



Payden & Rygel

Investment Management

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Coronavirus Macro Update

17 March 2020



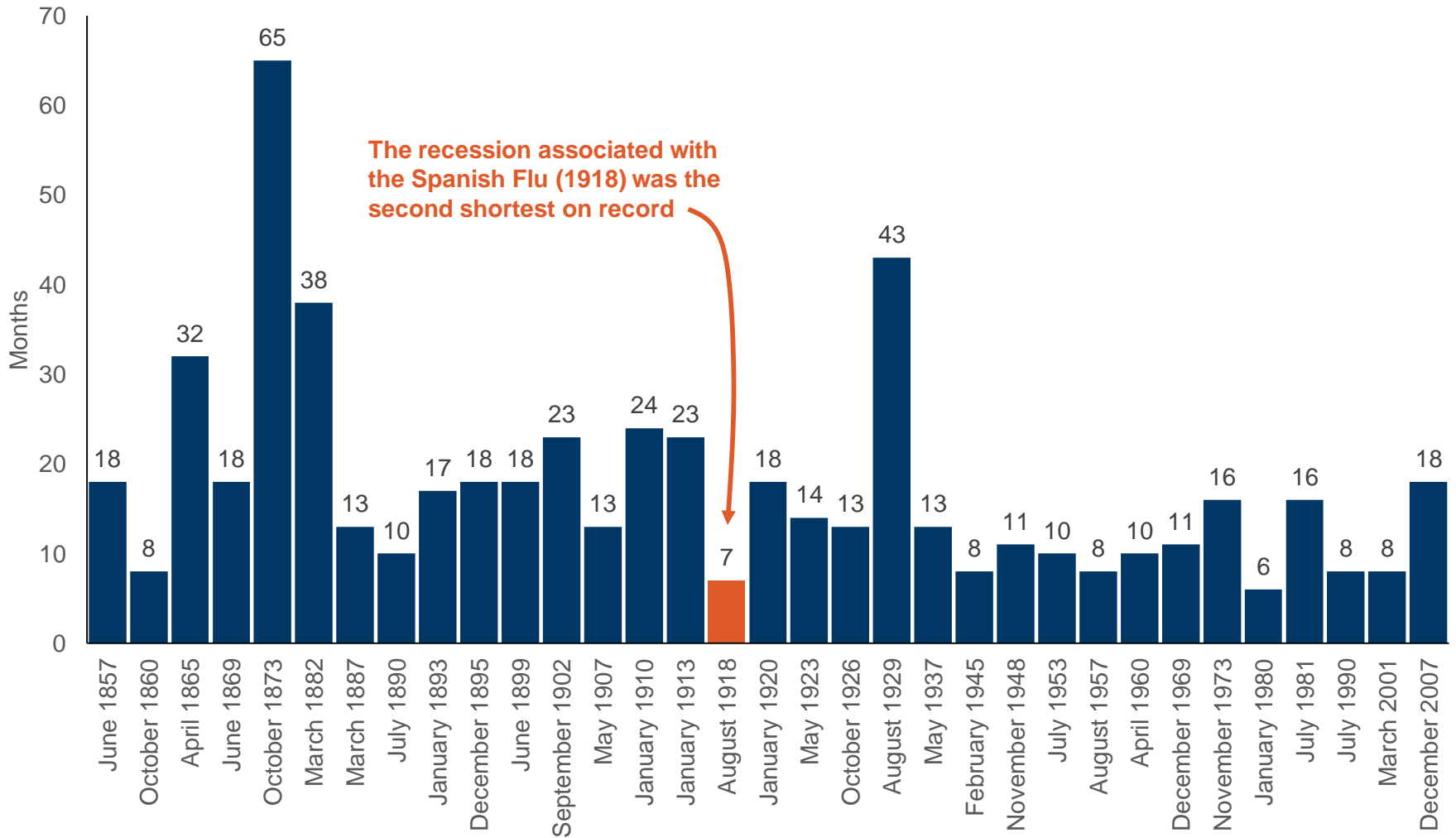
- The Coronavirus has now spread globally and become a pandemic. The 1918 pandemic led to a U.S. recession that lasted 7 months (*Slide 3*).
- **We expect to see a short-lived recession in the U.S. in Q2 2020.** Data is deteriorating sharply (see *Slide 4*). We expect U.S. GDP to decline at an annual rate of 5% in Q2 but rebound in H2 (*Slide 5*).
- **Good news: The growth rate in virus cases has started to taper off in countries that took necessary measures (*Slide 6*, much like the U.S. is doing now).**
- **Good news: Economic activity will start to recover once the virus spread subsides, how quickly is an open question (*Slide 7*). Our baseline estimate is ~3 months.**
- **Policymakers are not standing still.** The Fed can move the quickest, but we expect aggressive fiscal policy as well, with stimulus in excess of \$1 trillion, ~5% of GDP (*Slide 8*).
- **Good news: U.S. economy was on solid footing going into the virus outbreak (*Slide 9*).**



