"If this is your first crisis in life, I welcome you to the game. If you have scar tissue from previous experiences, what you know is, we are going to come out of this. And we are going to come out of this better than we went into it."

Retired US Army General Stanley McChrystal, addressing Deutsche Bank staff on March 25, 2020

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COVID-19 Cases Surge Toward 1 Million Globally



The US, Italy and Spain have each overtaken China in total confirmed COVID-19 cases

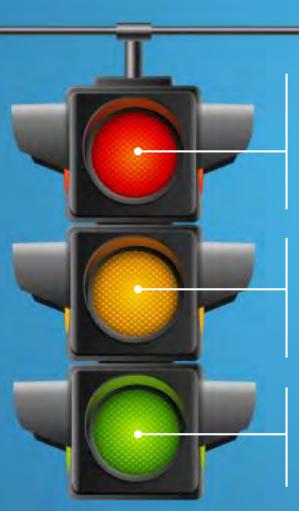


Source: Johns Hopkins CSSE, WHO, CDC, ECDC, NHC and DXY. As of 9:15am EST, March 31, 2020.

Scorecard for US Policy Response



While the US monetary and fiscal response has been reasonably swift and sizable, the more important US "virus response" has lagged significantly, with adverse implications for public health, the economy and markets



VIRAL RESPONSE

- Failure to respond quickly to early warning signals from China, SK, Italy
- Inability to adopt Developed Asia model (Singapore, SK, Taiwan, HK)
- · Initial White House and social resistance to vigorous social distancing
- Rank well below other countries on screening and testing ("driving blind")
- Massive shortages on health equipment and PPE (masks, ventilators)

FISCAL RESPONSE

- Size and scope of US fiscal stimulus very impressive (\$2.8 trillion, 13% of GDP)
- Unprecedented US Treasury and Fed coordination
- However, unclear if it will be effective enough to prevent millions of layoffs and thousands of small business closures
- · Additional and more targeted follow-up stimulus bills likely needed

MONETARY RESPONSE

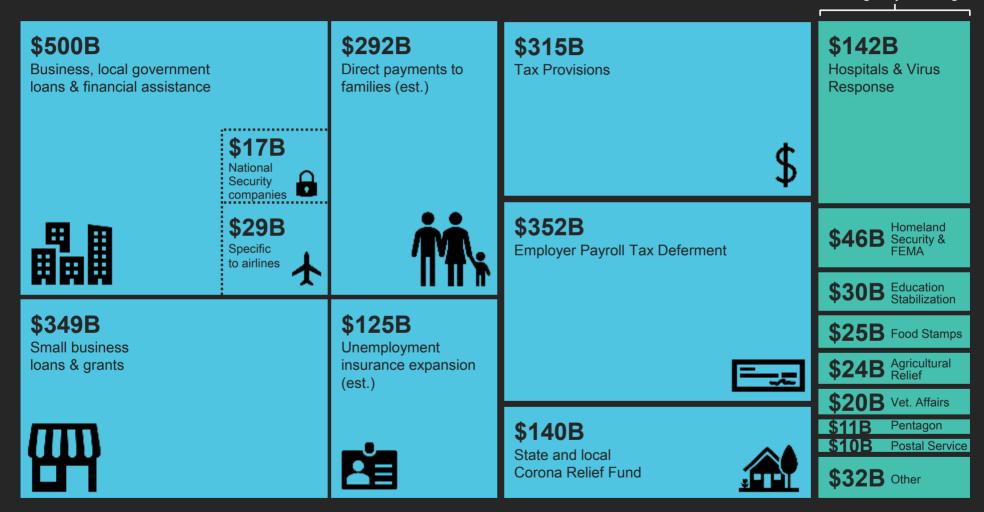
- Reopening the 2008-2009 playbook
- · Fed as the conduit of government response to markets, corporates and SMEs
- · Ability to resolve "demand shock" still limited

The \$2.4 Trillion CARES Act



The US Coronavirus Aid, Relief & Economic Security Act (CARES Act) includes approximately \$733 bn of fiscal stabilizers, \$352 bn of tax deferments, \$480 bn of direct spending and \$849 bn of loans

\$340BEmergency Funding

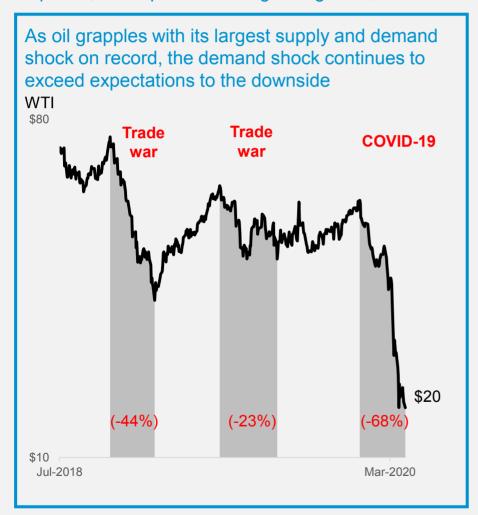


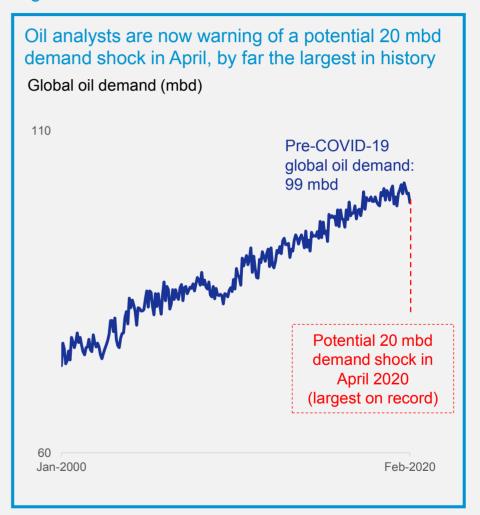
Source: DB Global Markets Research (Ryan, Luzzetti, Weidner. "What's in the \$2 trillion stimulus package?"). US Senate, Committee for a Responsible Federal Budget, Bloomberg Research

The Dual Shock of Oil's Capitulation



The full extent of oil's capitulation, already the largest global demand shock in history, is both ill-timed and perhaps still underestimated by consensus views. With tail risk scenarios pointing to the possibility of single digit oil prices, the implications for global growth, S&P 500 earnings and credit defaults would be formidable.





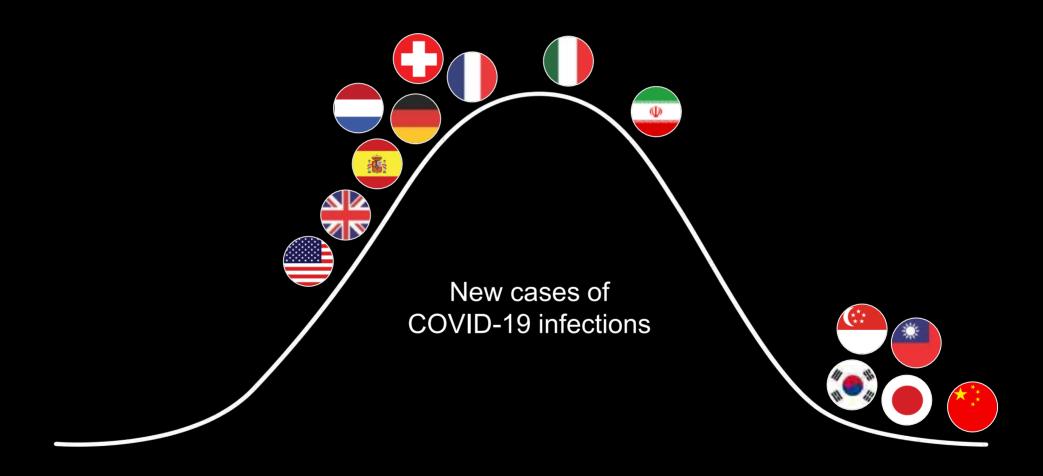
Source: (1-2) Bloomberg. Data as of March 30, 2020.



The COVID-19 Transmission Cycle



While developed Asia was hit early and flattened the curve quickly, many countries in Europe are still approaching "peak" rates, while the United States may be an additional 10-14 days behind Europe

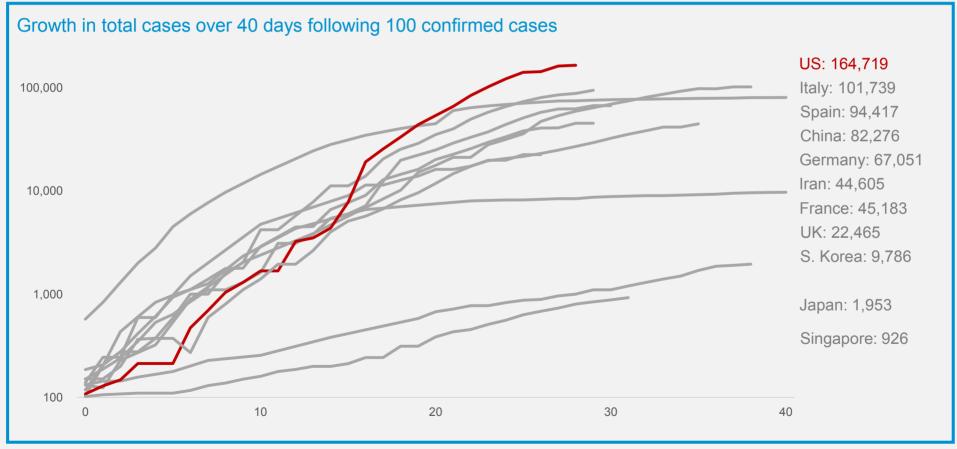


Source: (1) Data from Johns Hopkins University Center for Systems Science Engineering dashboard. Data as of March 20, 2020. Other data includes all countries that only have less than 44 cases.

Flattening the Curve



The virus data matters the most, and ultimately, the forward path of the economy and markets are most closely linked to "flattening the curve." In recent days, due in part to an increase in broad-based testing in New York, the US "curve" of confirmed cases has begun to decouple from those of other countries. With US testing outside of New York still quite low, we expect a continued surge in US numbers as testing expands across the country in the weeks ahead. As happened in NYC, many clusters are developing nation-wide that will become more apparent as testing becomes more available.



Source: (1) Johns Hopkins University. Enodo Economics (Diana Choyleva). WHO. CEIC. Data as of March 31, 2020. Chart shows only first 40 days after first day of over 100 reported cases, end label is data as of March 31, 2020. Axis is on logarithmic scale.

The COVID-19 "Global Footprint"



In less than 2-3 months, the COVID-19 virus has spread to more than 175 countries and all 50 states in the US

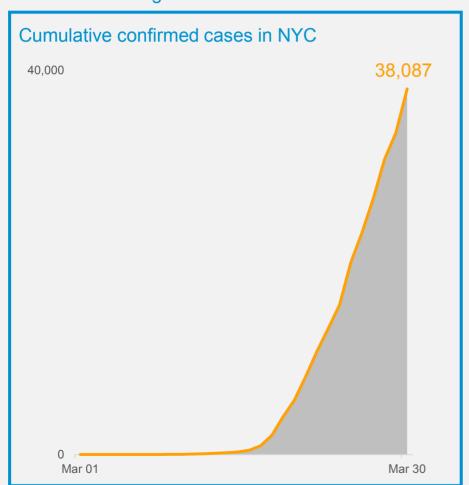
Country	# of confirmed cases	# of deaths	Country	# of confirmed cases	# of deaths	Country	# of confirmed cases	# of deaths	Country	# of confirmed cases	# of deaths
United States	164,719	3,173	Denmark	2,994	90	Argentina	966	25	Lebanon	463	12
Italy	101,739	11,591	Ireland	2,910	54	Peru	950	24	Bosnia & Herz.	411	12
Spain	94,417	8,189	Malaysia	2,766	43	Singapore	926	3	Latvia	398	0
China	82,276	3,309	Chile	2,449	8	Dominican Rep.	901	42	Bulgari	379	8
Germany	67,051	682	Russia	2,337	17	Croatia	867	6	Andorra	370	8
France	45,183	3,032	Romania	2,245	72	Slovenia	802	15	Slovakia	363	0
Iran	44,605	2,898	Poland	2,215	32	Colombia	798	14	Tunisia	362	10
UK	22,465	1,412	Philippines	2,084	88	Serbia	785	16	Kazakhstan	336	2
Switzerland	16,176	373	Luxembourg	1,988	22	Estonia	745	4	Costa Rica	330	2
Belgium	12,775	705	Ecuador	1,966	62	Diamond Princ.	712	10	Taiwan	322	5
Netherlands	12,662	1,040	Japan	1,953	56	Qatar	693	1	Uruguay	320	1
Turkey	10,827	168	Pakistan	1,865	25	Egypt	656	41	Moldova	298	2
Austria	9,902	128	Thailand	1,651	10	New Zealand	647	1	Azerbaijan	298	5
South Korea	9,786	162	Saudi Arabia	1,563	10	Iraq	630	46	Kuwait	289	0
Canada	7,448	89	Indonesia	1,528	136	UAE	611	6	N. Macedonia	285	9
Portugal	7,443	160	Finland	1,418	17	Algeria	584	35	Jordan	268	5
Israel	4,831	17	South Africa	1,326	3	Morocco	574	33	Burkina Faso	246	12
Brazil	4,661	167	India	1,251	32	Bahrain	567	4	Albania	243	13
Norway	4,592	36	Greece	1,212	46	Ukraine	549	13	San Marino	230	25
Australia	4,559	18	Mexico	1,094	28	Lithuania	533	8	Cyprus	230	7
Sweden	4,435	180	Iceland	1,086	2	Armenia	532	3	Vietnam	207	0
Czechia	3,002	25	Panama	1,075	27	Hungary	492	16	Other	4,582	94

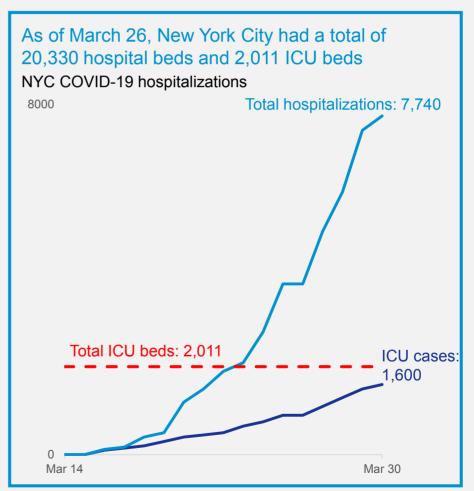
Source: (1) Data from Johns Hopkins University Center for Systems Science Engineering dashboard. Data as of March 31, 2020. Other data includes all countries that only have less than 200 cases.

COVID-19 Cluster in New York City



While the NYC cluster may prove to be the largest in the US, it is likely one of the first of several dozen to come nation-wide. As happened in China and Italy and other regions, the number of available ICU beds in NYC is rapidly approaching full capacity, with policy makers now building make-shift hospitals in multiple locations including the Jacob Javits Center and Central Park.





Source: (1-2) NYC Department of Health and Mental Hygiene. Data as of March 31, 2020.

Driving Blind Without Broad-Based Testing



The United States lags well behind other major countries in arguably the single most important part of the virus response - early, vigilant and broad-based testing. While the reasons are numerous, coordination challenges at multiple levels (federal, state, local, CDC, FDA and HHS), and a failure to prioritize this need sooner, contributed to the current shortfall. This, in turn, will have implications for the magnitude of economic contraction, credit defaults and market dislocation in the months ahead.

US federal government response



Donald Trump, President of the United States



Dr Robert Redfield, Head of CDC



Alex Azar II, Head of HHS & previous Head of Coronavirus Taskforce



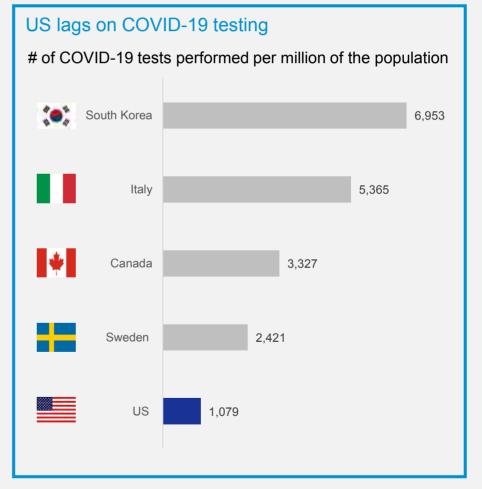
Mike Pence, VP & Head of Coronavirus Taskforce



Dr Stephen Hahn, Head of the FDA



Dr. Deborah Birx, White House Coronavirus Response Coordinator



Source: (1-2) COVID Tracking Project, reports from country health departments. Data as of March 30, 2020.

