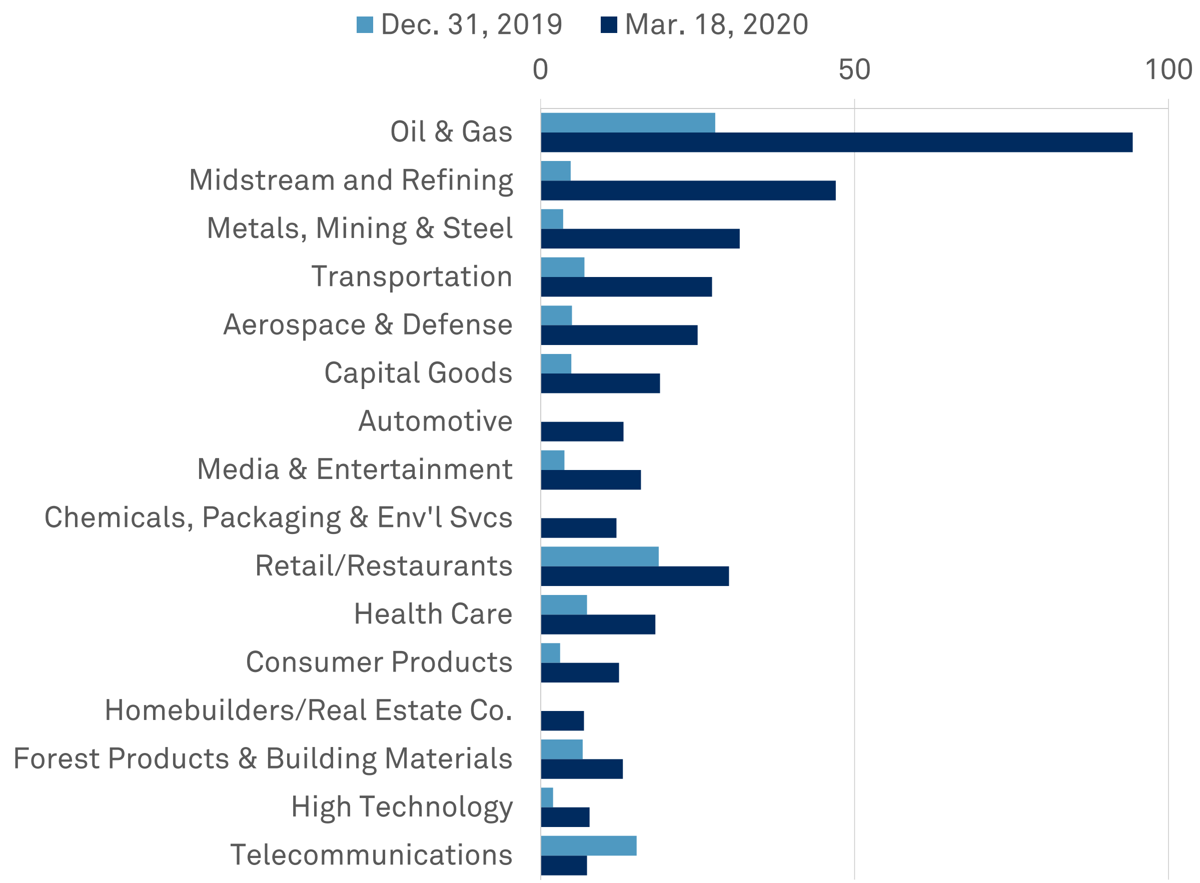
U.S. Corporate Distressed Ratios



Data as of Mar. 18, 2020. Source: S&P Global Ratings.

- **Oil and gas**. Oil price collapse after failed OPEC+ negotiations and Saudi Aramco's output hike spikes distressed ratio for oil and gas and related sectors.
- **Retail / restaurants, travel, and consumer-related sectors stall**. COVID-19 containment efforts drastically reduce revenue opportunities for retailers, restaurants, and consumer-related companies.
- **Risk aversion**. Secondary market pricing skyrockets with 'B' and 'CCC' rating categories moving to distressed levels; risk aversion spans entire spectrum of corporate ratings.