Worst Pandemic in History Sent the U.S. Into Short Recession in 1918

Modern Science And The Modern World Are Very Different Than They Were In 1918

Length of All U.S. Recessions on Record



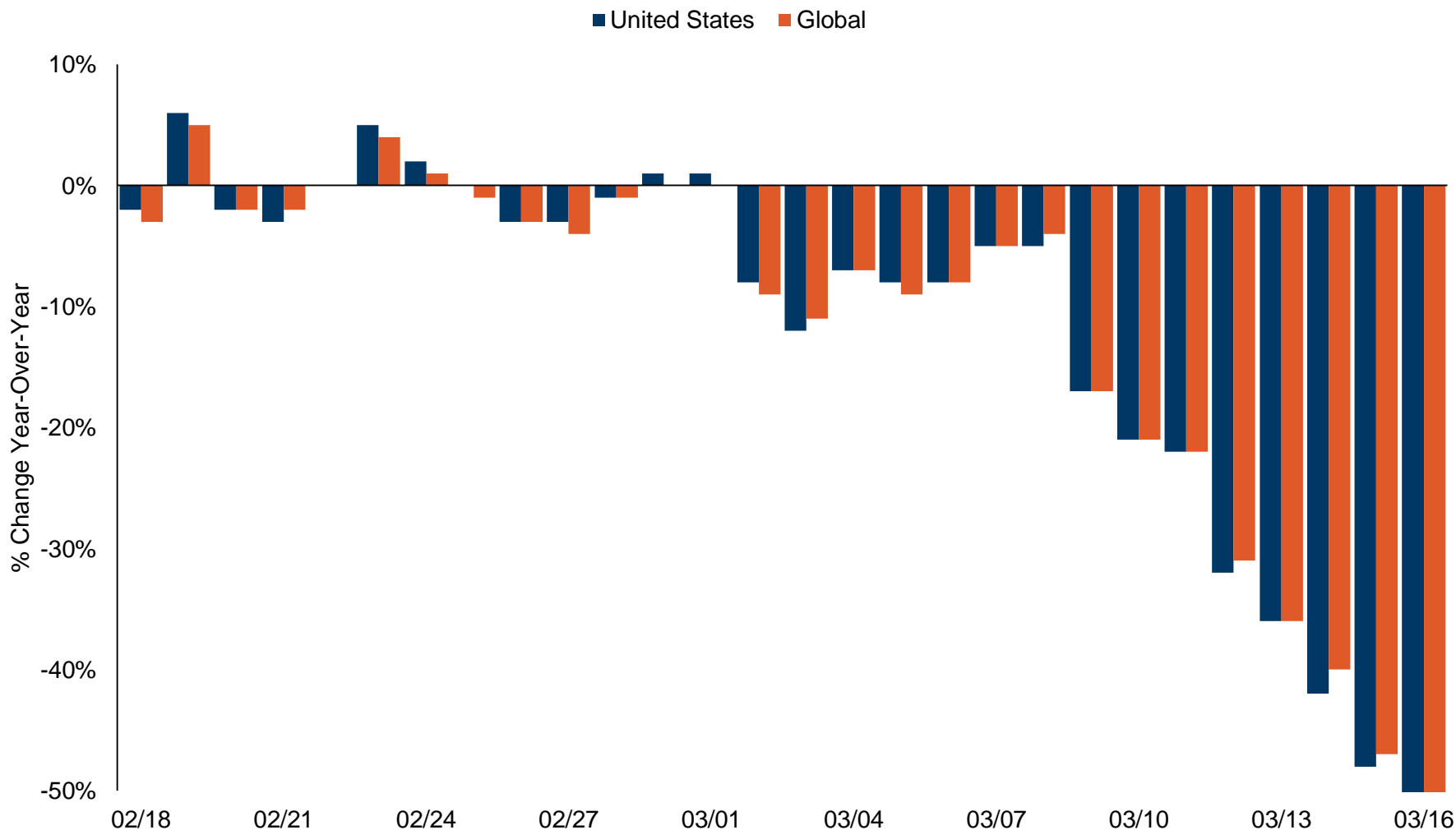
Source: NBER



We Can't Wait For Traditional Economic Releases. High Frequency Data Shows A Slump In Spending.

Open Table Data Shows Restaurant Bookings Have Declined Drastically In The Last Two Weeks