COVID-19 Testing: US State Rankings



Coronavirus News: State-by-state rankings: COVID-19 testing per 1 million residents

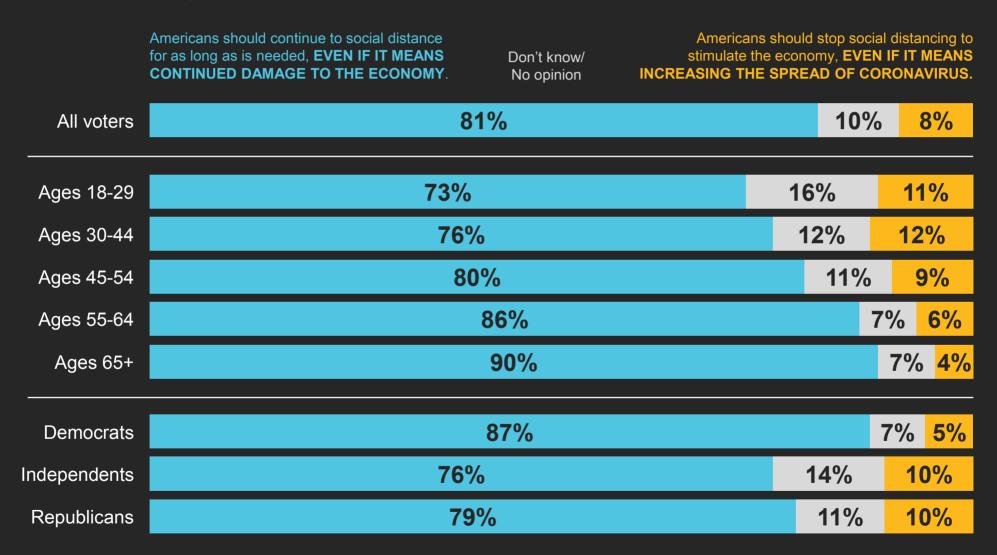
	,			3					
	State	# tested (Mar 26)		State	# tested (Mar 26)		State	# tested (Mar 26)	
1	New York	6,277	18	Wisconsin	2,111	35	lowa	874	
2	Washington	4,503	19	Montana	2,058	36	Nebraska	857	
3	Louisiana	3,878	20	Wyoming	1,909	37	Georgia	841	
4	New Mexico	3,717	21	Connecticut	1,862	38	Alabama	836	
5	Massachusetts	3,427	22	Oregon	1,726	39	Texas	739	
6	Vermont	3,218	23	Nevada	1,661	40	Kentucky	739	
7	Hawaii	3,144	24	Ohio	1,481	41	Virginia	725	
8	North Dakota	2,744	25	Rhode Island	1,420	42	Indiana	691	
9	Maine	2,640	26	Pennsylvania	1,416	43	Arkansas	609	
10*	Dis Of Columbia	2,631	27	Colorado	1,400	44	West Virginia	604	
11	Alaska	2,543	28	Illinois	1,312	45	South Carolina	537	
12	Utah	2,405	29	North Carolina	1,231	46	California	516	
13	New Jersey	2,312	30	Idaho	1,224	47	Oklahoma	305	
14	New Hampshire	2,308	31	Florida	1,215	48	Delaware	171	
15	Minnesota	2,296	32	Kansas	1,043	49	Missouri	142	
16	South Dakota	2,282	33	Michigan	942	50	Arizona	127	
17	Tennessee	2,183	34	Mississippi	933	51	Maryland	112	

Source: (1) The COVID Tracking Project. State Health Agencies. https://covidtracking.com/data/.

Voter Views on Social Distancing



When asked to pick, large shares of voters said Americans should continue to social distance to curb the spread of coronavirus



Source: Morning Consult, Stop the Spread of Coronavirus or Spur the Economy Poll March 24-26, 2020, among 1,900 registered voters with a margin of error of +/- 2%.



VIX Still Trading Above 50



Despite the recent equity rally, equity market volatility (VIX) is trading above 50. Over the last 100 years, there have only been 3 other occasions where volatility in global markets has spiked as quickly as in March 2020: the 2008 financial crisis, 1987 stock market crash, and the 1929 Great Depression. S&P 500 equity volatility (VIX) Treasury volatility (TYVIX) **Currency volatility (CVIX)** 2008 2008 2020 2008 2020 2020 **Volatility of Volatility (VVIX)** Rates volatility (MOVE) Crude oil volatility (OVX)

2020

2008

Source: (1-6) Bloomberg. Data as of March 30, 2020.

2008

2020

2008

2020

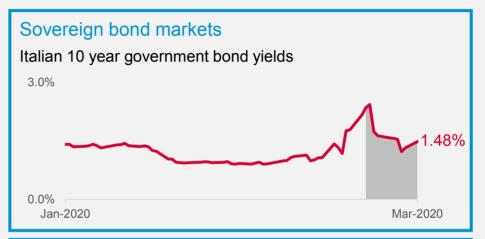
Rates & Dollar Funding Market Dislocations

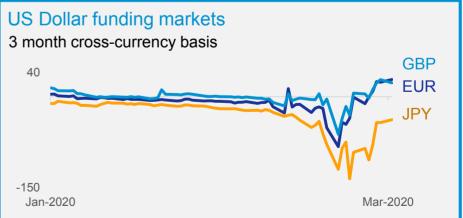


Decisive Fed, ECB and global Central Bank action has significantly improved rate market liquidity, though funding pressures persist in selected markets. Most importantly, more orderly market function has been restored in the largest and most liquid market in the world (US Treasuries), as evidenced by the rapid decline in UST yields in late March. While cross-currency swap markets have eased considerably, dollar funding pressures persist, forcing the Fed to expand its policy toolkit from additional swap lines to repo facilities.









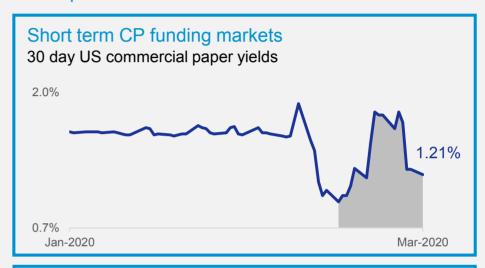
Source: (1-4) Bloomberg. Data as of March 30, 2020. DB Global Markets Research (Zeng). DB Global Markets Research "US financial market stress: Monitoring out top indicators" (Zeng).

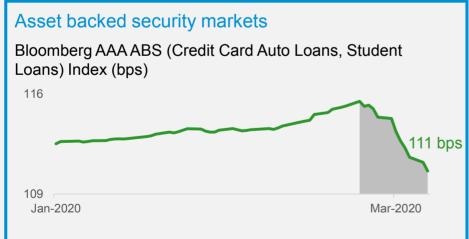
Funding Market Dislocations



The Fed has expanded its role as "buyer of last resort" during the 2008 financial crisis, now buying USTs, MBS, ABS, munis, CP, and for the first time, investment grade corporate credit.







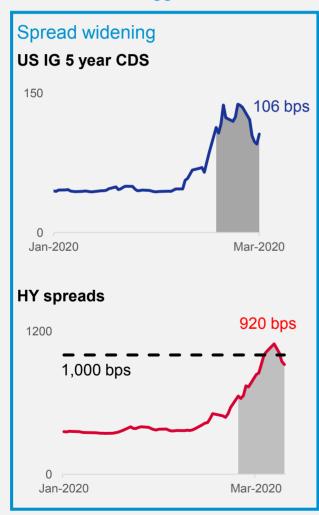


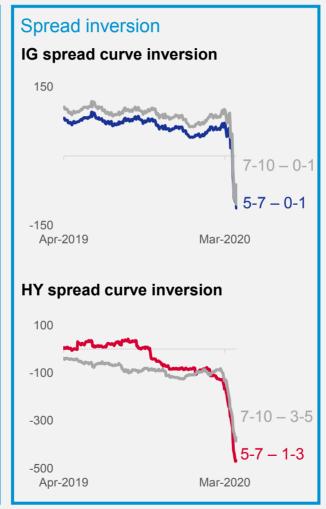
Source: (1-4) Bloomberg. Data as of March 30, 2020.

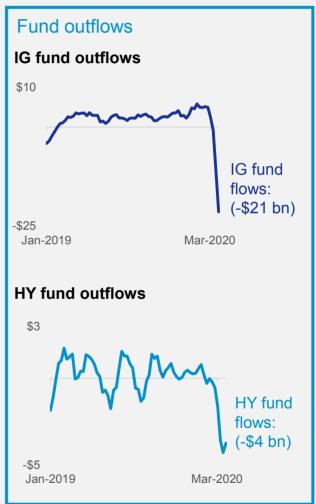
USD Corporate Credit Market Dislocations



Fed policy action has reopened USD IG new issue markets, which finished March with the largest issuance week, month and quarter on record. With default risk rising, however, spreads remain elevated. Credit curve spread inversion also suggests that the front-end is still not functioning properly given heightened near term economic risk.





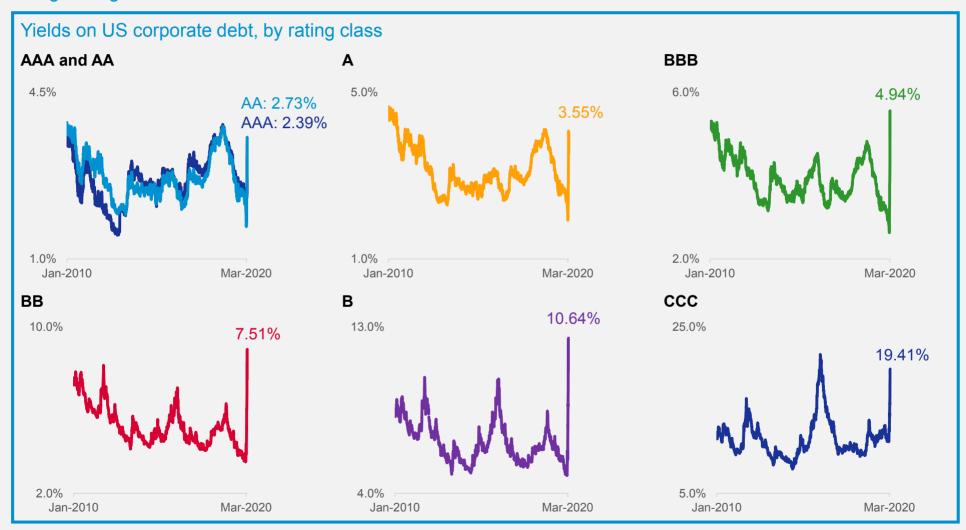


Source: (1,3) Bloomberg. Data as of March 30, 2020. (2,4) DB Global Markets Research "US financial market stress: monitoring our top indicators" (Nicol). ICE indices. (5-6) Lipper Fund Flows. Data as of March 30, 2020. 4 week rolling average.

Cost of Corporate Borrowing Soars



While IG markets have reopened on the back of Fed support, the cost of borrowing has soared across ratings categories

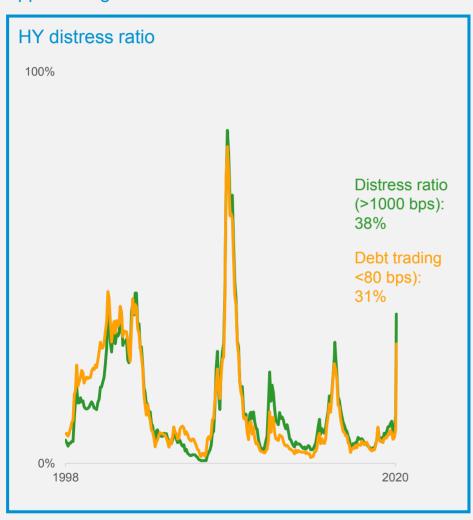


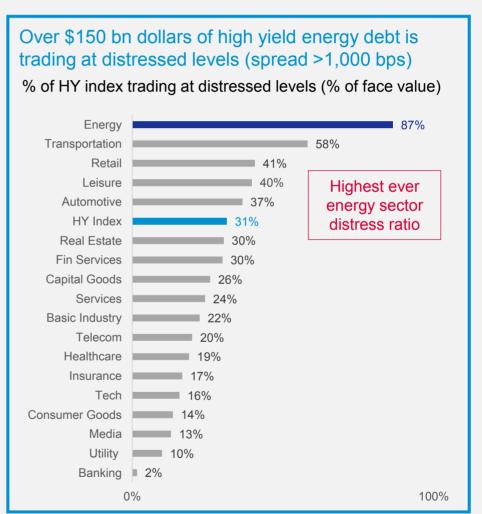
Source: (1-6) ICE BAML indices. Fed. Data as of March 29, 2020.

Distressed Debt Rising Rapidly



The amount of distressed corporate bonds in the USD market quadrupled in late March to nearly \$1 trillion, approaching levels not reached since 2008



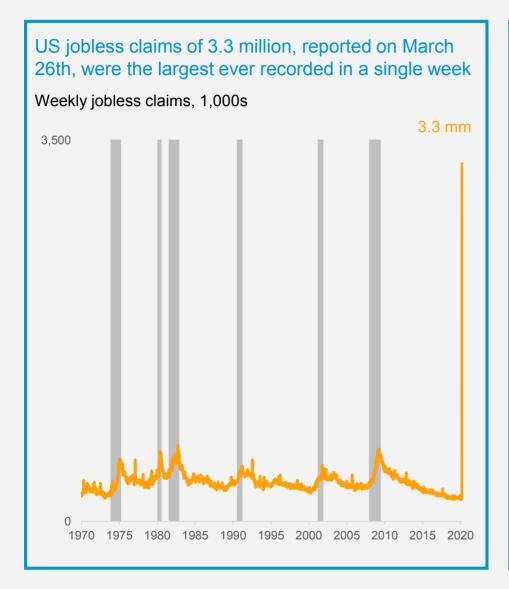


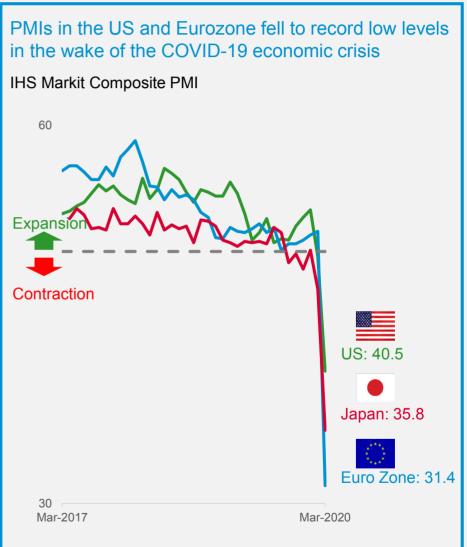
Source: (1) Bloomberg. Data as of March 28, 2020. (2) CreditSights. Data as of March 31, 2020. DB Global Markets Research (Reid. Nicol).