Infrastructure | COVID-19 Sector Sensitivity

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Infrastructure Sensitivity To COVID-19

Low	Medium	High
Regulated Utilities	Power Generation	Airports
	O&G Midstream (Refining; Gas pipelines)	Volume toll-roads
PF: Availability based roads / projects	PF: University housing	PF: Convention center hotels; Stadiums, Arenas, Parking facilities

PF = project finance; see also Infrastructure Projects Dependent On Discretionary Spending Could Face Negative Cash Flows Amid COVID-19 Outbreak, March 9 , 2020. S&P Global Ratings.

- **Airport traffic could plunge 20-40% in 2020, depending on location (with peak quarterly declines of 50-90%).** Structurally higher profitability and essential infra status reduce the extent of rating downside for airports (vs airlines).
- **Volume based toll-roads equally will equally experience severe declines from lock-down measures.** We do however expect a faster recovery than air traffic.
- **Power generators** could face indirectly pressure on prices resulting from reduced demand.
- **Regulated Utilities** bear little direct exposure, but credit quality could suffer if sovereign ratings were pressured.

Financial Institutions | Buffers Will Be Tested

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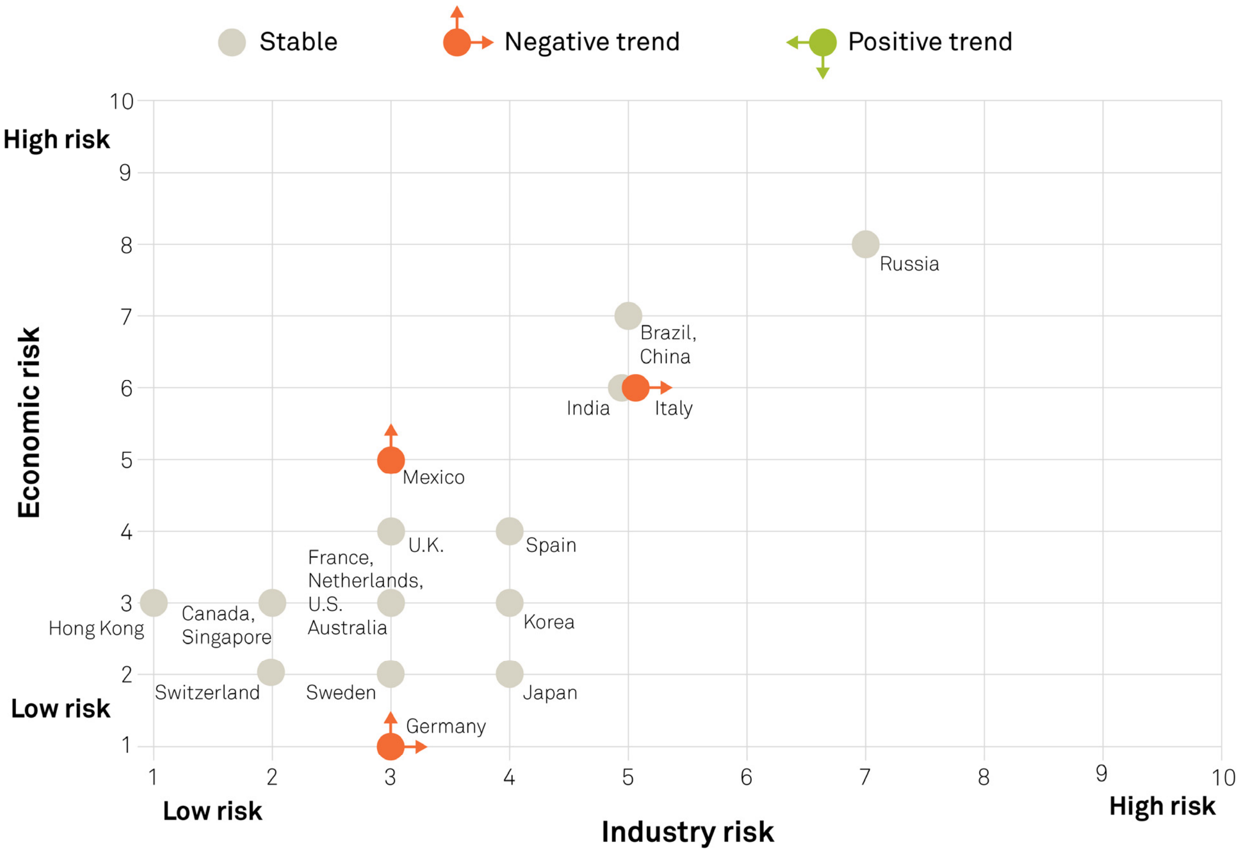
Banking Industry Country Risk Assessments (BICRA)