Bookings on Open Table In the U.S. and Global

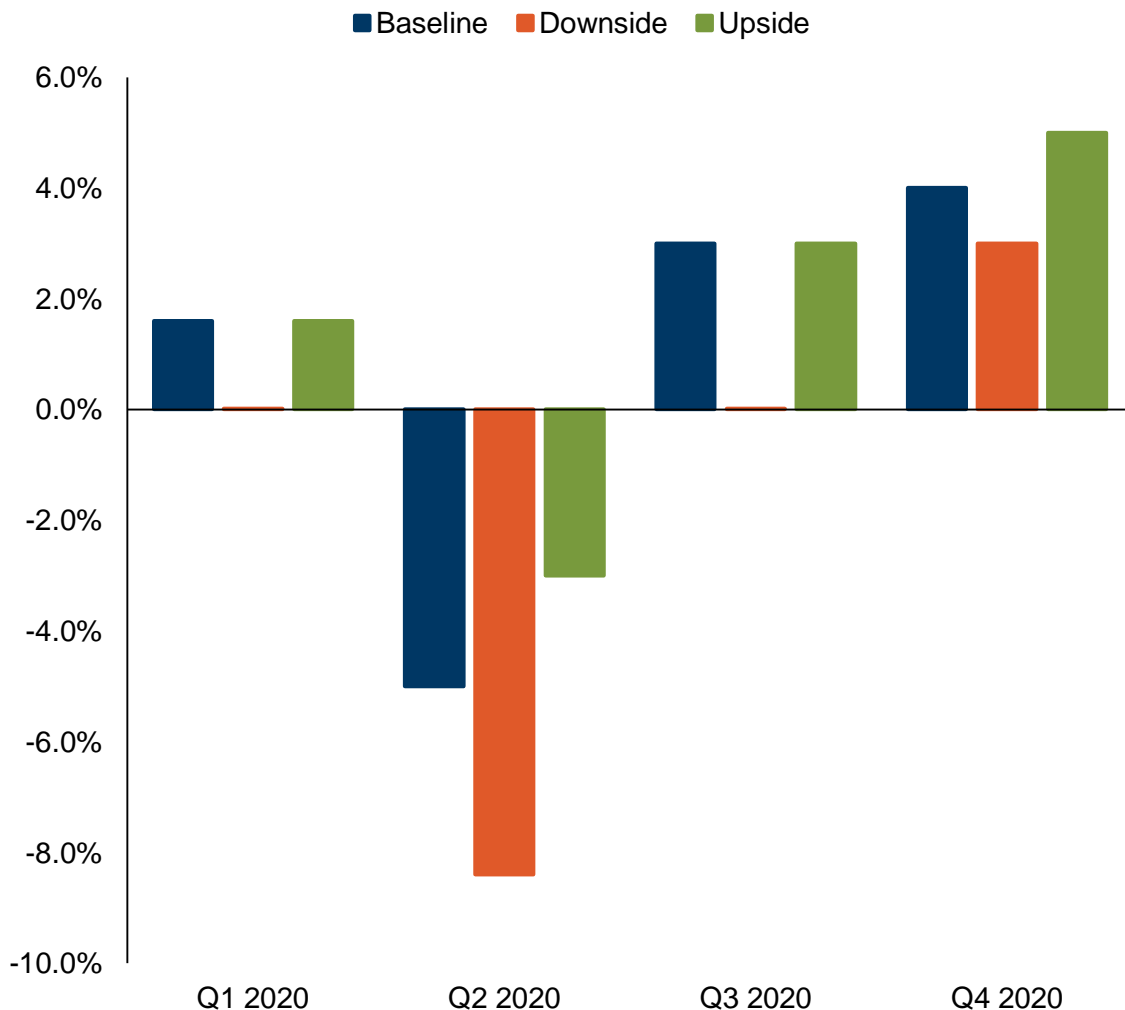


Source: Open Table



We Expect To See A Short-Lived Recession In The U.S. In 2020

Baseline, Downside, and Upside Scenarios for U.S. GDP By Quarter



For The Full Calendar Year 2020

Scenario	Q4/Q4 2020 Year-Over-Year Change
Baseline	0.4%
Downside	-1.4%
Upside	1.0%