Most Rapid Economic Descent in 100 Years





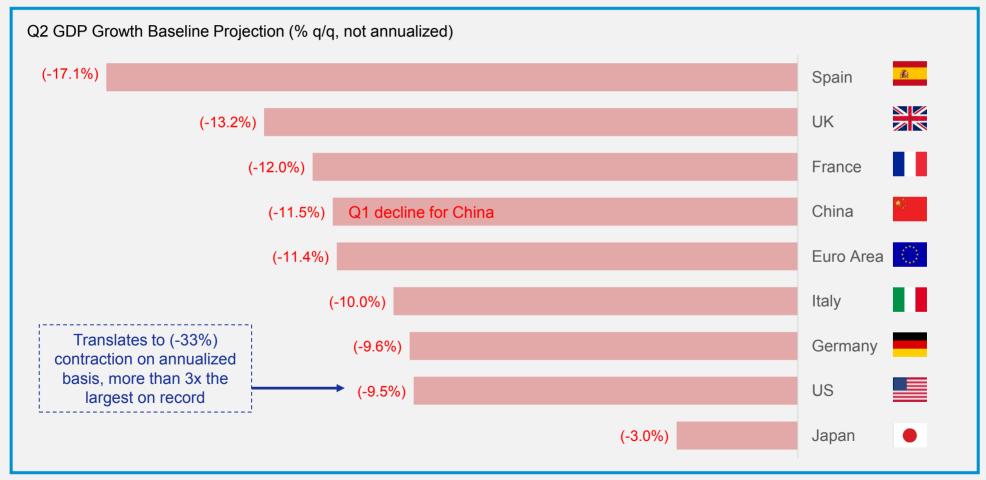


Source: (1-2) DB Global Markets Research (Slok). Bloomberg. Data as of March 30, 2020.

Largest Quarterly Contraction on Record



The largest US GDP quarterly decline, on an annualized basis, was (-10%) in 1958, followed by (-8.4%) in Q4 2008. By comparison, DB's Economic Research team is forecasting a Q2 contraction q/q of (-9.5%), which translates to approximately (-33%) on an annualized basis, or more than 3x the largest quarterly decline in the modern era. The depth of expected contraction is substantively higher in large economies across Europe.

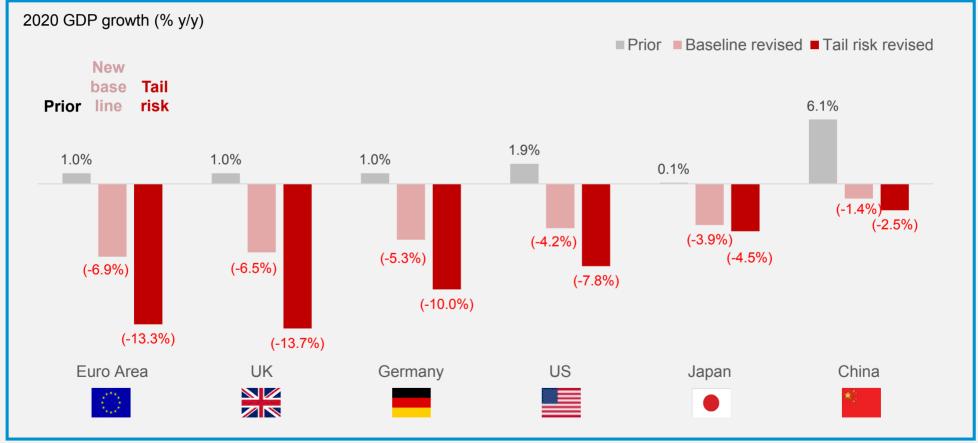


Source: (1) DB Global Markets Research "Impact of Covid-19 on the global economy: Beyond the abyss" (David Folkerts-Landau). "US outlook update: Quantifying the known unknowns" (Luzzetti, Ryan, Weidner). China GDP decline is Q1, all other countries is Q2.

DB Forecasting Severe Global Recession



DB's Global Economics Research team, led by David Folkerts-Landau, has revised full year 2020 GDP y/y forecasts sharply lower for numerous major economies. With a high percentage of US and European citizens living under some form of social containment (i.e., nearly 75% of the US), DB expects the largest decline in consumer and business spending since the Great Depression, and GDP contraction more than double that during the extended recession of the global financial crisis. Protracted tail risk scenarios of longer virus transmission and lockdown entail larger non-linear consequences for growth.

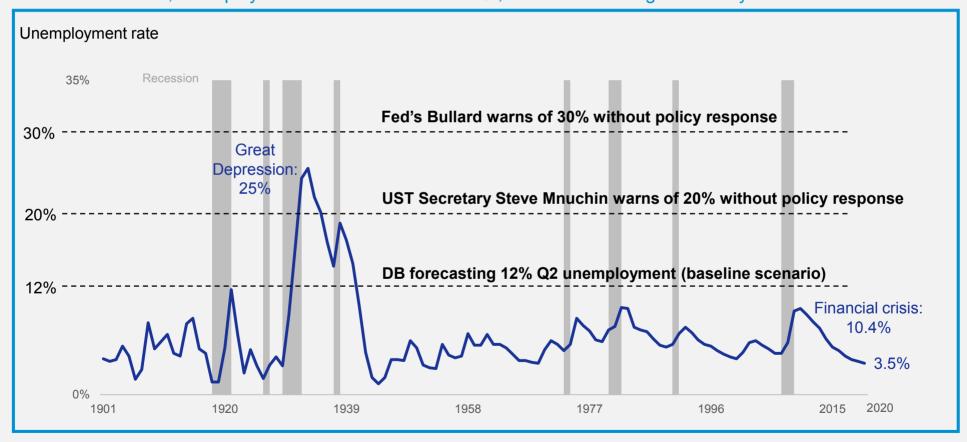


Source: (1) DB Global Markets Research "Impact of Covid-19 on the global economy: Beyond the abyss" (David Folkerts-Landau). "US outlook update: Quantifying the known unknowns" (Luzzetti, Ryan, Weidner).

Unemployment Could Rise to Historic Levels



While US unemployment rose to 25% during the Great Depression in 1929, it has never risen above 11% in the post WW2 period (since 1948). At peak impact, DB's Economics team is forecasting 15 million unemployed in the US, or 12%, in the baseline scenario, a new post WWII high. Given persistent disruption in numerous industries and small businesses, unemployment will improve but remain elevated into late 2021. In the protracted virus transmission and lockdown scenario, unemployment could rise to 14% in Q2, and remain as high as 9% by end of 2021.



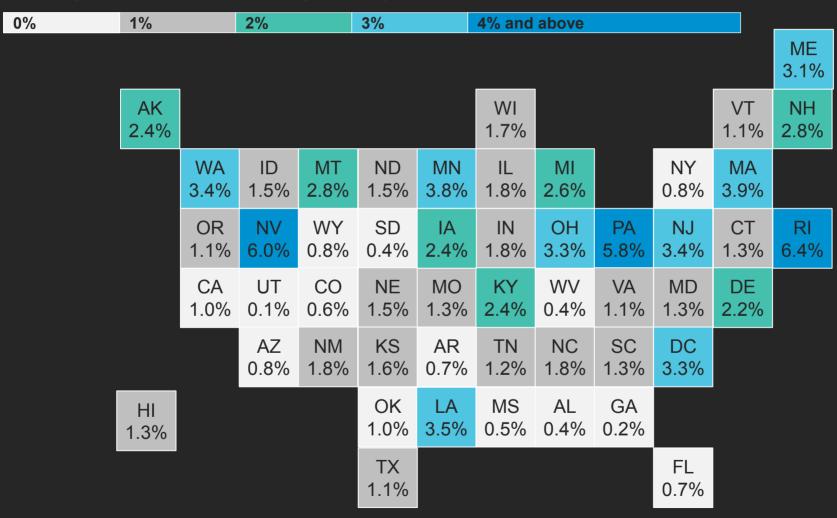
Source: (1) DB Global Markets Research (Ryan, Slok). BLS. Census.

Record US Job Losses



3.3 million people filed for unemployment insurance in the week of March 21. In some states, more than 5 percent of the labor force submitted claims.

Percentage of the labor force submitting unemployment insurance claims



Source: U.S. Department of Labor. Not seasonally adjusted. Ohio and Pennsylvania are state estimates. Other states are based on preliminary reporting from the U.S. Department of Labor.



\$2.8 Trillion US Stimulus



At \$2.8 trillion (13% of GDP), the US Government has responded to COVID-19 with the largest fiscal stimulus in history. Remarkably, it may not be enough, and a sizable additional fiscal stimulus (4.0) is expected sometime after Easter. The US will also benefit from an unprecedented coordination in fiscal and monetary tools, with the Fed leveraging hundreds of billions of Government capital injections into trillions of dollars of support for business, states and municipalities.

USD Bn		Fiscal stabilizers	Tax deferments	Direct spending	Loans	Total
1	Fiscal Stimulus 1.0 Deferred 2019 Tax Payments		\$300.0			\$300
2	Fiscal Stimulus 2.0 Families First Act Tax Credit	\$104.8				\$104.8
3	Fiscal Stimulus 3.0 CARES Act	\$733.1	\$351.8	\$480.0	\$849.0	\$2,413.9
Total		\$837.9	\$651.8	\$480.0	\$849.0	\$2,818.7

Source: (1) DB Global Markets Research "What's in the \$2 trillion stimulus package?" (Ryan).

\$46 Bn for Airlines & National Security



Airlines & Natio	nal Security - \$46 bn
Funds	 \$25 bn for passenger air carriers; \$4 bn for cargo air carriers \$17 bn for businesses critical to national security
Eligible Businesses	 US companies with significant operations and a majority of employees in the US Companies where the President, Vice President, head of an Executive Department, Member of Congress or their family member has a "controlling interest" are not eligible for economic stabilization funds Company must demonstrate the credit is otherwise not "reasonably available" at the time of the transaction
Terms	 Guarantee must be "sufficiently secured" and at rate not lower than what a comparable rate would have been before the crisis Duration is to be "as short as practicable" and no longer than 5 years
Structure	 Treasury has 10 days to publish application procedures & minimum requirements Treasury must receive warrants or equity from publicly traded companies or senior debt from non publicly traded companies – issuance of warrants, stock options etc. will not result in an ownership change Taxpayers must reasonably participate in equity appreciation, or receive interest for debt Treasury shall not exercise voting power on any shares acquired and may sell, exercise or surrender warrants at its discretion
Conditions	 For air carriers, Treasury must coordinate with the Department of Transportation and can require continued service of existing routes Additional conditions applicable while loan / guarantee remains outstanding + additional 12 months No stock buybacks (except those required by pre-existing contractual obligation), dividends or other common stock distributions Must maintain employment levels as of March 24, 2020 "to the extent practicable", and in any case must not reduce its employment levels by more than 10% until September 30, 2020 Restrictions on employee compensation:
Tax Holiday	 Holiday until January 1, 2021 on: 7.5% aviation excise tax for transportation of passengers; 6.25% excise tax for cargo transportation Taxes on certain uses and transportation of kerosene as aviation fuel
Reporting Requirements	 Public disclosure must be made within 72 hours of transaction with detailed reports to Congress within 7 days and further public reports every 30 days

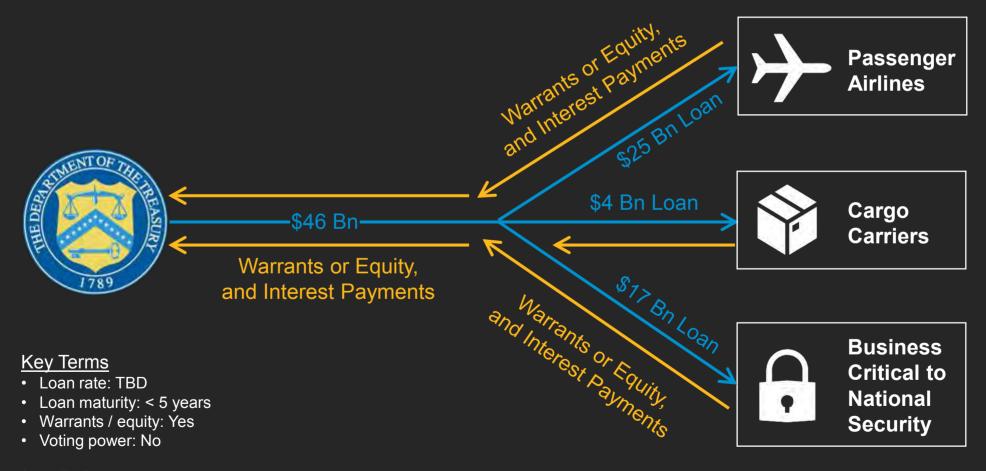
Source: DB Global Markets Research (Ryan, Luzzetti, Weidner. "What's in the \$2 trillion stimulus package". March 27, 2020). DavisPolk "Senate Passes the CARES Act Fiscal Stimulus Package to Combat the Coronavirus Pandemic's Economic Impact". March 26, 2020.

\$46 Bn for Airlines & National Security



Illustrative Review of Expected Structure (many terms TBD)

For airlines and businesses critical to national security, the US Treasury Department is offering \$46 bn of loans or guarantees in exchange for interest payments and non-voting equity or warrants. The US Treasury is required to provide more specific guidance on detailed terms within 10 days of the Cares Act passage into law.



Source: The Cares Act.

\$454 Bn for Businesses, States & Municipalities



Businesses, State	es & Municipalities - \$454 Bn
Funds	 \$454 bn + any amount left over from the \$46 bn allotted to Airlines & National Security companies Fed to use SPV and leverage funds 10x, creating \$4-5 trn of lending capacity for businesses, states and municipalities Funds are in addition to \$50 bn (\$10 bn each) already pledged to CPFF, MMLF, TALF, PMCCF and SMCCF
Eligible Businesses	 US companies with significant operations and a majority of employees in the US Companies where the President, Vice President, head of an Executive Department, Member of Congress or their family member has a "controlling interest" are <u>not</u> eligible for economic stabilization funds
13(3) Requirements	 Requirements of Section 13(3) of the Federal Reserve act do apply Loans can not be made to an insolvent entity (or one borrowing for the purpose of lending to an insolvent entity) Facilities must have broad-based eligibility (provide liquidity to a market or sector not to a specific company to avoid bankruptcy) Loans must be fully secure and at rates above what market rates would be in normal circumstances
Structure	 Fed programs may purchase "obligations or other interests" either directly from the issuer or on secondary markets or may make loans directly to an entity Fed SPV expected to loan to banks which, in turn, lend to businesses, states and municipalities US Treasury guarantee expected for banks, details and guidance from Treasury to come (unclear if 100%, or if partial first loss) Treasury shall not exercise voting power to any shares acquired and may sell, exercise or surrender warrants at its discretion Any issuance of warrants, stock options etc. will not result in an ownership change
Conditions for Direct Loans	 Conditions apply for the duration of the loan + additional 12 months No stock buybacks (except those required by pre-existing contractual obligation), dividends or other common stock distributions Restrictions on employee compensation:
Reporting Requirements	 Reports to Congress required within 7 days of transaction, publication of those reports within the next 7 days and further public reports every 30 days
Examples of Fed Programs	 Fed endeavor to implement program to finance lenders that make direct loans to businesses with 500-10,000 employees ("Financial Assistance for Mid-Sized Businesses") Interest rate on these loans would be capped at 2%, with no payments due for the first 6 months Borrowers would agree to several provisions including: retaining employment levels, not outsourcing or offshoring, no stock buybacks or dividends, remain neutral in union organizing efforts, etc. Fed endeavor to implement program supporting lending to States and municipalities ("Financial Assistance for States and Municipalities") Programs established under the CARES act are separate from the "Fed Main Street Business Lending" program

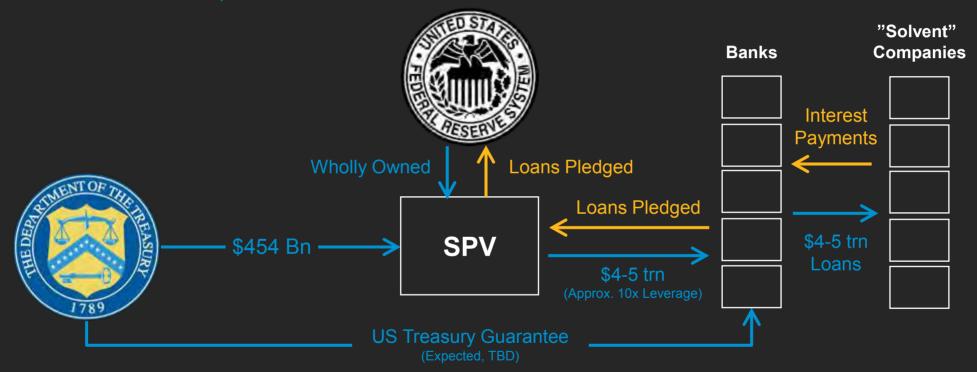
Source: DB Global Markets Research (Ryan, Luzzetti, Weidner. "What's in the \$2 trillion stimulus package". March 27, 2020). DavisPolk "Senate Passes the CARES Act Fiscal Stimulus Package to Combat the Coronavirus Pandemic's Economic Impact". March 26, 2020. Sidley "Senate Passes Economic Stimulus Package in Response to COVID-19".