- **Outlook.** Deterioration is accelerating although banks' balance sheet strength generally provides some buffer.
- **Risks.** Asset quality deterioration is main risk for banks. Liquidity is also a risk factor, particularly for non-bank financial institutions along with exposure to market volatility.
- **Support.** Banks in certain markets to receive wide-ranging support measures (eg. central bank funding, guarantees) so they can help households and corporates.

A BICRA is scored on a scale from 1 to 10, ranging from the lowest-risk banking systems (group 1) to the highest-risk (group 10). Data as of Mar. 18, 2020.

S&P Global Ratings

Insurance | COVID-19 To Test Insurers' Resilience

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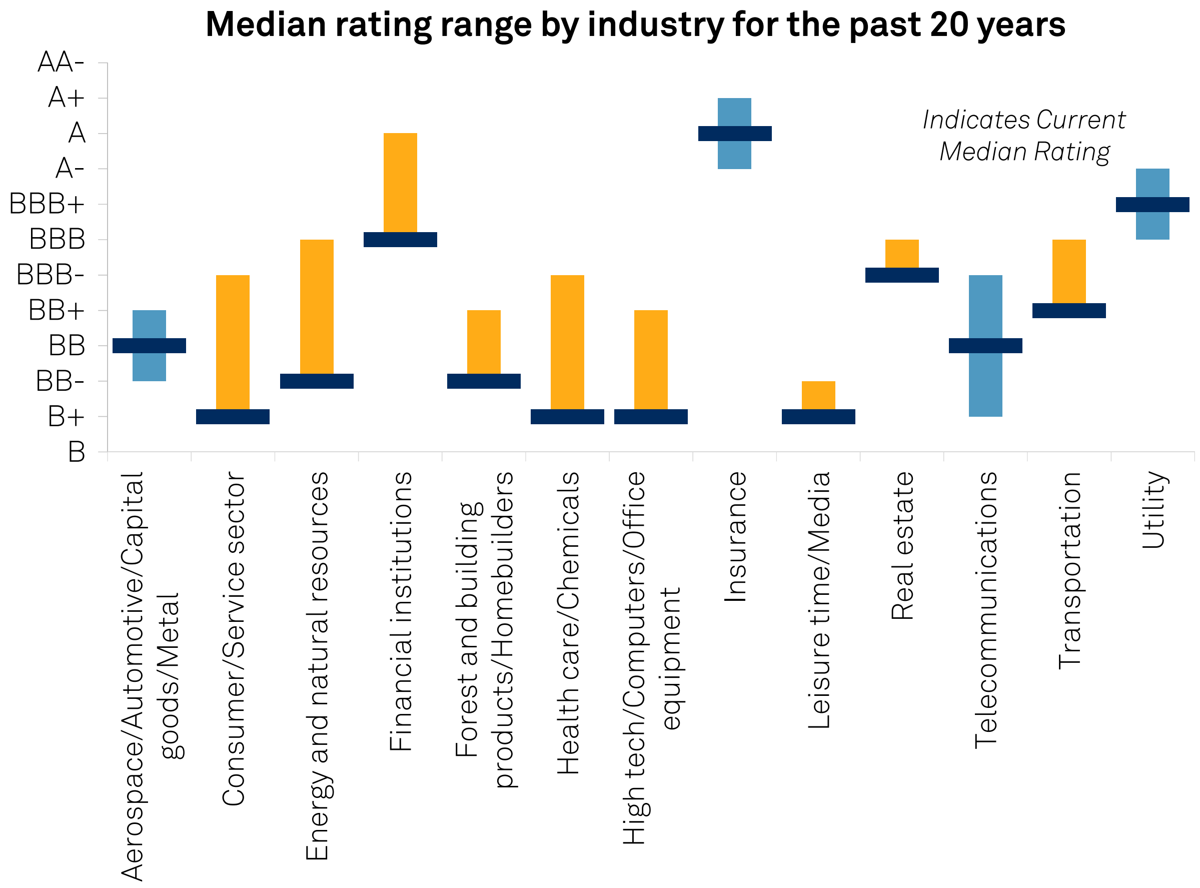
Insurance Median Ratings High & Stable Compared With Other Sectors