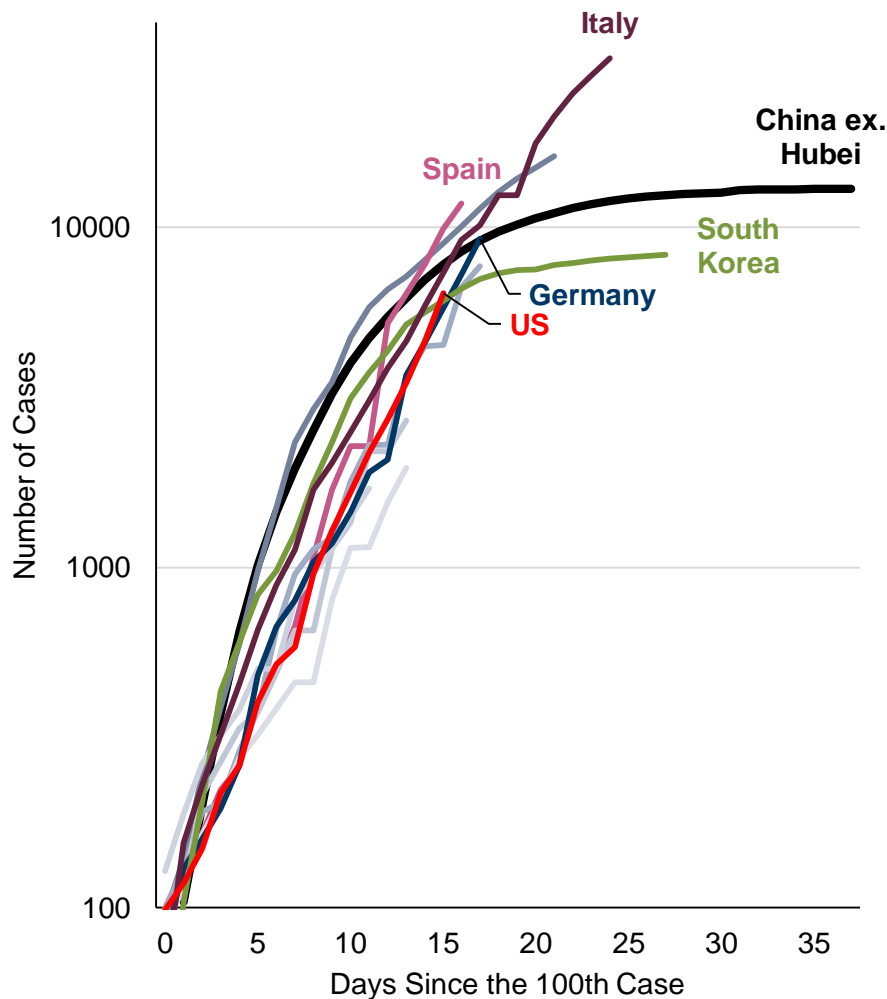
Source: Bureau of Economic Analysis



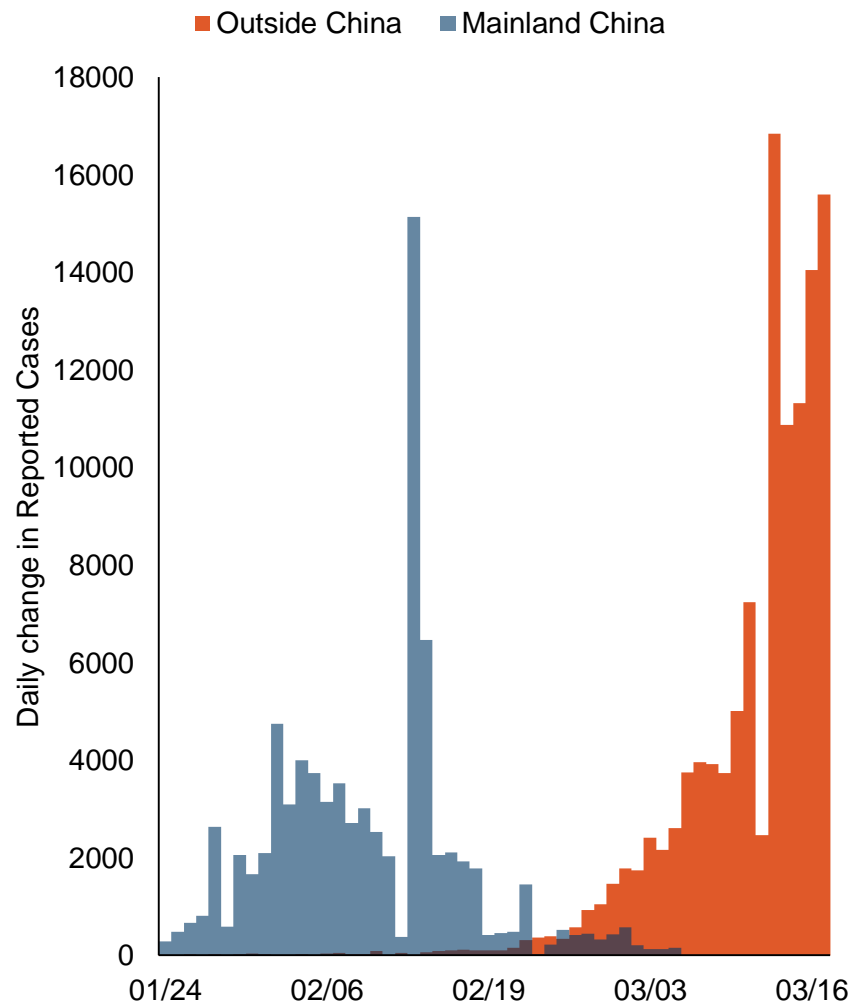
Good News: The Growth Rate In Cases Has Started To Taper Off In Some Countries

We Continue To Expect Volatility and Shutdowns Until Cases Start to Level Off Globally