\$454 Bn for Businesses, States & Municipalities



Illustrative Review of Expected Structure (many terms TBD)

Over the next 10 days, the US Treasury is also expected to release guidance for a \$454 bn program that could fund as much as \$4-5 trillion in lending, via the Fed and banking system, to mid-sized and larger companies, as well as states and municipalities.



Key Terms

- Loan rate: 2% cap for mid-sized business, TBD for larger business
- · Loan maturity: TBD
- Warrants / equity: No

Source: The Cares Act.

Key Unknowns

- · Key terms of loans
- Form of US Treasury guarantee (100% or first loss)
- Credit risk for banks, if any

\$349 Bn for Small Business Loans



Paycheck Prot	ection Program (PPP) - \$349 Bn
Funds	 \$349 bn appropriated to the Small Business Administration (SBA) through the Paycheck Protection Program PPP significantly expands the existing guaranteed lending offered through Section 7(a) of the Small Business Act
Eligibility	 PPP covers eligible small businesses, nonprofit organizations, veterans organizations, individuals operating as sole proprietors or independent contractors, self-employed individuals and Tribal businesses Eligible recipients are businesses up to the greater of 500 employees or the existing SBA size standard for employees for the industry in which the borrower operates Typical 7(a) affiliation rules do apply but with certain exceptions (see affiliation rules & exceptions on next page) SBA encouraged to issue guidance urging lenders to focus on lending to businesses in underserved or rural markets, business in operation for less than two years and businesses owned by members of the military community, socially and economically disadvantaged individuals and women
Acceptable Uses of Proceeds	 Payroll support and employee salaries Including group health costs and insurance premiums Excluding prorated portion of any compensation above \$100,000 per year for any person Mortgage interest (but not prepayments or principal payments) and rent payments Utility payments Interest on debt that existed as of February 15, 2020 Overhead costs
Loan Terms	 Loan are available to eligible recipients through June 30, 2020 Maximum interest rate of 4% with all loan fees, collateral / personal guarantee requirements, recoupment fees waived Maximum maturity of 10 years after determination of amount to be forgiven Mandatory payment deferral for 6-12 months (SBA to issue deferment guidance to lenders) Restrictions on stock buybacks & dividends to not apply Lending is on a nonrecourse basis, unless the loan proceeds are misused Loans are 100% guaranteed by the federal government
Loan Size	 Maximum loan size is the lesser of \$10 million or 2.5x average monthly payroll costs over the prior year, plus the value of any existing EIDL loan received after January 31, 2020 2.5x payroll limit excludes prorated portion of any annual compensation above \$100k for any person Compensation to employees residing outside the United States is excluded

Source: DB Global Markets Research (Ryan, Luzzetti, Weidner. "What's in the \$2 trillion stimulus package". March 27, 2020). DavisPolk "Senate Passes the CARES Act Fiscal Stimulus Package to Combat the Coronavirus Pandemic's Economic Impact". March 26, 2020. Sidley "Senate Passes Economic Stimulus Package in Response to COVID-19". Winston & Strawn "Senate Passes SBA Paycheck Protection Loan Program" March 26, 2020.

\$349 Bn for Small Business Loans (Cont'd)



Structure

- Current 7(a) lenders may be approved by the SBA and Treasury to become a PPP lender
- PPP lenders have the authority to make loans to eligible businesses that were:
 - o In operation on February 15, 2020, and
 - o Had employees which they paid salaries & they paid payroll taxes, or had paid independent contractors
- Borrowers need to make good faith certifications that current economic uncertainty makes the loan necessary and that proceeds will be used for retaining workers, maintaining payrolls or covering existing overhead costs
- Borrowers are <u>not</u> required to show credit is unavailable elsewhere or demonstrate repayment ability
- PPP loans backed by a 100% guarantee from SBA

Loan Forgiveness & Lender Protections

- The portion of the loan used to cover payroll, mortgage interest, rent or utility costs from February 15 to June 30, 2020 are eligible for forgiveness
- The forgiven amount is nontaxable
- Amount eligible for forgiveness is reduced by:
 - o Reduction in the average number of employees during the 8-weeks following loan disbursement
 - o The amount of any reduction in total salary or wages of any employee during the covered period, in excess of 25%
- Detailed application and documentation required for borrowers seeking forgiveness
 - o Lenders required to decide on any application within 60 days
- SBA is required to remit forgiven amounts to lenders within 90 days of lender determining forgiveness amount
- Reimbursement by the SBA for processing at a rate of 1% to 5% of the financing amount outstanding at the time of loan disbursement (depending on loan size)
- Risk weighting of 0% for PPP loans in connection with the calculation of risk-based capital requirements for lenders

Affiliation Rule & Exceptions

- Affiliation Rule Typical affiliation rules require a business to aggregate the employees of companies that are under common control
 - Portfolio companies controlled by private equity sponsors and other investment firms typically may not be eligible for participation in 7(a) lending – PPP allows for waiver of this rule in certain circumstances
 - The CARES Act waives affiliation requirements for three circumstances:
 - Businesses within NAICS Code 72 (accommodation & food services companies) with no more than 500 employees per physical location
 - o Franchises with codes assigned by the SBA as reflected on the SBA franchise registry
 - o Businesses that receive financial assistance from one or more small business investment company
 - The CARES act also rescinds the interim final affiliation rules, which the SBA published on February 10, 2020

Exclusion

Using a Economic Injury Disaster loan does not preclude a business from seeking a PPP loan

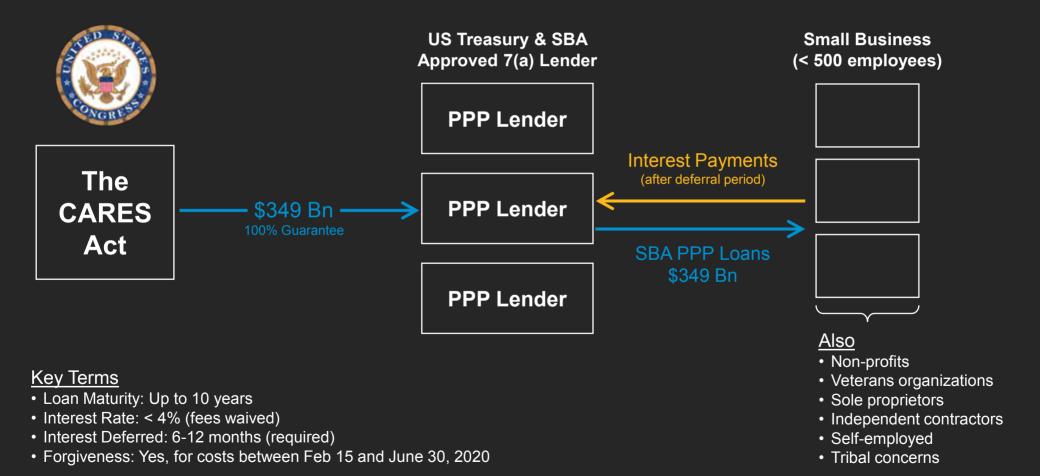
Source: DB Global Markets Research (Ryan, Luzzetti, Weidner. "What's in the \$2 trillion stimulus package". March 27, 2020). DavisPolk "Senate Passes the CARES Act Fiscal Stimulus Package to Combat the Coronavirus Pandemic's Economic Impact". March 26, 2020. Sidley "Senate Passes Economic Stimulus Package in Response to COVID-19". Winston & Strawn "Senate Passes SBA Paycheck Protection Loan Program" March 26, 2020.

\$349 Bn for Small Business Loans



Illustrative Review of Expected Structure (many terms TBD)

The CARES Act includes \$349 bn for a significant expansion of SBA 7(a) lending through a new "Paycheck Protection Program", which provides low cost funding for a large range of proceeds for eligible borrowers with less than 500 employees. A portion of borrowed funds are also "forgivable" over the Feb 15 - June 30, 2020 period.



Source: The Cares Act.

Key Provisions for Individuals



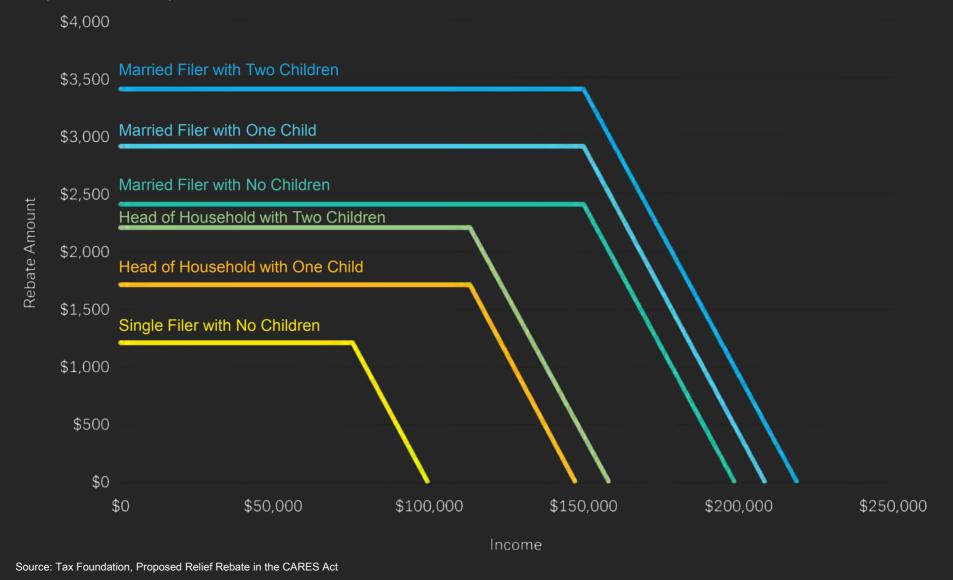
Key provisions for indivi	Key provisions for individuals under the CARES Act		
Unemployment	 Additional \$600 per week for unemployment insurance for up to 16 weeks 		
Direct Tax Rebates	 Immediately refundable credit of \$1,200 (\$2,400 for married couples filing jointly) plus \$500 per child subject to income limitations 		
Student Loans	 Payments on federal student loans suspended through September 30, 2020 with no interest accruing during this period Payment suspension does not impact borrower's ability to qualify for student loan forgiveness Involuntary collection suspended 		
Consumer Credit	 Temporary amendment to the Fair Credit Reporting Act Covers period from Jan 31, 2020 to the later of 120 days after enactment or 120 days after the national emergency ends Accommodations made by creditors will not impact reporting on that consume account Accounts that are current remain current during the relief period irrespective of accommodations 		
Foreclosure, Mortgage & Eviction Protections	 Borrowers have right to request 360 days forbearance on federally backed mortgage loans (180 days plus one 180-day renewal) During forbearance period, no interest, fees or penalties will accrue Servicers must grant forbearance even if borrow is already delinquent, with no documentation required other than a borrower attestation of financial hardship 60 day moratorium on foreclosure actions taking effect March 18, 2020 Borrowers on federally backed multifamily mortgage loans have similar right of forbearance up to 90 days (initial 30 day period plus two 30-day renewals) Multifamily borrowers must be current as of Feb 1, 2020 to qualify Renters receive protection during the forbearance period 120 day moratorium on all eviction actions 		

Source: DB Global Markets Research (Ryan, Luzzetti, Weidner. "What's in the \$2 trillion stimulus package". March 27, 2020). DavisPolk "Senate Passes the CARES Act Fiscal Stimulus Package to Combat the Coronavirus Pandemic's Economic Impact". March 26, 2020. Sidley "Senate Passes Economic Stimulus Package in Response to COVID-19". Winston & Strawn "Senate Passes SBA Paycheck Protection Loan Program" March 26, 2020.

Cash Payments for US Individuals



The CARES Act provides a one time refundable credit of \$1,200 for individuals, \$2,400 for married couples and \$500 per child below certain income thresholds



Additional Key Provisions of the CARES Act



Additional Key Time 2020, whichever is e	Limited Measures in the CARES Act – will remain in place until the end of the national emergency or Dec 31, arlier
Money Market Mutual Funds	 The CARES Act temporarily allows the Exchange Stabilization Fund to be used to guarantee MMMFs through Dec 31, 2020 Temporary reversal of statute put in place during the Financial Crisis
FDIC & NCUA Temporary Liquidity Guarantee Authority	 2008-9 crisis era tool FDIC authorized to establish a guarantee program for debt obligations of solvent insured depository institutions
Depository Insurance	 FDIC given the power to guarantee deposits of solvent insured depository institutions held in noninterest-bearing business transaction accounts NCUA Board authorized to provide unlimited share insurance coverage to any federally insured credit union with respect to noninterest-bearing transaction accounts
National Banks' Lending Limits	 Exemptions from lending limits expanded to include loans or extensions of credit to nonbank financial companies approved by the OCC OCC has authority to exempt any transactions from lending limits if it determines they are in the public interest
Reduced Community Bank Leverage Ratio	 Federal banking agency instructed to relax certain requirements applicable to a "qualifying community bank" Lower Community Bank Leverage Ratio to 8% Establish reasonably grace period for community banks that fall below 8% threshold
NCUA Central Liquidity Facility	Breadth of facility expanded to permit corporate credit unions to apply for funds
Fed Meetings	Relaxed public disclosure requirements put in place under the Government in the Sunshine Act
Financial Agents of the United States	 Treasury is authorized to designate financial institutions as "financial agents of the United States" to perform "all reasonable duties the Secretary determines necessary to respond to the coronavirus"
Troubled Debt Restructuring Relief	■ Financial institutions can suspend GAAP requirements for COVID-19 related loan modifications
Current Expected Credit Losses Standards Relief	Temporary relief from CECL methodology

Source: DB Global Markets Research (Ryan, Luzzetti, Weidner. "What's in the \$2 trillion stimulus package". March 27, 2020). DavisPolk "Senate Passes the CARES Act Fiscal Stimulus Package to Combat the Coronavirus Pandemic's Economic Impact". March 26, 2020. Sidley "Senate Passes Economic Stimulus Package in Response to COVID-19".

Notable Business Tax Provisions in the CARES Act



The comprehensive CARES act has a number of temporary and permanent tax changes, including several "fixes" from 2017 tax reform

- Employee retention credit to incentivize maintaining pre-crisis employment levels
- Debt interest deduction limits increased from 30% to 50% of EBITDA
- NOL carrybacks for 2018-20 extended back 5 years (on 100% of taxable income, up from 80%)
- Immediate deductions for qualified property improvement (retroactively to 2017)
- Deferral of 2020 share of employer payroll taxes to 2021-22
- Acceleration of recovery of AMT tax credits from 2017 tax bill
- Suspended \$250k cap on excess business losses implemented in 2017 tax reform
- Excise tax exemptions for certain industries and products

Source: Deutsche Bank M&A (Jeffrey Mensch). Davis Polk "Senate Passes the CARES Act Fiscal Stimulus Package to Combat the Coronavirus Pandemic's Economic Impact".

Notable Individual Tax Provisions in the CARES Act



- 2020 tax filing deadline pushed back from April 15 to July 15
- Immediately refundable tax credits for Individuals/Couples/Children (\$1,200/\$2,400/\$500) – subject to income limitations
- Waiver of 10% early withdrawal penalty on retirement funds
- Temporary waiver of minimum distribution requirements on retirement funds
- Modification of itemized charitable deduction limitations
- Deferred rules limiting NOL use for non-corporate taxpayers to 2021

Source: Deutsche Bank M&A (Jeffrey Mensch). Davis Polk "Senate Passes the CARES Act Fiscal Stimulus Package to Combat the Coronavirus Pandemic's Economic Impact".