Data as of March 18, 2020. Ranges computed from 1998-2019Q3.
Source: S&P Global Ratings Research; S&P CreditPro.

- **Capital strength** will help stave off widespread downgrades across the global industry
- **Existing weaknesses** exacerbated and we have taken and expect to take some targeted downgrades or outlook changes
- **Life insurers are more at risk**, particularly those with relatively thin capital buffers and significant exposure to financial market volatility through their asset portfolios or product offerings
- **Regulatory solvency ratio volatility could increase deferral risk for hybrids**. Issuers' capital management and mitigation actions, as well as possible supervisory interventions, will continue to be key to our rating analysis of hybrids.

Sovereign | Assessing The Strain

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- **Lots of uncertainty** regarding the possible damage to the global economy propelled widespread volatility in equities, credit conditions and commodity prices.
- What started as a **supply chain disruption** is quickly evolving into a **demand shock** resulting in large amounts of **monetary** and --more recently-- **fiscal** stimulus being called into action.
- We assume **COVID-19 to be a temporary hit**. As such we expect a most likely U shape recovery, coming in 2021.
- We are focusing on **three aspects** as we are assessing if a sovereign can absorb the shock while maintaining its current ratings.
  - The **duration** and severity of the epidemic
  - The **timeliness and adequacy** of the policy response
  - The underlying economic and political **resilience – Pre COVID-19 Financial & Economic Health**
- Governments with ratings on the **lower end of the scale** are more exposed to current **liquidity stress** and more at risk; also those heavy reliant on **one Industry (commodities/tourism)** as major contributor to revenues & GDP are also more at risk as a result of this first wave of shocks.
- The extent of the **damage to public finance** combined with the expected capacity of their **economies to recover** will inform future trajectory of Sovereign Ratings.

Structured Finance | Impact of COVID-19

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Region & Sector	2020 Collateral Performance Trends	2020 Ratings Performance Trends
US RMBS	Somewhat weaker	Stable-to-Negative
US ABS	Somewhat weaker	Stable-to-Negative
US CMBS	Somewhat weaker	Stable to Negative
US CLO	Weaker	Negative
US ABCP	Somewhat weaker	Stable
Canadian ABS	Somewhat weaker	Stable
European RMBS	Somewhat weaker	Stable-to-Negative
European ABS	Somewhat weaker	Stable-to-Negative
European CMBS	Somewhat weaker	Stable
European CLO	Weaker	Stable-to-Negative
European Covered Bonds	Stable	Stable
Asia Region Structured Finance	Stable	Stable
Pacific Region Structured Finance	Somewhat weaker	Stable-to-Negative
Latin America Region Structured Finance	Somewhat weaker	Stable-to-Negative