Cases in Countries With The Ten Largest Outbreaks



Daily Growth in Cases



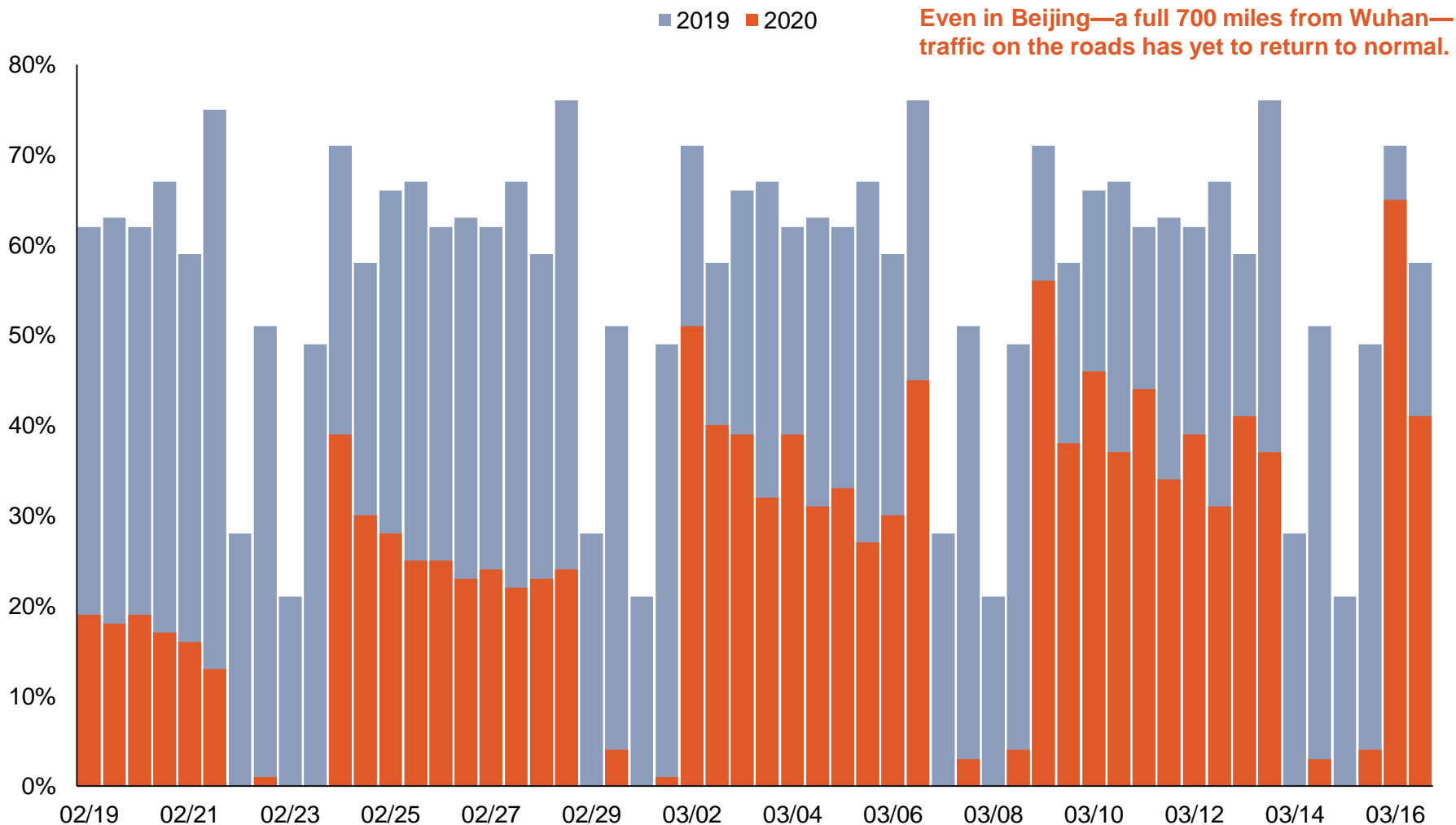
Source: World Health Organization, Johns Hopkins CSSE, Bloomberg

*Updated until 3/17



Good News: The Economic Data Will Start to Recover As Virus Ebbs

Congestion Rate During Rush Hour In Beijing, China (This Year Compared To Last Year)



Source: TomTom

*How much longer a commute takes compared to baseline uncongested conditions



Policymakers Are Not Standing Still, But Some Can Act More Quickly Than Others

The Federal Reserve Is Crisis “First Responder,” Politics Impedes Fiscal Response