Oversight in the CARES Act



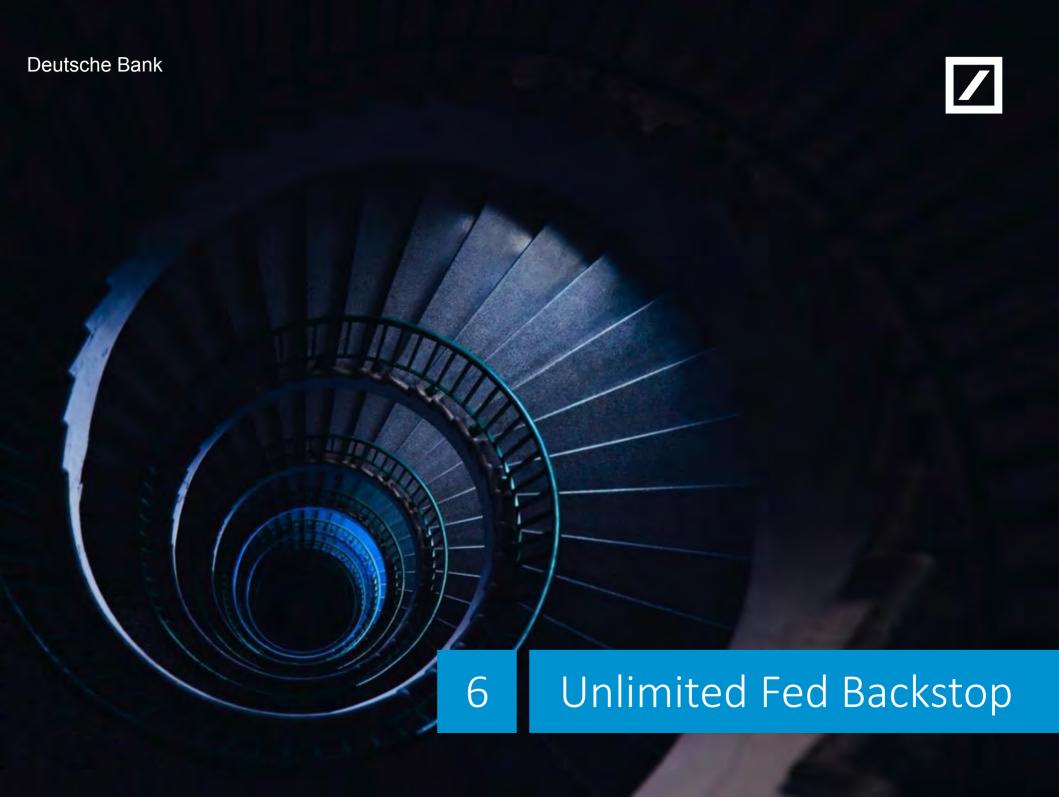
Special Inspector General for Pandemic Recovery (SIGPR)

- Office of the Special Inspector General for Pandemic Recovery established within Treasury
- Head is nominated by the President & subject to Senate confirmation, removable without cause by the President (reasoning must be sent in writing to House & Senate within 30 days)
- SIGPR's duty to supervise, conduct and coordinate audits and investigations of the making, purchase management and sales of loans and guarantees by Treasury
- SIGPR must submit reports to Congress within 60 days of confirmation and quarterly thereafter
- SIGPR granted \$25 mn for personnel, facilities and other resources

Congressional Oversight

- Congressional Oversight Commission established to conduct oversight of implementation
- 5 members: Chairperson jointly appointed by Speaker of the House and Senate Majority Leader, 4 remaining members appointed by majority and minority of each chamber, respectively
- Oversight Commission required to report to Congress every 30 days
 - Use by the Treasury and Fed of their authorities
 - Impact of loans, guarantees and investments on the financial well being of the US people, economy, financial markets and financial institutions
 - Extent to which information made available ton transactions has contributed to market transparency
 - Effectiveness of economic stabilization funds in minimizing long-term costs and maximizing benefits for taxpayers
- Authority to hold hearings and receive evidence
- SBA must report to Congress within 6 months with a detailed expenditure plan for using the amounts under the PPP

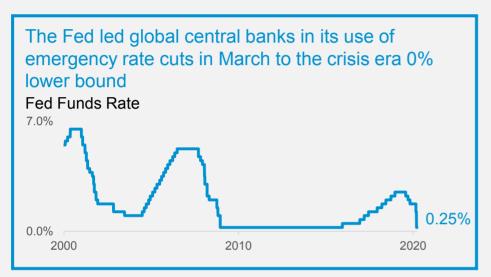
Source: DB Global Markets Research (Ryan, Luzzetti, Weidner. "What's in the \$2 trillion stimulus package". March 27, 2020). DavisPolk "Senate Passes the CARES Act Fiscal Stimulus Package to Combat the Coronavirus Pandemic's Economic Impact". March 26, 2020. Sidley "Senate Passes Economic Stimulus Package in Response to COVID-19".

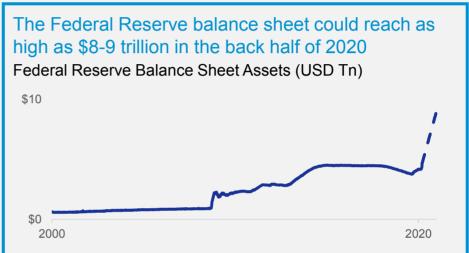


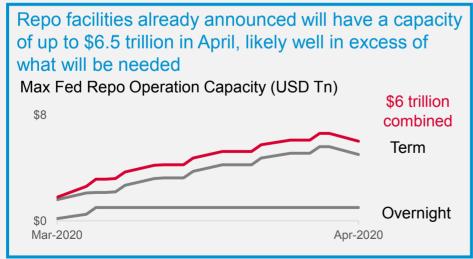
Fed Re-Opens Crisis Era Playbook

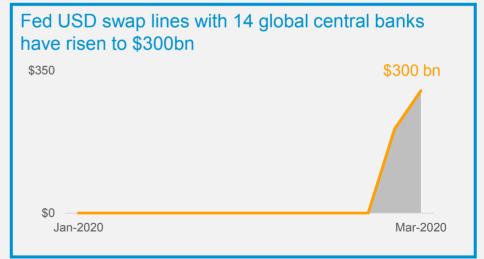


As the Fed has become a primary conduit of the US Government response, its balance sheet has already increased by \$1 trillion in late March, and is expected to grow by a total of \$4-5 trillion in the months ahead.









Source: (1-2) Bloomberg. Data as of March 19, 2020. (3) DB Global Markets Research (Zeng). Data as of March 30, 2020. (4) Federal Reserve. 0.25% is upper bound of Fed funds rate.

Summary of Fed 2020 Crisis Playbook

/

The Federal Reserve announced it would use its "full range of tools" to provide essentially unlimited support for the US economy. In addition to unlimited size for traditional QE, the Fed will now purchase corporate bonds for the first time in its history.

	Fed Program	Market / Issue Addressed	Action / Size
1	Fed Rate Cut	 Ease financial conditions 	 150 bps cut to zero lower bound
2	Discount Window	 Encourage discount window borrowing 	 Primary credit rate reduced to 25 bps Terms extended up to 90 days
3	Bank Reserve Requirements	 Encourage bank lending by freeing additional funds 	■ Cut to 0
4	Buffers Released	 Encourage use of buffers for increased bank lending 	 Fed, FDIC, OCC issued statements to encourage use of buffers Technical changes to "eligible retained income" to push TLAC buffers
5	Repo Operations	■ Ease liquidity in short term funding markets	 Boosted volume of 3-month and 1-month repo operations Each with separate cap of \$500 bn \$6.5 trillion max Repo facility capacity

Source: (1) Federal Reserve. DB Global Markets Research (Luzzetti, Ryan, Weidner. "Fed Notes – Kitchen Sink:. March 23, 2020) (Nicol. "A Step in the Right Direction". March 23, 2020). DavisPolk ("The Federal Reserve's Actions to Address the Coronavirus Crisis". March 23, 2020).

Summary of Fed 2020 Crisis Playbook (Cont'd)



	Fed Program	Market / Issue Addressed	Size / Backing
6	Swap Lines	 Ease liquidity in US Dollar funding markets 	 Increased swap lines with 14 non-US central banks Rated reduced to OIS + 25 bps Term extended to 84 days
7	Temporary Foreign and International Monetary Authority (FIMA) Repo Facility	Stabilize UST marketEase USD funding strains	 Temporary repo facility for foreign central banks to exchange USTs for US Dollars Overnight repo facility that can be rolled over IOER + 25 bps
8	Asset Purchases	 USTs Agency MBS (including agency CMBS) 	 Unlimited QE (upsized from previously announced \$700 bn)
9	Commercial Paper Funding Facility (CPFF)	 Ease short term liquidity and funding constraints in CP market 	 \$10 bn equity backing from Treasury Exchange Stabilization Fund (ESF)
10	Primary Dealer Credit Facility (PDCF)	Overnight liquidity for primary dealers	 2008 facility peak usage: \$150 bn / day

Source: (1) Federal Reserve. DB Global Markets Research (Luzzetti, Ryan, Weidner. "Fed Notes – Kitchen Sink:. March 23, 2020) (Nicol. "A Step in the Right Direction". March 23, 2020). DavisPolk ("The Federal Reserve's Actions to Address the Coronavirus Crisis". March 23, 2020).

Summary of Fed 2020 Crisis Playbook (Cont'd)



	Fed Program	Market / Issue Addressed	Size / Backing
11	Money Market Mutual Fund Liquidity Facility (MMLF)	 Backstopping against redemptions for money markets 	\$10 bn equity backing from ESF
12	Term Asset-Backed Securities Loan Facility (TALF)	 ABS market Credit for consumers and businesses with ABS backed by student loans, auto loans, credit card loans, loans guaranteed by the SBA, etc. 	 \$10 bn equity backing from ESF \$100 bn new financings
13	Primary Market Corporate Credit Facility (PMCCF)	 Corp bond new issuance Maturities < 4 yrs, steepens curve 	\$10 bn equity backing from ESF\$100 bn new financings
14	Secondary Market Corporate Credit Facility (SMCCF)	 IG Corp bond secondary market Maturities < 5 yrs, steepens curve 	\$10 bn equity backing from ESF\$100 bn new financings
15	Main Street Business Lending Program	 Lending to eligible SMEs 	Program pre-announced by Fed

Source: (1) Federal Reserve. DB Global Markets Research (Luzzetti, Ryan, Weidner. "Fed Notes – Kitchen Sink:. March 23, 2020) (Nicol. "A Step in the Right Direction". March 23, 2020). DavisPolk ("The Federal Reserve's Actions to Address the Coronavirus Crisis". March 23, 2020).



The Commercial Paper Market



In an effort to ease liquidity strains in the US financial markets, the Fed used its "unusual and exigent circumstances" powers to re-launch programs from the 2008 crisis era policy toolkit

Commercial Paper Financing Facility		
Announcement Date	 March 17, 2020 (previously utilized in 2008-9 crisis) 	
Purpose	Alleviate liquidity pressure in CP market	
Mechanism	Federal Reserve establishes Special Purpose Vehicle (SPV) → SPV purchases CP directly from US issuers (financial companies, commercial companies and munis) → Fed lends to SPV matching terms of the CP acquired and taking CP as collateral	
Eligible Users	Active US CP issuers (including US issuers with foreign parent)	
Eligible Collateral	 3-month CP rated at least A-1/P-1/F-1 One time sale of A-2/P-2/F-2 rated collateral permitted in the event of a ratings downgrade 	
Rate	 For CP rated A-1/P-1/F-1: 3-month OIS + 110 bps For CP rated A-2/P-2/F-2: 3-month OIS + 200 bps Fee at registration of 10 bps of max amount of CP the SPV may own 	
Purchase Limit	 Max amount of issuer's outstanding USD-denominated CP between March 16, 2019 and March 16, 2020 	
Additional Key Terms	 Treasury to provide Fed with \$10 bn of credit protection via the ESF Structure and eligible issuers mimics 2008 facility Up to 90 day term 	
Peak 2008 Usage	■ \$350 bn	
Announced End Date	 March 17, 2021 (unless extended) 	

Source: Davis Polk. "Republication: 2009 Financial Crisis Manual: A Guide to the Laws, Regulations and Contracts of the Financial Crisis, with Updated 2020 Introduction" March 16, 2020. "Fed Moves to Shore Up Commercial Paper Markets" March 17, 2020. "The Federal Reserve's Actions to Address the Coronavirus Crisis" March 23, 2020



Primary Dealer Credit Facility (PDCF)

Announcement Date	March 17, 2020 (previously used in 2008-9 crisis)	
Purpose	 Provide temporary overnight liquidity via secured loans to primary dealers Ease the severe strains in the triparty repo market and subsequent liquidity pressures for primary dealers 	
Mechanism	Loans to primary dealers, secured by broad range of eligible collateral	
Eligible Users	Primary dealers, including large investment banks	
Eligible Collateral	 Investment-grade corporate debt, Commercial Paper, Munis, MBS, ABS and equities 	
Rate	■ Applicable rate for discount window (0.25%)	
Term	Overnight up to 90-day term funding	
Peak 2008 Usage	■ \$150 bn / day	
Announced End Date	■ "At least six months", starting from March 20, 2020	

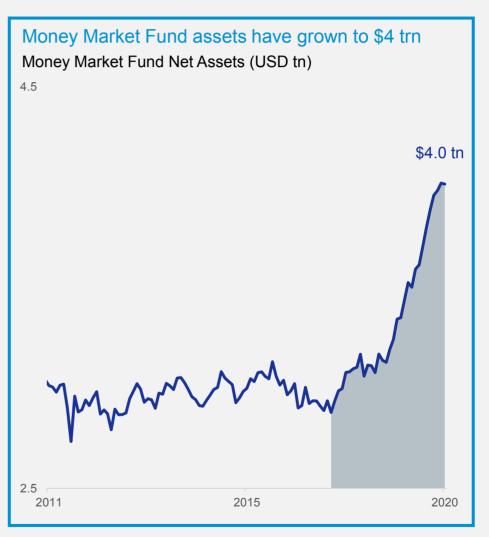
Source: Davis Polk. "Republication: 2009 Financial Crisis Manual: A Guide to the Laws, Regulations and Contracts of the Financial Crisis, with Updated 2020 Introduction" March 16, 2020.





The Fed announced a new Money Market Mutual Fund Liquidity Facility (MMLF) in order to help funds meet redemption demands

Fed's MMLF Program		
Mechanism	 Banks and primary dealers can buy CP from money market funds and take out a loan at the Fed for the equal term of the CP 	
Rate	 Primary credit rate + 25 bps for munis Primary credit rate + 100 bps for other collateral 	
Eligible Collateral	 US treasuries, agency securities, CP Program expanded to include municipal variable rate demand notes (VRDNs) and bank CDs 	
Credit Protection	 Treasury provides \$10 billion in credit protection 	
Scheduled End Date	■ September 30, 2020	



Source: DB Global Markets Research (Zeng). Federal

Asset Backed Securities



The Fed is re-launching a program used in the 2008 crisis to create approximately \$100 bn of new financing

Term Asset-Backed Securities Loan Facility (TALF)		
Facility Details	SPV will initially make up to \$100 bn of loans available 3 year terms on loans Nonrecourse to the borrower and fully secured by eligible ABS	
Eligible Borrowers	 All US corps that own eligible collateral & maintain an account relationship with a primary dealer Includes companies with non-US parent company or US branch of a foreign bank 	
Eligible Collateral & Valuation	 USD denominated cash ABS with credit rating in the highest category (long term or short term) All or substantially all credit exposures underlying eligible ABS must be originated by a US company Issued on or after March 23, 2020 Haircut assigned based on sector, weighted avg life and historical vol of the ABS. Detailed terms and schedule to be announced but roughly in-line with 2008 TALF 	
Collateral ABS Credit Exposure	 Auto loans & leases Student Loans Credit card receivables Equipment loans Floorplan loans Insurance premium finance loans Certain small business loans (guaranteed by SBA) Eligible servicing advance receivables 	
Pricing	Eligible ABS with underlying credit exposures that do not have a gov't guarantee: 2yr LIBOR swap rate + 100bps (for securities with a weighted avg life less than 2 yrs) OR 3yr LIBOR swap rate + 100 bps (for securities with weighted avg life over 2 yrs) Pricing on other eligible ABS to be announced	
Additional Terms	 Fees: 10 bps of the loan amount on the settlement date for collateral Maturity: 3 years Prepayment: Allowable in whole or in part, but collateral substitution generally not allowed Additional terms to be announced and based primarily after 2008 TALF program 	
Scheduled End Date	September 30, 2020 (unless extended)	

Source: Federal Reserve Board.