- **Liquidity Risk**. Risk of payment holidays for consumer, mortgage, and small to medium enterprise debt could interrupt cash flow, but structural mechanisms should insulate investors from shortfalls unless the interruptions endure.
- **Areas of focus**. CLO, CMBS with high exposure to retail or hotels, US subprime auto, US non-QM RMBS, aircraft ABS, small business or SME related ABS, dealer floorplan, corporate securitizations and certain other esoteric asset classes.
- **Downside Risk**. Negative revisions to current global economic forecast for 2020. Material sovereign and counterparty downgrades in 2020.

U.S. Public Finance | Virus Impacts Vary By Sector

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Coronavirus: What We Are Watching In U.S. Public Finance

State/Local
Economic/revenue trends as well as preparedness and costs associated with the pandemic

Health Care
Demand on capacity and resources, and impact to revenues/expenses

Higher Education
Impacts to revenues / expenses and longer term pressure on demand

Transportation
Collapse of travel and mobility is an unprecedented demand shock

Water Utilities
General economic trends; treatment and disinfection methods already sufficient

Public Power
General economic trends; ability to staff operations 24/7

Source: S&P Global Ratings.

- **Transportation infrastructure:** Nearly all long-term debt ratings in the sector have been revised to negative. The economic contractions and reduced travel and mobility lead to an unprecedented demand shock.
- **State and local governments:** Costs of containment and mitigation and the economic/revenue fallout of mobility restrictions will create fiscal pressure. Federal stimulus will offset some of this but timing is key.
- **Health care:** Duration, location, and severity of the outbreak matter. Sustained investment market deterioration could also pressure credit quality.
- **Higher education:** Many institutions have transitioned to remote learning, which has revenue implications. Fall 2020 enrollment at U.S. colleges and universities will likely be weaker than expected.

Related Research

S&P Global
Ratings

COVID-19| Latest Research

- Credit Conditions EMEA: Europe Goes Into Lockdown, April 1, 2020
- Credit Conditions North America: Unprecedented Uncertainty Slams Credit, March 31, 2020
- Credit Conditions Emerging Markets: Covid-19 Magnifies Risks, March 31, 2020
- Coronavirus Impact: Key Takeaways From Our Articles, March 31
- Recession Likely Will Spur The European Speculative-Grade Default Rate To Rise Toward 8%, March 31
- COVID-19: Coronavirus-Related Public Rating Actions On Corporations And Sovereigns To Date, March 31
- The Escalating Coronavirus Shock Is Pushing 2020 Global Growth Toward Zero, March 30
- European ABS And RMBS: Assessing The Credit Effects Of COVID-19, March 30, 2020
- Credit Conditions Asia-Pacific: As Bad As 1997, March 29
- COVID-19: The Steepening Cost To The Eurozone And U.K. Economies, March 26
- Despite The COVID-19 Pandemic, The Outlook For The U.S. Health Insurance Sector Remains Stable, March 26
- European Corporate Securitizations: Assessing The Credit Effects Of COVID-19, March 26
- COVID-19 Increases Pressure On Global Media & Entertainment Ratings, March 26
- Aircraft Lessors, Hit By Coronavirus Fallout, Should Fare Better Than Their Airline Customers, March 25
- European CLOs: Assessing The Credit Effects Of COVID-19, March 25
- Global Macroeconomic Update, March 24: A Massive Hit To World Economic Growth, March 24
- Credit FAQ: Assessing The Coronavirus-Related Damage To The Global Economy And Credit Quality, March 24
- U.S. CLO Exposure To Negative Corporate Rating Actions, March 24
- COVID-19 Will Batter Global Auto Sales And Credit Quality, March 23
- U.S. Lodging-Backed CMBS Bracing For The Impact Of COVID-19, March 23