Policy Measures Implemented To Date

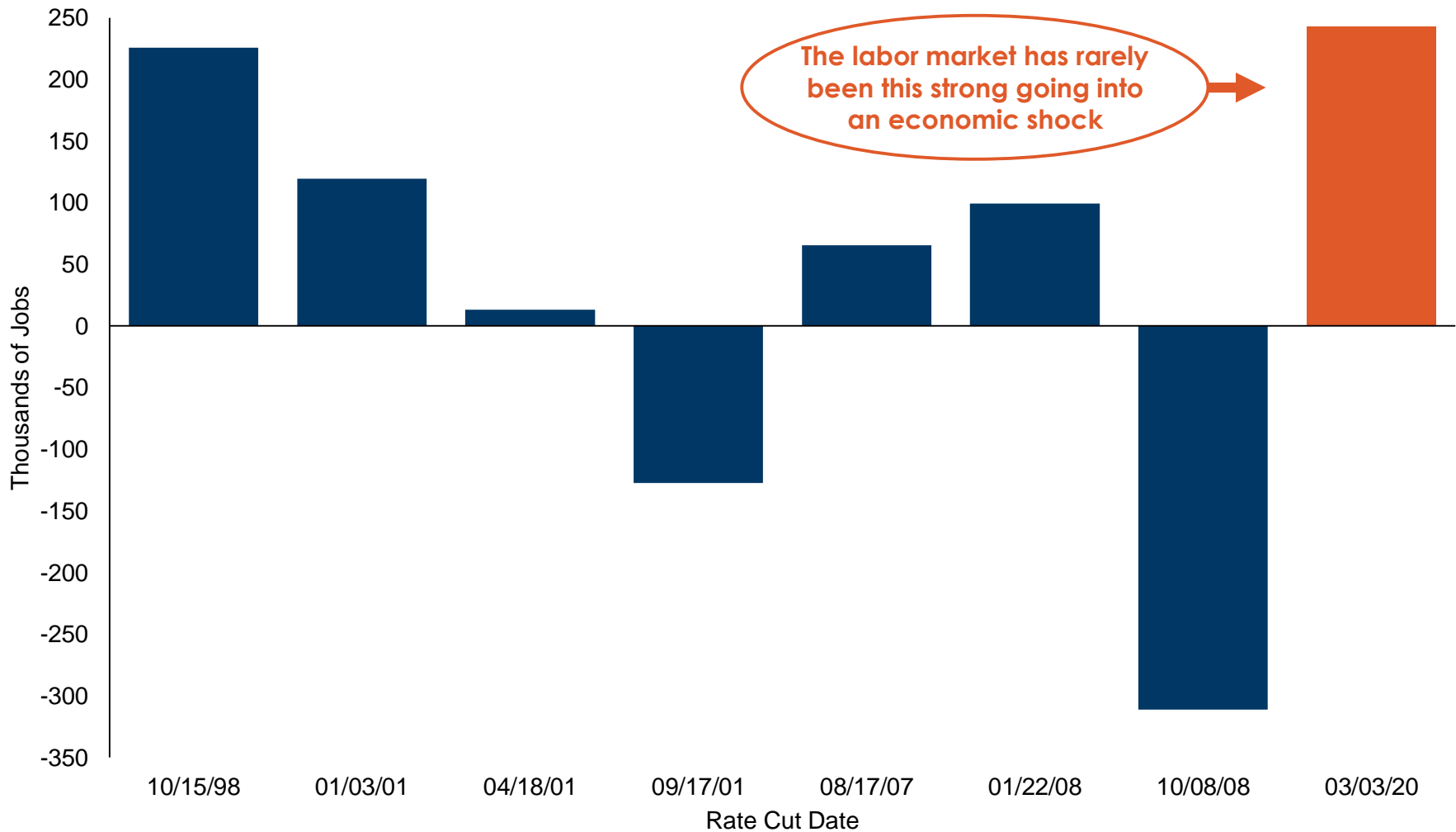
	Liquidity (Fed)	Monetary (Fed)	Fiscal (Federal Government)
Sooner	Repo Operations ✓ Discount Window ✓	Cut rates to Zero Lower Bound ✓ Forward Guidance - “rates to remain low until economy recovers” ✓	Free and expanded virus testing ✓ National Emergency - \$50 Billion ✓
	Reserve Requirement to Zero ✓	QE - Asset Purchases of Treasuries (\$500 Billion) ✓	Interest waived on student loans, Aiding oil companies (Strategic reserves) and airlines (tax receipts suspended) ✓
	Coordinated central bank action to enhance provision of U.S. dollar liquidity ✓	QE - Asset Purchases of agency MBS (\$200 Billion) ✓	House Bill - Paid Sick Leave, Paid Family Leave, Enhance unemployment benefits, food aid, Medicaid funds ✓
Later	Federal Reserve Act 13(3) - Commercial Paper Facility ✓	Expand Quantitative Easing	Loans for businesses More tax breaks for businesses
	Primary Dealer Credit Facility ✓	Purchasing Corporate Bonds (Could ask Congress to expand legal authority)	One-time cash infusion to consumers, businesses
	Federal Reserve Act 13(3) – Term Asset Backed Securities Loan Facility, Muni, And/OR Small Business Facility		Temporary payroll tax cut
			Aid to state/local governments Bailouts for key industries (airlines)

Source: Payden Economics



Good News: The U.S. Economy Was On Solid Footing Going Into Virus Outbreak

3-Month Moving Average of Job Growth When The Fed Had An Emergency Rate Cut



Source: Bureau of Labor Statistics, Bloomberg