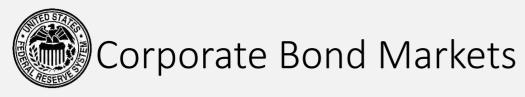




For the first time in it's history, the Federal Reserve announced that it will purchase corporate bonds through two separate programs targeting both primary and secondary markets. Together these programs will provide approximately \$200 bn of new financing.

Facility Details	 SPV will purchase qualifying bonds directly from eligible issuers SPV will provide loans to eligible issuers
Eligible Assets	 Each of the following must be met at the time of purchase by the Facility Issued by an eligible issuer (US companies headquartered in the US and with material operations in the US. Excludes companies expected to receive direct financial assistance under pending legislation.) Issuer rated at least BBB-/Baa3 Maturity of 4 years or less
Issuer Limits	 May not exceed the applicable percentage of the issuer's maximum outstanding bonds and loans on any day between March 22, 2019 and March 22, 2020 Based on credit rating, starting at 140% for AAA/Aaa rating with step-down in increments of 10% to 110% for BBB/Baa rating
Commitment Fee	■ 100 bps
Additional Features	 Issuer may make payments in kind for up to six months but must not pay dividends or buy back stock in that time Bonds are callable at any time at par
Scheduled End Date	September 30, 2020 (unless extended)
Authorization	 Through SPV under Section 13(3) of Federal Reserve Act (Congressional authorization not required)

Source: Federal Reserve Board.





DB's Credit Strategist Craig Nicol estimates as much as \$2 trn of bonds across 600 issuers could be eligible for the SMCCF

Facility Details	 SPV will purchase corporate debt by eligible issuers in the secondary market Individual corporate bond and corporate bond portfolios in ETFs are both eligible
Eligible Assets	 Individual Corporate Bonds must meet each of the following criteria at the time of purchase: Issued by an eligible issuer (US companies with material operations in the US. Excludes companies expected to receive direct financial assistance under pending legislation.) Rated at least BBB-/Baa3 Remaining maturity of 5 years or less ETFs must be US-listed with objective to provide broad exposure to the US IG corp market
ssuer Limits	 Capped at 10% of the issuer's maximum bonds outstanding on any day between March 22, 2019 and March 22, 2020 Capped at 20% of assets of any particular ETF as of March 22, 2020
Pricing	 Fair market value in the secondary market The Facility will avoid purchasing shares of eligible ETFs when they trade at prices that materially exceed the estimated net asset value of the underlying portfolio
Scheduled End Date	 September 30, 2020 (unless extended)

Source: Federal Reserve Board.

Other US Regulatory COVID-19 Actions



Agency	Action
FDIC	 Encourage banks to offer small-dollar loans to consumers and small businesses Increased permissible ratio of sweeps allowed to be exempt from classification as brokered deposit from 10% to 25% for 6 months Encouraging alternative methods for documents that would normally be submitted in hardcopy form Urged FASB to delay CECL and exclude COVID-19 related modifications from being considered a concession when determining a troubled debt restructuring classification Released FAQs for bank customers impacted by COVID-19 Mandated that supervisory activities be conducted off-site for the following two weeks
СГРВ	 Postponed data collection from industry on Bureau-related rules Encourage banks to offer small-dollar loans to consumers and small businesses
NCUA	Encourage banks to offer small-dollar loans to consumers and small businesses
ОСС	Encourage banks to offer small-dollar loans to consumers and small businesses
FFIEC FFIEC	Delay submission of Mar 31 Reports of Condition and Income (call reports)
FHFA	 Directed Fannie Mae and Freddie Mac to provide flexibility for employment and appraisal verifications Suspended foreclosures and evictions for GSE-backed mortgages Director issued statement reminding mortgage servicers of hardship forbearance option
HUD (FHA)	Issued a moratorium on foreclosures and evictions for FHA-issued mortgages
BCBS Basel Committee	 Implementation date of Basel III standards deferred by one year to Jan 1, 2023, accompanying transitional agreements for the output floor also extended one year to Jan 1, 2028 Implementation date of revised market risk deferred by one year to Jan 1, 2023 Implementation date of revised Pillar 3 disclosure requirements deferred by one year to Jan 1, 2023

Source: (1) American Bankers Association "Regulator Response to the Coronavirus Disease (COVID-19)". FFIEC is the Federal Financial Institutions Examination Council – members include the FDIC, OCC, FRB, NCUA, CFPB.



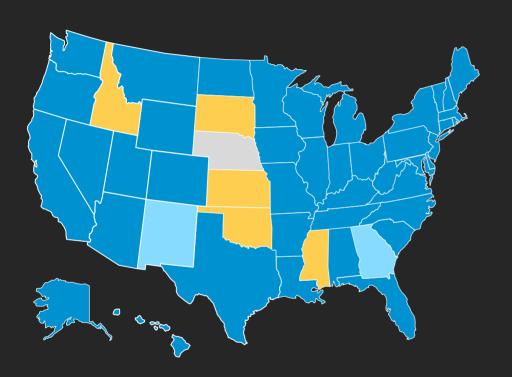
US State & Local Response

US State COVID-19 Response



Data as of March 25, 2020.

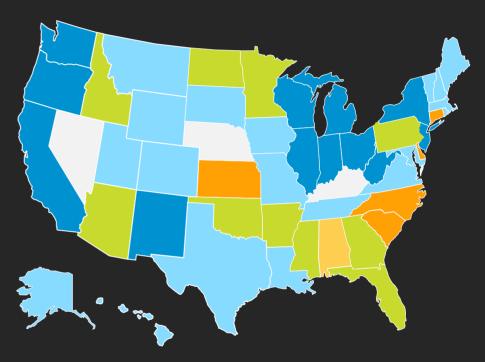
Bar and Restaurant Limits



- Closed except for takeout and delivery
- Limited on-site service
- No closures
- Other

Source: Politico, How states are responding to coronavirus, in 7 maps

Large Gatherings Ban



- All gatherings prohibited
- 10+ prohibited
- 25+ prohibited
- 50+ prohibited

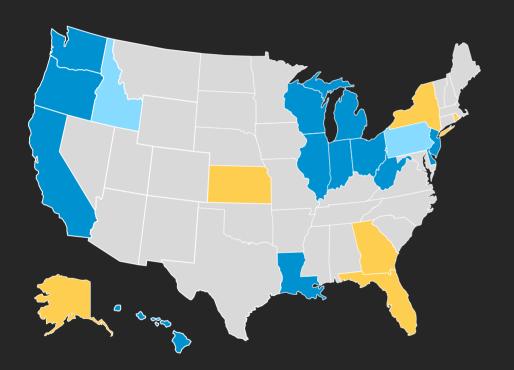
- No gatherings prohibited
- Other

US State COVID-19 Response



Data as of March 25, 2020.

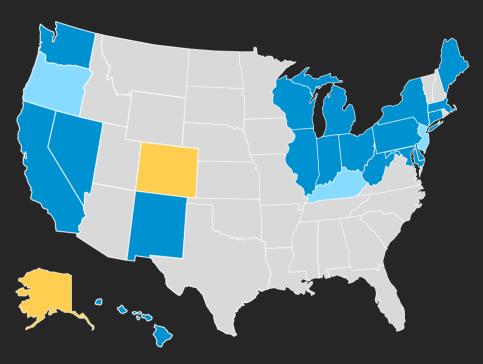
Mandatory Quarantine



- Statewide quarantine
- Affected counties quarantined
- High-risk groups quarantined
- No quarantine

Source: Politico, How states are responding to coronavirus, in 7 maps

Non-Essential Business Closures



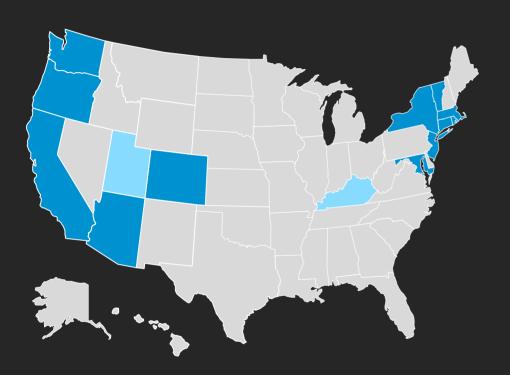
- Non-essential businesses closed
- Non-essential retail closed
- Other
- No businesses closed

US State COVID-19 Response



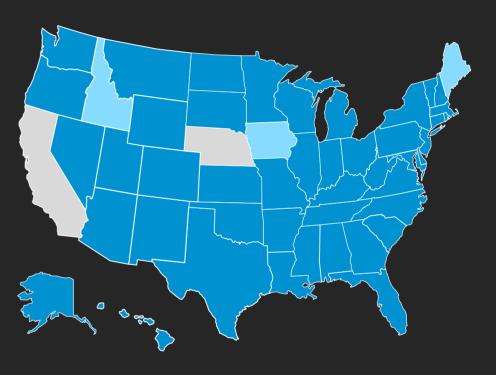
Data as of March 25, 2020.

Paid Sick Leave



- Enacted paid sick leave
- Proposed paid sick leave
- No paid sick leave

State-Mandated School Closures



- Schools closed
- Schools open
- Other

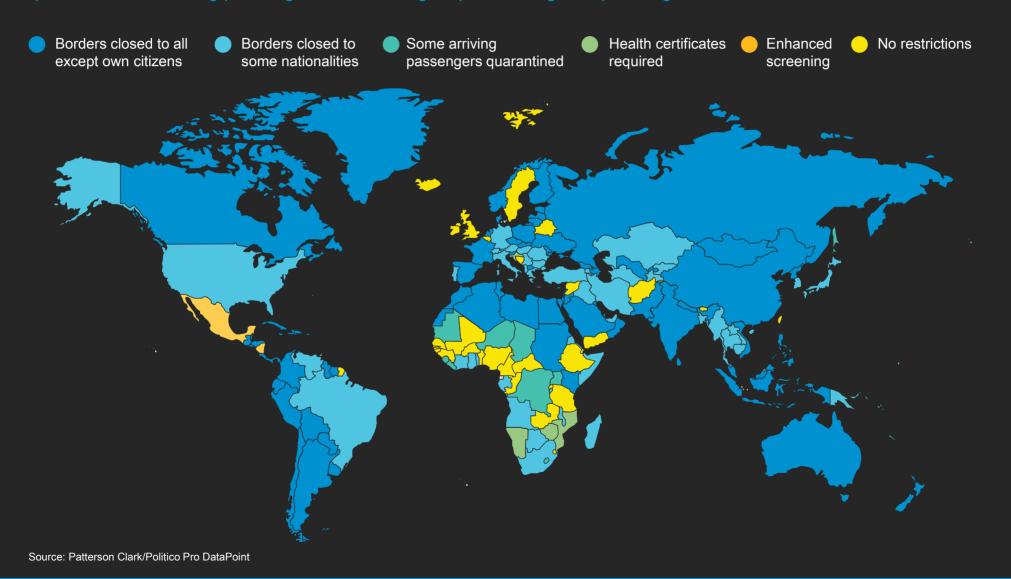
Source: Politico, How states are responding to coronavirus, in 7 maps



Global Air Travel Restrictions



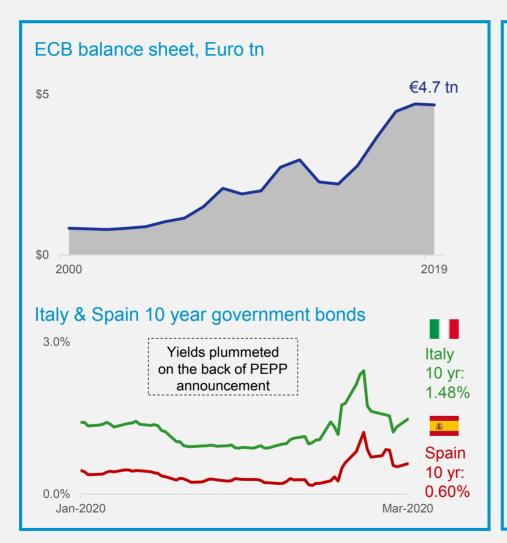
The International Air Transport Association says that closed borders, partial travel bans and quarantines for arriving passengers are affecting 98 percent of global passenger revenues



The ECB's Crisis Playbook



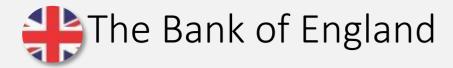
The ECB has commitment to do "everything necessary" to combat the impact of the COVID-19 crisis, including potentially upsizing announced purchase programs



ECB crisis action in March 2020

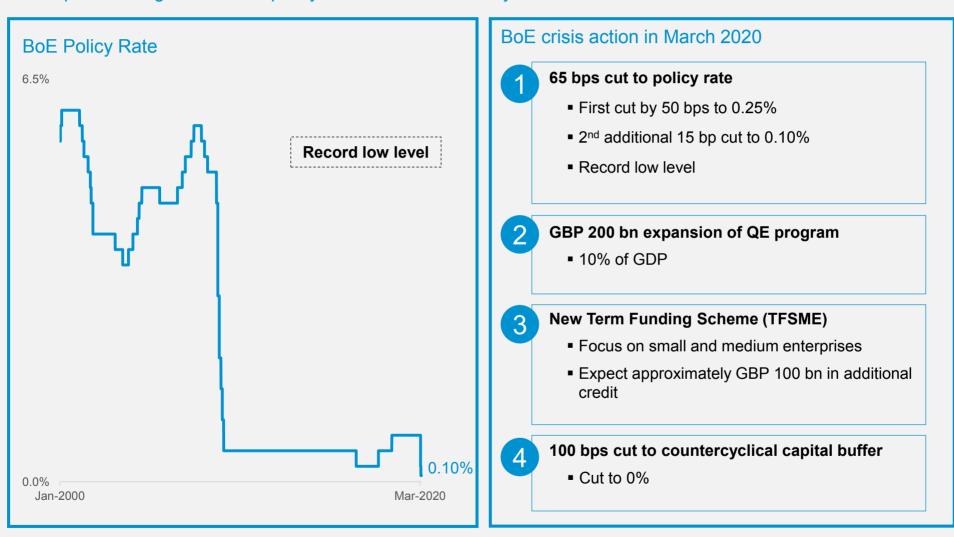
- EUR 750 bn Pandemic Emergency Purchase Program (PEPP)
 - Run through at least 2020
 - Implies increase in monthly bond purchases from EUR 30 bn to EUR 105 bn*
 - CP added as eligible asset for purchase program
 - Corporate credit added as eligible collateral
 - Flexibility in application of Capital Keys and PEPP purchases exempt from 33% issuer limit
 - Minimum eligible maturity reduced to 70 days
 - Waiver of eligibility requirements for Greek gov't debt
- EUR 120 bn temporary increase to Asset Purchase Program
 - Issuer limit constraints were unchanged
- Up to EUR 1.2 tn TLTRO III program announced
 Interest rate set 25 bps below refi operations
 between June 2020 and June 2021
- Opted <u>not</u> to cut the deposit rate further into negative territory

Source: (1-2) ECB. Bloomberg. Data as of March 30, 2020. DB Global Markets Research (Yared. "Whatever it (finally) takes". March 19, 2020). CreditSights ("ECB Copies Fed; Announces Its Own Bazooka". March 19, 2020). *EUR 105 bn assumes PEPP program is in addition to existing framework. Monthly purchases would be closer to EUR 75 bn if PEPP replaces existing framework,





In March, the Bank of England announced a series of policy measures that equate to approximately 200-230 bps of easing and credit liquidity measures worth nearly 15% of GDP



Source: DB Global Markets Research (Raja. Harvey. "BoE: taking stock". March 26, 2020). (1-2) Bloomberg. Data as of March 30, 2020.