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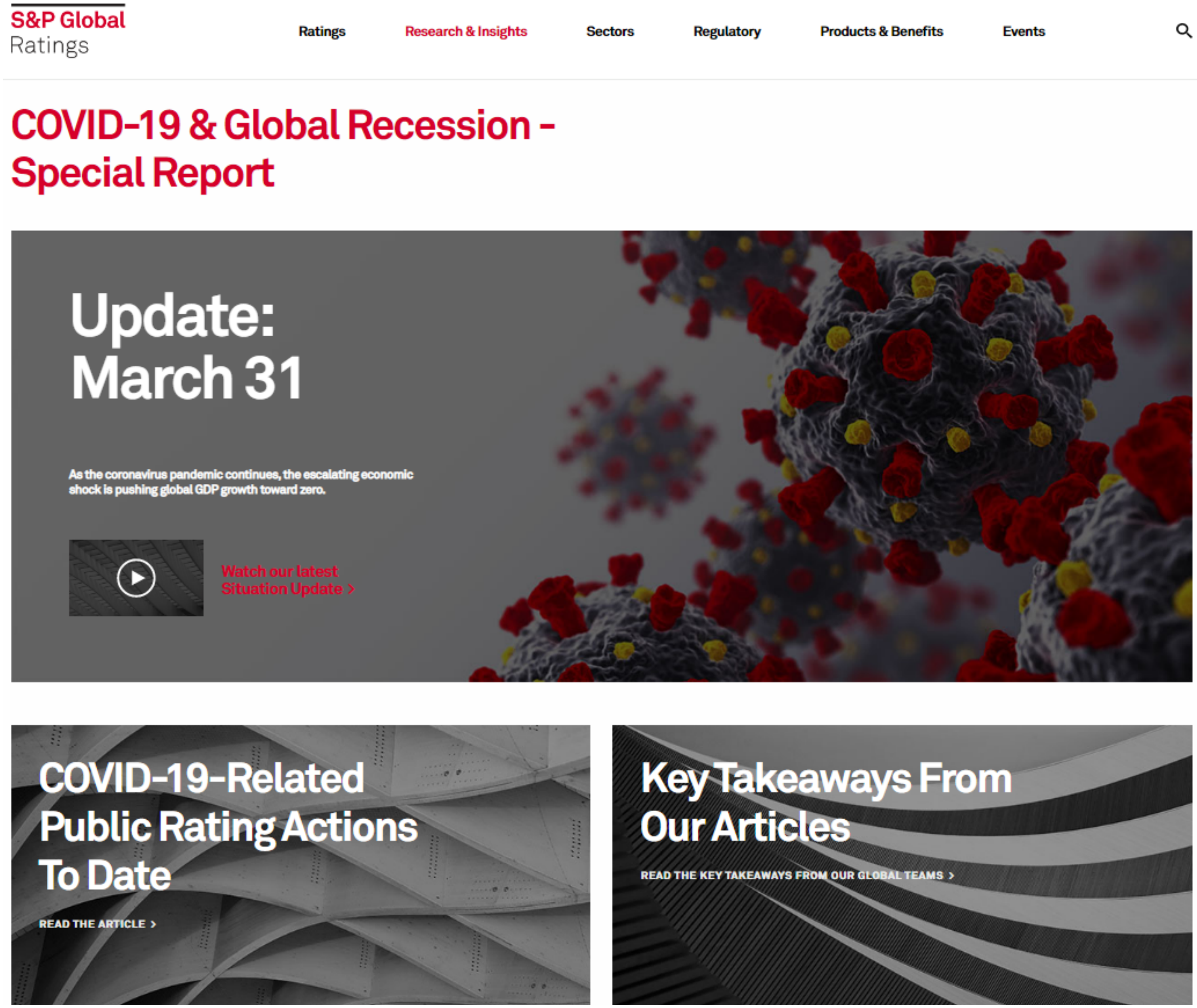

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