China

Monetary Policy Response

- Multiple targeted RRR cuts (at least 100 bps) bringing effective rate to 11% for large banks and 9% for mediumsized banks (RMB 550 bn in liquidity)
- MLF rate cut by 15 bps
- OMO rate cut by 20 bps to 2.2%
- RMB 800 bn in refinancing provided for banks to lend to large corporates
- PBoC instructed financial institutions to extend repayment period of loans for SMEs
- PBoC injected RMB 300 bn liquidity via MLF with rate lowered by 10 bps
- Policy banks offer RMB 350 bn of special credit quotas to private and small firms
- Expected additional cuts over next three months:
 - o 40 bps MLF cut (20 bps in April, additional 20 bps in May or June)
 - o 25 bps benchmark deposit rate cut
 - o 100 bps RRR cut

Fiscal Policy Response

- Politburo announcement that they are preparing a comprehensive stimulus package
 - Expected package could be as large as 6% of GDP
 - Up to RMB 2-3 tn of special CGB issuance expected
 - Used to fund one-off relief and stimulus measures including relief of employer social contributions, supporting domestic consumption, direct wealth transfers to low income families & unemployed, funding public health and COVID-19 fighting measures
 - Likely outside of general budget
 - CGB's have been used twice before in 1998 and 2007
 - Up to RMB 4 trn of local government special bonds
 - Local government bond quota already front loaded and raised by RMB 858 bn
- RMB 80 bn "Epidemic Prevention Fund"
- Materials used for epidemic control exempt from import tariffs
- 50% interest subsidy to some firms affected by virus outbreak

Lockdowns, Quarantines & Other

- Unprecedented lockdown of nearly 60 million people across Hubei province to contain spread of virus
- Suspending entry from foreigners
- Movement restrictions between provinces in China

Source: DB Global Markets Research (Sidorov, Wall, Hooper, Reid, Bhattacharya, Allen. "COVID-19: list of monetary and fiscal policy responses by G20 economies (3)". March 30, 2020. Goel, Kojodjojo, Xu. "Asia's policy response to COVID-19. Xiong. "Shaping the stimulus package". March 30, 2020."). IIF.



Monetary Policy Response	 BoJ to provide liquidity through CP and corporate bond purchases through end-September Low cost lending facility set up for corporates impacted by virus JPY 500 bn for bond purchases followed by additional JPY 200 bn bond purchase program Annual ETF purchase target raised to JPY 12 tn JREIT target increased to JPY 180 bn
Fiscal Policy Response	 Two aid packages totaling USD 19.6 bn including assistance for medical professionals and those affected by school closures as well as loan support Additional stimulus in the form of direct payments to individuals being considered
Lockdowns, Quarantines & Other	 Banned entry for foreign travelers with Chinese passports from Hubei or Zhejiang provinces Banned entry for foreign travelers to had visited certain regions in China, South Korea, Iran or Italy within 14 days Tokyo Olympics delayed to 2021
	South Korea
Monetary Policy Response	 Bank of Korea cut 7 day repo rate 50 bps to record low of 0.75% Interest rate on Bank Intermediated Lending Support Facility from 0.50 – 0.70% to 0.25% Broader open market collateral for open market operations Weekly repo transactions with "unlimited" amount of KRW liquidity Lowered FX liquidity coverage ration to 70% until May; Forex futures trading limit raised by 25%
Fiscal Policy Response	 KRW 11.7 tn (USD 9.4 bn) (0.6% of GDP) in supplementary budget for COVID-19 containment measures Additional KRW 50 tn (USD 38 bn) package for small businesses structured through expansion of financial market stabilization fund KRW 20 trn Bond Market Stabilization Fund to help businesses suffering from cash crunch KRW 10.7 trn Stock Market Stabilization Fund to serve as buffer against capital outflows Expands primary collateralized bond obligations scheme to KRW 6.7 tn to ease credit for low-rated companies
Lockdowns, Quarantines & Other	 Mass testing program for virus detection – focus on "flattening the curve" Schools and large gatherings closed / cancelled Travel restrictions from some countries

Source: DB Global Markets Research (Sidorov, Wall, Hooper, Reid, Bhattacharya, Allen. "COVID-19: list of monetary and fiscal policy responses by G20 economies (3)". March 30, 3030. Goel, Kojodjojo, Xu. "Asia's policy response to COVID-19"). IIF.

All travelers denied entry unless they install a tracking app on their mobile phone



Hong Kong			
Monetary Policy Response	■ Bank's countercyclical buffer lowered from 2% to 1%		
Fiscal Policy Response	 HKD 120 bn fiscal stimulus package HKD 4.7 bn to Hospital Authority to help contain the spread HKD 1 bn to help aviation industry 		
Lockdowns, Quarantines & Other	 Schools suspended Closed borders to all visitors Mandatory quarantines for passengers from several countries 		

	India
Monetary Policy Response	 Announced USD 4 bn FX swaps Up to USD 13.5 bn in long term repo operations at benchmark policy repo rate 75 bps RBI cut to 4.4% (further cuts expected at MPC meeting on April 3) USD 50 bn three-way liquidity injection USD 13.3 bn auction of targeted long-term repo operations 100 bps reduction of reserve ratio for all banks Marginal Standing Facility increased from 2% from SLR to 3%
Fiscal Policy Response	 USD 22.6 bn stimulus package with food aid and direct cash transfers to low-income households Medical insurance for front-line health workers
Lockdowns, Quarantines & Other	 Travel bans and mandatory quarantines for incoming passengers All domestic flights stopped 3 week country wide lockdown

Source: DB Global Markets Research (Goel, Kojodjojo, Xu. "Asia's policy response to COVID-19"). IIF.



	Singapore
Monetary Policy Response	 FX swap lines set up with Federal Reserve Midpoint on FX band lowered
Fiscal Policy Response	■ 2 fiscal packages worth SG\$54.1 bn (USD \$38 bn) (11% of GDP)
Lockdowns, Quarantines & Other	 Travel bans from several countries with quarantines for returning Singaporeans Closure of bars, cinemas, and suspension of religious services
	Indonesia
Monetary Policy Response	 4 central bank rate cuts for a total of 150 bps, bringing rate to 3.5% USD RRR cut from 8% to 4% Rupiah RRR cut by 50 bps USD 9 bn worth of gov't bond purchases
Fiscal Policy Response	 2 fiscal packages worth USD 2.2 bn with support for local governments, social security funds, tourism industries Loan payments for SMEs delayed for up to one year
Lockdowns, Quarantines & Other	 Travel bans and mandatory quarantines Restrictions on public events Short selling of stocks banned
	Taiwan
Monetary Policy Response	 Policy rate cut by 25 bps Loan guarantee program via banks
Fiscal Policy Response	 TWD 60 bn (USD 2 bn) fiscal stimulus package announced Additional TWD 40 bn (USD 1.3 bn) package could be available
Lockdowns, Quarantines & Other	 Travel restricted for all foreigners Transit of airline passengers through Taiwan suspended

Source: DB Global Markets Research (Sidorov, Wall, Hooper, Reid, Bhattacharya, Allen. "COVID-19: list of monetary and fiscal policy responses by G20 economies (3)". March 30, 2020). IIF.





EuroZone

Monetary Policy Response (ECB)

- Up to EUR 1.2 trn of additional TLTRO3 liquidity with discounted interest rate
 - o Capacity increased from 30% of eligible assets to 50%
- EUR 750 bn (6.5% of GDP) "Pandemic Emergency Purchase Program" (PEPP) bond purchase program
 - o Non-financial CP added to eligible securities, collateral expanded to include corporate credit
 - o Deviation from capital keys temporarily allowed
 - o Temporary suspension of 33% issue limit for PEPP purchases
 - o Reduced minimum eligible maturity to 70 days (From 1 yr)
- EUR 120 bn asset purchases "envelope" which can be deployed flexibly
- Loosened capital and liquidity requirements for banks
- Call for joint action with fiscal policy

Fiscal Policy Response

- Common European response being discussed via the European Stability Mechanism (ESM) agreement has not vet been reached
- Consideration of "coronabonds" but no agreement has been reached
- Stability and Growth Pact and the State Aid rules will not impede member state response to crisis
- Coronavirus declared "unusual event outside the control of government", permits spending directly related to event to be excluded from calculation of the fiscal deficit in judging compliance with EU rules
- EUR 1 bn transferred to European Investment Fund (EIF) to guarantee EUR 8bn financing to SMEs
- Credit holidays for existing debtors affected by the virus
- EIB to catalyze EUR 10 bn of investment in SMEs and mid-caps for own account and accelerate deployment of EUR 10 backed by EU budget
- EUR 37 bn Cohesion Policy resources converted into "Corona Response Investment Initiative"

Lockdowns, Quarantines & Other

- 30 day ban on travel into the EU for non residents
- EU Commission to coordinate medical resources and supply chain movement

Source: DB Global Markets Research (Sidorov, Wall, Hooper, Reid, Bhattacharya, Allen. "COVID-19: list of monetary and fiscal policy responses by G20 economies (3)". March 30, 2020)





Germany

Fiscal Policy Response

- Indicated support for common European fiscal instrument (Eurogroup conversations underway on use of the European Stabilization Mechanism)
- Exemption to constitutional debt break given extraordinary crisis situation
- EUR 750 bn package including EUR 156 bn supplementary budget and EUR 600 bn through Economic Stabilization
 Fund (ESF) including 100 bn credit to KfW for additional loan guarantees
- EUR 156 bn supplementary budget (EUR 122.5 bn additional spending & expected EUR 33.5 bn tax revenue shortfall)
 - o EUR 50 bn direct support for small and single-individual businesses
 - Eligible businesses have up to 10 employees
 - o Payments ranging from EUR 9,000 to EUR 15,000 to cover recurring payments such as rent
 - Additional support for low income families through child support allowances and easier access to minimum social support schemes
 - o Temporary relief from eviction due to income loss
 - o Improved financing to hospitals aiming to double the number of intensive care beds
 - o Extending relevant deadlines to avoid technical insolvencies
 - Deferral of business tax payments
- Economic Stabilization Fund (ESF): EUR 400 bn loan guarantees, EUR 100 bn credit to development bank KfW, EUR
 100 bn for direct equity investments in German companies
 - Expanding on 2008 crisis response by setting up new ESF to target direct investments in the real economy. To be eligible for investment from ESF, companies must meet two of the three listed criteria:
 - o Revenues exceeding EUR 50 mn
 - o Balance sheet volume exceeding Eur 46 mn
 - o 249 or more employees
 - Companies that do not meet the criteria may be eligible if they are declared significant to the German economy or security
- Unlimited loan guarantees through the KfW (German development bank) with EUR 100 bn credit from ESF
 - o Eligible companies expanded to include those experiencing financial difficulties from COVID-19
- EUR 25 bn to EU Commission's Corona Response Initiative

Lockdowns, Quarantines & Other

- Closed borders with Austria, Denmark, France, Luxembourg and Switzerland
- Banned public gatherings of three or more people
- Schools and daycare centers closed in all 16 states
- Nationwide closure of non-essential retail activities (bars, clubs, theaters, gyms, museums, etc.)
- Religious congregations and civic associations banned from in-person meetings

Source: DB Global Markets Research (Sidorov, Wall, Hooper, Reid, Bhattacharya, Allen. "COVID-19: list of monetary and fiscal policy responses by G20 economies (3)". March 30, 2020).





Italy

Fiscal Policy Response

- EUR 25 bn (1.5% of GDP) fiscal stimulus package announced with 5 main pillars:
 - o Strengthening national healthcare system and civil protection department (EUR 3.2 bn)
 - o Preserving employment levels and incomes (EUR 10.3 bn)
 - o Liquidity for businesses and households (EUR 5.1 bn)
 - o Additional support for local governments (EUR 4.5 bn)
 - Suspending tax payments and providing tax incentives to businesses and households (EUR 1.6 bn)

Lockdowns, Quarantines & Other

- Nation-wide lockdown through at least April 3
- Banks and non-bank intermediaries are allowed to operate below the capital conservation buffer and the liquidity coverage ratio
- Deadlines for reporting obligations extended
- Banned short-selling of stocks



France

Fiscal Policy Response

- EUR 45 bn (1.9% of GDP) funding package including EUR 8.5 bn for two months of payments to workers, partial unemployment scheme implemented for first time in France's history
- EUR 300 bn of guarantees for bank loans to businesses
- Delayed payment of corporate taxes

Lockdowns, Quarantines & Other

- Closed all non-essential stores and restaurants
- Full lockdown with only outings for necessities such as buying food, seeking medical care or going to work (if work can not be done from home)
- Bans short selling of selected stocks



Spain

Fiscal Policy Response

- EUR 18 bn (1.4% of GDP) of direct public resources
- EUR 100 bn (8% of GDP) of state loan guarantees

Lockdowns, Quarantines & Other

- Borders closed to non-citizens or permanent residents
- Nationwide lockdown with people only allowed to leave their homes to buy essentials or to work
- State of emergency expected to last through April 11
- Banned short selling in markets for one month

Source: DB Global Markets Research (Sidorov, Wall, Hooper, Reid, Bhattacharya, Allen. "COVID-19: list of monetary and fiscal policy responses by G20 economies (3)". March 30, 2020). IIF.





UK

Monetary Policy Response

- 65 bps rate cut to 0.1%
- Corporate bond purchase program expanded by GBP 200 bn (10% of GDP)
- Countercyclical capital buffer cut 100 bps to 0%
- Announced "Covid Corporate Financing Facility" to buy CP up to one-year in maturity
- Expanded TFSME lending program to be financed by issuance of central bank reserves
 - o Expected to create up to GBP 100 bn of credit

Fiscal Policy Response

- GBP 330 bn in emergency loan guarantees to business
- GBP 20 bn in tax cuts & grants for businesses
- GBP 20 bn initial fiscal support package announced
- GBP 7 bn emergency spending package to support businesses, households and financial conditions
- GBP 5 bn for National Health Services to treat coronavirus patients and support social care services
- Government will pay up to 80% of wages (up to GBP 2,500/month) for jobs at risk of being lost
- Self-Employed Income Protection Scheme will compensate up to 80% of lost income (up to GBP 2,500/month) for those eligible with taxable profits below GBP 50k

Lockdowns, Quarantines & Other

- Nationwide lockdown
- Nationals advised against all international travel for 30 days

Source: DB Global Markets Research (Sidorov, Wall, Hooper, Reid, Bhattacharya, Allen. "COVID-19: list of monetary and fiscal policy responses by G20 economies (3)". March 30, 2020)



	Russia Russia			
Monetary Policy Response	 FX purchases under fiscal rule halted by CBR Pre-emptive FX sales as oil prices dropped below fiscal rule benchmark of \$42.4/barrel Additional FX mechanisms to offset the full impact of FX flows from oil revenues if oil falls below \$25/barrel Additional liquidity via repo operations, increase in FX swap operation limits RUB 500bn liquidity facility targeted towards SME lending 			
Fiscal Policy Response	 RUB 300bn (USD 4bn) fund, raised limits on state guarantees for affected industries, unemployment benefits raise, state to pay for sick leave For next 6 months, all benefits due will be extended automatically and moratoria on consumer and mortgage loans 			
Lockdowns, Quarantines & Other	 Closed borders to foreign citizens All international flights suspended Week long holiday for non-essential work with full pay Mandatory self-isolation in Moscow for over 65 year olds and those with preexisting conditions Moscow closure of all non-essential stores/restaurants 			
	Czech Republic			
Monetary Policy Response	 CNB policy rate cut of 125 bps, Lombard and the discount rate also reduced by 75 bps each, countercyclical capital buffer rate lowered to 1.00% CNB altered framework for repo operations to provide liquidity, auctions 3 times a week to fully satisfy all bids at the 2-week repo rate CNB urged banks, insurance companies, pension companies to refrain from any dividend payments Flexibility for local banks to postpone loan payments 			
Fiscal Policy Response	 CZK 100bn (EUR 3.7bn, 2% of GDP) in direct financial assistance to businesses Expanded credit lines, deadline for tax returns pushed 3 months CZK 15,000 a month to be paid to all those who had to stop work due to government containment measures Pledged CZK 900bn (EUR 33.3 bn, 16% of GDP) in guarantees 			

Nationwide lockdown with people allowed to go out only for work, purchases or doctor visits

Source: DB Global Markets Research (Ozturk, Masia, Sidorov, Kharazi, Roy. "CEEMEA Macro Notes: COVID-19: List of monetary and fiscal policy responses (3)" March 27, 2020).

Borders with Germany and Austria closed

No entry or travel to for foreigners from his risk countries

Lockdowns,

Quarantines & Other



	Hungary				
Monetary Policy Response	 Grace period on loan repayments NBH asked local banks to delay their payments of dividends 				
Fiscal Policy Response	 Exempt social security contributions, health insurance obligations and rent payments for affected industries HUF 8bn to fight coronavirus 				
Lockdowns, Quarantines & Other	 Borders closed to all non-residents Nationwide curfew, infringements liable to police fines 				
	Poland				
Monetary Policy Response	 MPC policy rate cut by 50 bps, reduced RRR by 300 bps 4 day repo operations announced to boost liquidity 3 month grace period for interest and principal payments on existing loans Large scale purchases of government bonds in secondary market TLTRO-type program to provide liquidity to banks for loans to NFCs 				
Fiscal Policy Response	 PLN 212 bn package to protect jobs and companies, support healthcare, financial systems and public investment PLN 1.5 bn allotted to fight the COVID-19 outbreak Enactment of the "sugar tax" postponed to 2021 				
Lockdowns, Quarantines & Other	 All international flights and rail travel, domestic flights halted Nationwide lockdown, gatherings of more than 2 people fineable Public transportation suspended 				

Source: DB Global Markets Research (Ozturk, Masia, Sidorov, Kharazi, Roy. "CEEMEA Macro Notes: COVID-19: List of monetary and fiscal policy responses (3)" March 27, 2020).



Turkey				
Monetary Policy Response	 CBT cut remuneration rate on required reserves by 2% Lowered key one-week repo rate by 100bps CBT introduced set of financial stability measures Debt moratorium to firms and consumers with payment difficulties due to virus outbreak 			
Fiscal Policy Response	 TRY 100bn (USD 15.5bn, 2-2.5% of GDP) to deal with economic repercussions from virus outbreak Tax deferrals for self-employed and firms affected by virus 			
Lockdowns, Quarantines & Other	 Suspended flights to 68 high risk destinations Closed land borders with Iran, Iraq, Azerbaijan and Georgia for passenger traffic Nationwide lockdown and partial curfew for citizens over the age of 65 and immunocompromised Mass prayers in mosques suspended 			

	South Africa
Monetary Policy Response	 SARB eased main policy rate by 100bps Measures to inject additional liquidity into the money market SARB will buy undisclosed amount of bonds to support liquidity
Fiscal Policy Response	 R 4bn of fiscal support (0.1% of GDP) to support industry, tourism and other distressed firms R 8m tax subsidies to low income workers Solidarity fund comprised of R 100m seed capital from Treasury, R 50m from National Lottery and R 2bn from two influential families to assist in tracking the spread, care of vulnerable and those whose lives are disrupted
Lockdowns, Quarantines & Other	 Travel ban for incoming visitors from high risk countries Visas cancelled for visitors from high risk countries Citizens returning from high risk countries will be tested and forced quarantined Non-essential international travel banned Nationwide lockdown, gatherings of more than 100 people prohibited

Source: DB Global Markets Research (Ozturk, Masia, Sidorov, Kharazi, Roy. "CEEMEA Macro Notes: COVID-19: List of monetary and fiscal policy responses (3)" March 27, 2020).



□ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □				
Monetary Policy Response	 Open market repo transactions, government bond purchases in the secondary market, FX swap with local banks BOI allocated up to USD 15bn in FX swap transactions to local banks to ensure USD liquidity Series of regulatory steps including leniencies in repayment of mortgages, easier access to credit facilities for households and firms 			
Fiscal Policy Response	 ILS 15 bn support package for businesses, healthcare system and other public services ILS 4 bn government backed loans 			
Lockdowns, Quarantines & Other	 Borders closed to non-citizens, West Bank and Gaza Nationwide lockdown for at least 1 week with people only allowed to leave their homes to buy essentials, go to work, and walks limited to 100m range from home Restriction of workers going to workplace capped at 30% of total headcount, except for essential services Public transportation reduced by 25%, railway transport halted completely, number of private vehicles restricted 			

Source: DB Global Markets Research (Ozturk, Masia, Sidorov, Kharazi, Roy. "CEEMEA Macro Notes: COVID-19: List of monetary and fiscal policy responses (3)" March 27, 2020).



*

Canada

Monetary Policy Response

- Bank of Canada cut rates three times for total of 150 bps taking rate to 0.25%
- Launched Commercial Paper Purchase Program
- Launched program to purchase Canadian gov't securities in secondary market at rate of at least CAD 5bn a week
- Announced a new Bankers' Acceptance Purchase Facility
- Lowered Domestic Stability Buffer requirement for domestic systemically important banks by 1.25% of RWA

Fiscal Policy Response

- Fiscal program worth 3% of GDP announced including funding for firms and households, eased eligibility for sick pay, and deferred taxes
- Up to 75% wage subsidy for qualifying businesses for up to 3 months to help prevent layoffs

Lockdowns, Quarantines & Other

- Closed borders to non residents or immediate family
- Mutual decision to close US-Canada border to non-essential travel
- Only four Canadian airports to stay open to international flights
- Schools, museums, cinemas closed with additional containment measures and the provincial level



Mexico

Monetary Policy Response

- Reduced reserve requirements by approx. MXN 50 bn
- Upgraded NDF auction program from USD 20 Bn to USD 30 Bn and resumed auctions
- 50 bp rate cut ahead of scheduled meeting

Fiscal Policy Response

- Advanced pensions to the elderly
- Health Emergency Fund of approx. MXN 180 bn being set up
- Liquidity assistance for development banks
- Potential additional public spending for the health system
- Put primary balance target under review
- Adjusted local-currency bond auction program

Lockdowns, Quarantines & Other

- Recommendation (not requirement) to cancel large gatherings
- People encouraged to stay home and social distance

Source: DB Global Markets Research (Sidorov, Wall, Hooper, Reid, Bhattacharya, Allen. "COVID-19: list of monetary and fiscal policy responses by G20 economies (3)". March 30, 2020). IIF.



Country	Virus response	Monetary response	Fiscal response
Brazil	 Land borders closed State of emergency declared through Dec 31, 2020 	 50 bps rate cut BRL 637 bn (USD 127 bn) freed up for bank lending FX intervention for liquidity and volatility 	 BRL 500 bn (7% of GDP) fiscal package including unemployment benefits and direct payments to individuals Direct vouchers for those in informal labor market
Argentina	 Closed borders to foreigners and residents National quarantine declaration expected 	 Expanded repo programs targeted at SMEs Increased assistance to SMEs by expanding available funds for loans Reduced commercial bank reserve requirement 	 2% of GDP package reallocated to pandemic response including direct payment to some citizens, small business loans and price subsidies for basic goods
Chile	 Closed borders to foreigners State of catastrophe declared Closures of malls and cancelation of large events 	 75 bps rate cut Increase financial facilities for local banks Corporate bonds added as eligible collateral for all current liquidity programs in pesos 	 USD 11.7 bn (4.7% of GDP) plan to support employment and protect small business liquidity Deferred tax payments Deferred utility bill payments for individuals
Colombia	 Borders closed and airports set to close Mandatory lockdown for those over 70 and some state curfews 	 FX intervention Increased repo operations 	 COP 14.8 tn (US 3.6 bn) spending package to support health sector, vulnerable families and small business loans Announced fiscal support can be extended to COP 48 (USD 11.6 bn) tn if needed
e Peru	 Borders closed Mandatory quarantine and curfew 	FX intervention100 bps rate cut	 0.1% of GDP measures announced thus far (larger package expected) PEN 380 (USD 108) transfer to all vulnerable families PEN 300 mn (USD 85 mn) for low cost credit to SMEs Extraordinary measures adopted for banks and credit unions

Source: DB Global Markets Research (Sidorov, Wall, Hooper, Reid, Bhattacharya, Allen. "COVID-19: list of monetary and fiscal policy responses by G20 economies (3)". March 30, 2020 Brown, Ayala, Giacomelli, Labbe. "COVID-19: Policy responses in LatAM". March 19, 2020).



The Silver Lining



- As in 2008-2009, the Fed response has been swift and impressive. In less than one week, the Fed became the primary "conduit" for the US Government to restore order to many critical funding markets (USTs, MBS, ABS, Muni, IG corporate, CP, and US dollar funding). The Fed will also play an important role in levering \$454 bn of funding from the US Treasury, creating \$4-5 trillion of financing for medium and large size US corporations.
- The global fiscal response has been the largest in history. With \$2.8 trillion already announced, the US fiscal response at 13% of GDP is the largest ever, with additional stimulus expected. Dozens of other countries globally have also announced tens of trillions of fiscal stimulus in the 2-11% of GDP area.
- Despite the high stakes of an election year, bi-partisanship in Washington improved when needed most, just as in 2008. While there certainly was unnecessary division, the \$2.4 trillion CARES Act is impressive in its size, scope and the speed with which it was put together (1-2 weeks). Support in the US Senate was unanimous across both sides of the aisle in a 96-0 vote.
- While deficits will be high, global rates are sufficiently low to manage the burden over the short term. While the toolkit is narrowing in size, global market confidence in Government balance sheets remains high. Rates are unlikely to rise anytime soon.

Source: DB Capital Markets Strategy.

The Silver Lining



- 5
- Many of the heightened market dislocations of mid March have eased. Liquidity has improved. USD funding access, while still difficult, has also increased sharply through several Fed programs (CP, swap lines, repo facility). While several important markets are still under stress (energy, HY, lower rated CP), considerable progress has been made with more support expected in the weeks ahead.
- 6
- While the virus response was initially slow across the US and Europe, it has progressed significantly over the last two weeks across many countries. Social distancing and quarantines (where needed) have been established across most high population regions. Testing still lags in the United States in particular, but is ramping up in New York, and will soon in other regions. Healthcare protective gear (PPE), ventilators and bed capacity are all receiving significant, if not belated, attention and resources.
- 7
- While the economic shock underway is "larger" than the global financial crisis in both speed and magnitude, the bounce back after virus containment should be more rapid. The origins of this shock are not balance sheet driven as in 2008, but rather, are more income based through a demand shock. The fiscal and monetary response underway has also benefitted from the 2008-9 roadmap, and is the largest in history.

Source: DB Capital Markets Strategy.

The Silver Lining



- 8
- Historically, during times of crisis, markets "hit bottom" many months before the economy or key crisis metrics. In 2008-9 for example: (i) HY credit spreads hit their widest point in late 2008, and then began to tighten, 4 years before peak cumulative defaults; (ii) US bank stocks began to rally in March 2009, which was 5 years ahead of peak cumulative bank failures; and (iii) US equities began their decade long bull run in March 2009, nearly 4 months before the recession had ended.
- 9
- The COVID-19 crisis, and the economics of stoppage, will by definition be temporary. Admittedly, we do not know if temporary is 2 months, 4 months or 6 months. Virus return next winter is also a concern. However, public policy and scientific progress is moving quickly, and maximum global resources have been mobilized. This will be temporary.
- 10
- Society has been fundamentally altered by the largest global health pandemic in a century. People and communities are coming together, albeit virtually. Families are spending uninterrupted time at home in a manner similar to generations past. Digital and technology based adoption has skyrocketed, as has the related social creativity and entertainment. The environment is having a much needed breath of fresh air. And while too many people have needlessly become sick or died, the human spirit has been strengthened.

Source: DB Capital Markets Strategy

COVID-19 Reports





Feb 2020
Containing the Coronavirus



Mar 2020 Coronavirus Contagion



Mar 2020

Maximum Containment, Social Distancing
& the Economics of Stoppage



Mar 2020
The COVID-19 Corporate Checklist



Apr 2020The COVID-19 Global Policy Response

Past Reports





Past Reports





Feb 2020The Road to 270



Jan 2020 This Time is Different



Nov 2019
Superpowers with Structural Issues



Oct 2019 Mixed Signals



Aug 2019
Accommodation, Escalation & Retaliation



Jun 2019 US Recession Watch



Apr 2019 Pervasive Forces



Mar 2019
The Watchman



Nov 2018 Reflections



Nov 2018
Perspectives on Markets & the 2018 US Midterms



Sep 2018
Thinking Differently About Trade Risk



Jul 2018Delicate Balancing Act

Past Reports





May 2018
Underestimating US Tax Reform



Mar 2018 Regime Change



Dec 2017
The US Tax Cuts & Jobs Act



Nov 2017
A November to Remember



Nov 2017 Here Comes the Senate



Nov 2017
The House Moves First



Sep 2017
Power, Politics & Markets



Jul 2017Bond Market Signals



May 2017 Tax Reform Lite



Apr 2017
Dovish Fed Liftoff



Feb 2017 The US Tax Code



Jan 2017 The First 100 Days

About the Authors





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Tom Joyce is a Managing Director and Capital Markets Strategist within Deutsche Bank's Corporate Finance division. Based in New York, Tom heads a team that creates customized analytical content for multinational US corporates and Fortune 500 companies. His team provides in depth analysis on the impact of economic, political, public policy and regulatory dynamics on the US credit, foreign exchange, rates and commodities markets.

Tom has over 20 years of Investment Banking experience at Lehman Brothers (10 years) and Deutsche Bank (14 years) in New York, London, Hong Kong, and San Francisco. Over the last 13 years, Tom created and built the Capital Markets Strategy role within Deutsche Bank's Investment Bank, the only position of its kind on Wall Street. He has previously served as the host of the Corporate Finance Monday morning meeting (4 years) and the Managing Director Promotion Committee (2 years).

Tom's educational background includes a year of study at Oxford University from 1991 - 1992, a Bachelor of Arts in Political Science from Holy Cross College in 1993, and a MBA from Kellogg Business School, Northwestern University in 2000.

Tom resides in New Canaan, CT with his wife and four sons, where he serves on the Board of Trustees of the New Canaan Library, and the Board of the New Canaan Football (Soccer) Club. He also coaches youth soccer, basketball and lacrosse.



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Frank Kelly is the Head of Government & Public Affairs for North and Latin Americas. In this role, he advises executive management on strategic issues across all business platforms while managing and coordinating relationships with elected officials and political and legislative bodies globally.

Additionally, he heads up the Bank's U.S. Direct Investment Advisory Group (DIAG) providing strategic counsel to non-US companies engaged in cross-border mergers and acquisitions requiring regulatory and political approvals. Frank also serves as the Bank's Chief Political Risk Strategist advising clients on geopolitical and domestic risk issues and their impact on markets and industry sectors.

He also represents Deutsche Bank on the Board of Directors of the Securities Industry and Financial Markets Association (SIFMA). Previously, Frank was the Bank's Head of Communications & Public Affairs – Americas overseeing legislative and regulatory matters, corporate and internal communications, branding and advertising and conferences and events for Deutsche Bank in the Western Hemisphere.

Prior to joining Deutsche Bank, Frank held senior positions at both Charles Schwab & Co. and Merrill Lynch & Co, Inc.

Before joining the private sector, Frank served at the U.S. Securities and Exchange Commission as Chief Spokesman and Senior Policy Advisor to the Chairman as well as the US Department of Justice as Assistant to the Director for Policy Development managing international issues.

Prior to these posts, he served on the White House staff of George H. W. Bush and, earlier, on the staff of the Ronald Reagan White House where he started as a writer for President Reagan.

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Hailey Orr is a Director in Deutsche Bank's Capital Markets Strategy group, within the Corporate Finance division. The team provides market based content for corporate clients to assist in strategic decision making. Focus areas include the impact of economic, political, public policy and regulatory dynamics on the US credit, foreign exchange, rates and commodities markets. Hailey is also on the steering committee of the Americas Women's Network and helps lead the University of Michigan Global Markets recruiting team.

Prior to joining Capital Markets Strategy, Hailey spent nearly three years in Deutsche Bank's Consumer Equity Specialty Sales group. As part of the Global Markets division, her team focused on providing insights, opinions, and flow updates on the consumer equity space to the bank's largest institutional investor clients.

Hailey graduated with honors from the University of Michigan's Ross School of Business with a BBA and a minor in International Studies.



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Stephanie Kendal is an Associate in Deutsche Bank's Capital Markets Strategy group. After interning with the bank in summer of 2016, Stephanie rejoined as a full time hire in July 2017. Stephanie is also a member of the Women's Network Junior Council. She graduated with honors from the University of Michigan's Ross School of Business with a BBA.

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Reader's Notes



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